

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION**

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**ORDER R5-2015-0078  
NPDES NO. CA0081957**

**WASTE DISCHARGE REQUIREMENTS FOR  
WHEELABRATOR SHASTA ENERGY COMPANY, INC.  
SHASTA COUNTY**

The following Discharger is subject to waste discharge requirements (WDR's) set forth in this Order:

**Table 1. Discharger Information**

<b>Discharger</b>	Wheelabrator Shasta Energy Company, Inc.
<b>Name of Facility</b>	Wheelabrator Shasta Energy Company, Inc.
<b>Facility Address</b>	20811 Industry Road
	Anderson, CA 96007
	Shasta County

**Table 2. Discharge Location**

<b>Discharge Point</b>	<b>Effluent Description</b>	<b>Discharge Point Latitude (North)</b>	<b>Discharge Point Longitude (West)</b>	<b>Receiving Water</b>
001	Reverse osmosis reject water, boiler blow-down, cooling tower blowdown, equipment condensate, plant maintenance water, dust control water, storm water, and groundwater	40° 25' 49"	122° 16' 32"	Anderson Cottonwood Irrigation District Canal
003	Groundwater, storm water	40° 25' 49"	122° 16' 32"	Anderson Cottonwood Irrigation District Canal

**Table 3. Administrative Information**

This Order was adopted on:	<b>5 June 2015</b>
This Order shall become effective on:	<b>1 August 2015</b>
This Order shall expire on:	<b>31 July 2020</b>
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDR's in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	<b>3 February 2020</b>
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows:	Minor

I, Pamela Creedon, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **5 June 2015**.

Original signed by  
**PAMELA C. CREEDON**, Executive Officer

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## I. FACILITY INFORMATION

Information describing the Wheelabrator Shasta Energy Company, Inc. (Facility) is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

## II. FINDINGS

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

- A. Legal Authorities.** This Order serves as WDR's pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this Facility to surface waters.
- B. Background and Rationale for Requirements.** The Central Valley Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E and G through H are also incorporated into this Order.
- C. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections IV.B, IV.C, and V.B are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- D. Monitoring and Reporting.** 40 C.F.R. section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment E.

The technical and monitoring reports in this Order are required in accordance with Water Code section 13267, which states the following in subsection (b)(1), *"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 discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region could affect the quality of waters 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 report 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."*

The Discharger owns and operates the Facility subject to this Order. The monitoring reports required by this Order are necessary to determine compliance with this Order. The need for the monitoring reports is discussed in the Fact Sheet.

- E. Notification of Interested Parties.** The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.
- F. Consideration of Public Comment.** The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

**THEREFORE, IT IS HEREBY ORDERED** that Order R5-2009-0044 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Central Valley Water Board from taking enforcement action for past violations of the previous Order.

### III. DISCHARGE PROHIBITIONS

- A.** Discharge of wastewater from the Facility, as the Facility is specifically described in the Fact Sheet in section II.B, in a manner different from that described in this Order is prohibited.
- B.** The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).
- C.** Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the Water Code.
- D.** The discharge of leachate from wood fuel stockpiles to surface waters or surface water drainage courses is prohibited.
- E.** The discharge of ash, bark, sawdust, wood, debris, or any other such wastes to surface water or surface water drainage courses is prohibited.
- F.** The direct discharge of hazardous or toxic substances, including water treatment chemicals, solvents, or petroleum products (i.e., oil, grease, gasoline, and diesel) to surface waters or groundwater is prohibited.
- G.** The direct discharge of domestic wastewater to the under drain system is prohibited.
- H.** Discharge of waste classified as "hazardous" as defined in section 2521(a) of Title 23, California Code of Regulations (CCR), section 2510, et seq., or "designated", as defined in section 13173 of the Water Code, is prohibited.
- I.** The discharge of waste to the proposed fuel pile storm water retention pond is prohibited until the provisions of the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) are satisfied, and any identified water quality mitigation measures are implemented, effective, and maintained.

### IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

#### A. Effluent Limitations – Discharge Point 001

##### 1. Final Effluent Limitations – Discharge Point 001

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001, as described in the Monitoring and Reporting Program, Attachment E:

- a. The Discharger shall maintain compliance with the effluent limitations specified in Table 4:

**Table 4. Final Effluent Limitations at Discharge Point 001**

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
<b>Conventional Pollutants</b>					
pH	standard units	--	--	6.5	9.0
<b>Non-Conventional Pollutants</b>					
Chlorine, Total Residual	mg/L	0.01	0.02	--	--
Electrical Conductivity @ 25°C	µmhos/cm	990	1,200	--	--
Settleable Solids	mL/L	0.1	0.2	--	--

- b. **Acute Whole Effluent Toxicity.** Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
  - i. 70%, minimum for any one bioassay;
  - ii. 90%, median for any three consecutive bioassays.
- c. **Chronic Whole Effluent Toxicity.** There shall be no chronic toxicity in the effluent discharge.
- d. **Flow.** The discharge of process water (non-storm water and under drain water) shall not exceed 4.5 million gallons per day (MGD).

**2. Interim Effluent Limitations – Not Applicable**

**B. Land Discharge Specifications**

- 1. **Domestic Sewage.** The Discharger is required to properly operate, maintain, and monitor the domestic sewage collection, treatment, and disposal system.

**C. Recycling Specifications – Not Applicable**

**V. RECEIVING WATER LIMITATIONS**

**A. Surface Water Limitations**

The discharge shall not cause the following in Anderson Cottonwood Irrigation District Canal:

- 1. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.
- 2. **Biostimulatory Substances.** Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
- 3. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.
- 4. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.
- 5. **Dissolved Oxygen:**
  - a. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;
  - b. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor

- c. The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.
6. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
7. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
8. **pH.** The pH to be depressed below 6.5 nor raised above 8.5.
9. **Pesticides:**
  - a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
  - b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
  - c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by U.S. EPA or the Executive Officer;
  - d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 C.F.R. 131.12.);
  - e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;
  - f. Pesticides to be present in concentration in excess of the maximum contaminant levels (MCL's) set forth in CCR, Title 22, division 4, chapter 15; nor
  - g. Thiobencarb to be present in excess of 1.0 µg/L.
10. **Radioactivity:**
  - a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
  - b. Radionuclides to be present in excess of the MCL's specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the California Code of Regulations.
11. **Suspended Sediments.** The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
12. **Settleable Substances.** Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
13. **Suspended Material.** Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.
14. **Taste and Odors.** Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.
15. **Temperature.** The natural temperature to be increased by more than 5°F. Compliance shall be determined as described in Section VII.C of this Order.

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

17. **Turbidity.** The turbidity to:

- a. Exceed 2 Nephelometric Turbidity Units (NTU) where natural turbidity is less than 1 NTU;
- b. Increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;
- c. Increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;
- d. Increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor
- e. Increase more than 10 percent where natural turbidity is greater than 100 NTUs.

#### **B. Groundwater Limitations**

1. Release of waste constituents from any storage, treatment, or disposal component associated with the Facility shall not cause or contribute to groundwater containing concentrations of constituents greater than background water quality or concentrations specified below, whichever is greater:
  - a. Nitrate as nitrogen of 10 mg/L.
  - b. Electrical conductivity of 900  $\mu$ mhos/cm.
  - c. For constituents identified in Title 22, the MCLs established therein.

### **VI. PROVISIONS**

#### **A. Standard Provisions**

1. The Discharger shall comply with all Standard Provisions included in Attachment D.
2. The Discharger shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:
  - a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, division 3, chapter 26.
  - b. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:
    - i. violation of any term or condition contained in this Order;
    - ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;
    - iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and
    - iv. a material change in the character, location, or volume of discharge.

The causes for modification include:

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

- ii. *Land application plans.* When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.
- iii. *Change in sludge use or disposal practice.* Under 40 C.F.R. section 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

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

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

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

- d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:
  - i. Contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or
  - ii. Controls any pollutant limited in the Order.

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

- e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.
- f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.
- g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by U.S. EPA under section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.
- h. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.
- i. Safeguard to electric power failure:
  - i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.
  - ii. Upon written request by the Central Valley Water Board, the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power

sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past 5 years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Central Valley Water Board.

- iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Central Valley Water Board not approve the existing safeguards, the Discharger shall, within 90 days of having been advised in writing by the Central Valley Water Board that the existing safeguards are inadequate, provide to the Central Valley Water Board and U.S. EPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Central Valley Water Board, become a condition of this Order.
- j. The Discharger, upon written request of the Central Valley Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under the Central Valley Water Board Standard Provision contained in section VI.A.2.i of this Order.

The technical report shall:

- i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.
- ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.
- iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

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

- k. A publicly owned treatment works whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last 3 years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in 4 years, the Discharger shall notify the Central Valley Water Board by 31 January. A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Central Valley Water Board may extend the time for submitting the report.
- l. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein that involve planning, investigation, evaluation, or

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

- m. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.
- n. For publicly owned treatment works, prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a permanent decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (Water Code section 1211).
- o. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

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

- p. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.
- q. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Central Valley Water Board by telephone (530) 224-4845 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Central Valley Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

## B. Monitoring and Reporting Program (MRP) Requirements

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

## C. Special Provisions

### 1. Reopener Provisions

- a. Conditions that necessitate a major modification of a permit are described in 40 C.F.R. section 122.62, including, but not limited to:
  - i. If new or amended applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.
  - ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.
- b. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.
- c. **Mercury.** If mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted, this Order shall be reopened and an effluent concentration or mass limitation imposed. If the Central Valley Water Board determines that a mercury offset program is feasible for Dischargers subject to a NPDES permit, then this Order may be reopened to reevaluate the need for a mercury offset program for the Discharger.
- d. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions that would require the establishment of numeric chronic toxicity effluent limitations, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on the new provisions.
- e. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable. If the Discharger performs studies to determine site-specific WER's and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- f. **Mixing Zone and Dilution Studies.** This Order may be reopened to modify effluent limitations, as appropriate, if the Discharger submits a mixing zone and dilution study demonstrating that dilution credits are appropriate.

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

- a. **Toxicity Reduction Evaluation Requirements.** For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity (WET) testing, as specified in MRP section V. Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exceeds the numeric

toxicity monitoring trigger during accelerated monitoring established in this Provision, the Discharger is required to initiate a TRE in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TRE's are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This Provision includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

- i. **Accelerated Monitoring and TRE Initiation.** When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. The Discharger shall initiate a TRE to address effluent toxicity if any WET testing results exceed the numeric toxicity monitoring trigger during accelerated monitoring.
- ii. **Numeric Toxicity Monitoring Trigger.** The numeric toxicity monitoring trigger to initiate a TRE is  $>1 \text{ TUc}$  (where  $\text{TUc} = 100/\text{NOEC}$ ). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE.
- iii. **Accelerated Monitoring Specifications.** If the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity testing, the Discharger shall initiate accelerated monitoring within 14-days of notification by the laboratory of the exceedance. Accelerated monitoring shall consist of four chronic toxicity tests conducted once every two weeks using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:
  - (a) If the results of four consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.
  - (b) If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.
  - (c) If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and begin a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of any test result exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:
    - (1) Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;
    - (2) Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and

(3) A schedule for these actions.

Within sixty (60) days of notification by the laboratory of the test results, the Discharger shall submit to the Central Valley Water Board a TRE Workplan for approval by the Executive Officer. The TRE Workplan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE Workplan must be developed in accordance with U.S. EPA guidance<sup>1</sup>.

- b. **Groundwater Evaluation.** This Order includes groundwater limitations and requires the Discharger to monitor groundwater to determine compliance with the groundwater limitations. If the groundwater monitoring data indicate that the groundwater electrical conductivity exceeds 500 µmhos/cm and/or nitrate (as N) exceeds 5 mg/L in the downgradient wells, the Discharger is required to review trends and potential corrective actions, in accordance with the following schedule:

Task	Compliance Date
i. Submit a work plan and time schedule for approval of the Executive Officer for completing a groundwater evaluation that includes a review of groundwater trends and potential corrective actions for minimizing impacts to groundwater.	Within 6 months following exceedance of EC and/or nitrate (as N) triggers described above.
ii. Complete the evaluation and submit a report summarizing the results of the evaluation and corrective actions implemented or proposed for implementation.	Within 24 months following Executive Officer approval of the workplan and time schedule.

**3. Best Management Practices and Pollution Prevention**

- a. **Salinity Evaluation and Minimization Plan.** The Discharger shall update and continue to implement its salinity evaluation and minimization plan to identify and address sources of salinity from the Facility. The updated plan shall be completed and submitted to the Central Valley Water Board by 2 May 2016. The Discharger shall provide annual reports demonstrating reasonable progress in the reduction of salinity in its discharge to the Anderson Cottonwood Irrigation District Canal. The annual reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, section X.D.1).
- b. **Storm Water Pollution Controls**
  - i. Prior to **15 October** of each year, the Discharger shall implement necessary erosion control measures and any necessary construction, maintenance, or repairs of drainage and erosion control facilities.
  - ii. The Discharger has prepared a Storm Water Pollution Prevention Plan (SWPPP) containing best management practices to reduce pollutants in the storm water discharges. The Discharger shall review and amend as appropriate the SWPPP whenever there are changes that may affect the discharge of significant quantities of pollutants to surface water, if there are violations of this permit, or if the general objective of controlling pollutants in the storm water discharges has not been achieved. The amended SWPPP shall be submitted prior to **15 October** in the year in which it was prepared.

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<sup>1</sup> See the Fact Sheet (Attachment F, section VI.B.2.a.) for a list of U.S. EPA guidance documents that must be considered in development of the TRE Workplan.

- iii. By **1 July** of each year, the Discharger shall submit a Storm Water Annual Report for the previous fiscal year (1 July to 30 June). The report shall be signed in accordance with Standard Provisions V.B and may be submitted using the General Industrial Storm Water Annual Report Form, provided by the State Water Resources Control Board, or in a format that contains equivalent information.

#### **4. Construction, Operation and Maintenance Specifications**

- a. Objectionable odors originating at this Facility shall not be perceivable beyond the limits of the property owned by the Discharger.
- b. No waste constituent shall be released, discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes a violation of the Groundwater Limitations of this Order.
- c. Wastewater treatment, storage, and disposal shall not cause pollution or a nuisance as defined by Water Code section 13050.
- d. All conveyance, treatment, storage, and disposal systems shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
- e. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.
- f. The discharge shall not cause degradation of any water supply.
- g. Management of wood fuel stockpiles and ash stockpiles shall not adversely affect groundwater quality.
- h. **Retention Pond and Proposed Fuel Pile Storm Water Pond Operating Requirements**
  - i. The retention pond and proposed fuel pile storm water pond, if built, shall be managed to prevent breeding of mosquitoes. In particular:
    - (a) An erosion control program should ensure that small coves and irregularities are not created around the perimeter of the water surface.
    - (b) Weeds shall be minimized.
    - (c) Dead algae, vegetation, and debris shall not accumulate on the water surface.
  - ii. The Discharger shall operate and maintain all ponds sufficiently to protect the integrity of containment dams and berms and prevent overtopping and/or structural failure. Unless a California-registered civil engineer certifies (based on design, construction, and conditions of operation and maintenance) that less freeboard is adequate, the operating freeboard in any pond shall never be less than two feet (measured vertically from the lowest possible point of overflow). As a means of management and to discern compliance with this requirement, the Discharger shall install and maintain in each pond a permanent staff gauge with calibration marks that clearly show the water level at design capacity and enable determination of available operational freeboard.
  - iii. As a means of discerning compliance with Provision VI.C.4.a, above, the dissolved oxygen (DO) content in the upper one foot of the retention pond and/or the proposed fuel pile storm water pond shall not be less than 1.0 mg/L for three consecutive sampling events. If the DO in any single pond is below 1.0 mg/L for three consecutive sampling events, the Discharger shall either 1) report the findings to the Central Valley Water Board in writing within 10 days and shall include a specific plan

to resolve the low DO results within 30 days; or 2) report the results to the Central Valley Water Board in writing within 10 days and immediately initiate a study that addresses vector (mosquito) control, the potential for odors, and the potential for mobilization of metals to groundwater. If the Discharger elects to initiate a study, the Discharger shall submit the results of the study to the Central Valley Water Board within 45 days of the date upon which the third DO measurement less than 1.0 mg/L was taken.

**i. Fire and Cooling Water Ponds Operating Requirements**

- i. The dissolved oxygen content of the East and West Fire Ponds shall not be less than 1.0 mg/L for 16 hours in any 24-hour period.
- ii. Freeboard shall not be less than one foot (measured vertically to the lowest point of overflow), as described in the letter from the Central Valley Water Board to the Discharger dated 7 June 2010.

**5. Special Provisions for Municipal Facilities (POTW's Only) – Not Applicable**

**6. Other Special Provisions**

**a. Sludge, Wood Waste, and/or Ash Storage**

- i. Collected screenings, sludge, and other solids removed from liquid wastes, including pond sediments, shall be disposed of in a manner approved by the Executive Officer and consistent with the Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solids Waste, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq.
- ii. **Ash Management Plan.** By 30 October 2015, the Discharger shall submit an ash management plan to the Central Valley Water Board. The plan shall describe at a minimum:
  - (a) Sources and amount of ash generated annually.
  - (b) Location(s) of on-site storage and description of containment area.
  - (c) Plans for ultimate disposal. For landfill disposal, include the present classification of the landfill and the name and location of the landfill.
- iii. Any proposed change in sludge or ash use or disposal practices shall be reported to the Executive Officer at least 30 days in advance of the change.
- iv. Non-hazardous fly ash removed from the Facility shall be:
  - (a) Beneficially reused, such as for 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 require approval by the Executive Officer or the Central Valley Water Board.
- v. This Order does not authorize storage, transportation, or disposal of ash or other wastes characterized as hazardous wastes. Appropriate separate regulatory coverage must be secured for such activities.

**7. Compliance Schedules – Not Applicable**

**VII. COMPLIANCE DETERMINATION**

- A. Total Residual Chlorine Effluent Limitations (Section IV.A.1.a).** Continuous monitoring analyzers for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the effluent limitations. This type of monitoring can also be used to prove that some chlorine residual exceedances are false positives. Continuous monitoring data showing either a positive dechlorination agent residual or a chlorine residual at or below the prescribed limit are sufficient to show compliance with the total residual chlorine effluent limitations, as long as the instruments are maintained and calibrated in accordance with the manufacturer's recommendations.

Any excursion above the AMEL and MDEL for chlorine residual is a violation. If the Discharger conducts continuous monitoring and the Discharger can demonstrate, through data collected from a back-up monitoring system, that a chlorine spike recorded by the continuous monitor was not actually due to chlorine, then any excursion resulting from the recorded spike will not be considered an exceedance, but rather reported as a false positive. Records supporting validation of false positives shall be maintained in accordance with Section IV Standard Provisions (Attachment D).

- B. Chronic Whole Effluent Toxicity Effluent Limitation (Section IV.A.1.c).** Compliance with the accelerated monitoring and TRE provisions of Provision VI.C.2.a shall constitute compliance with the effluent limitation.
- C. Compliance with Receiving Water Temperature Limitations (Section V.A.15.).** This Order requires the Discharger to collect temperature data in the Anderson Cottonwood Irrigation District Canal and includes a receiving water limitation for temperature. Previous Order R5-2009-0044 required compliance with the receiving water limitation for temperature to be determined at monitoring locations RSW-001 and RSW-003. This effectively granted a mixing zone for temperature in the Canal. This Order allows the Discharger to determine compliance with the receiving water limitation for temperature at RSW-001 and either RSW-002 or RSW-003. If the temperature reading at the RSW-002 monitoring location indicates that there is an exceedance of the receiving water limitation for temperature, this Order allows the Discharger to collect a temperature reading at the RSW-003 monitoring location for determining compliance. Thus, this Order effectively carries over the mixing zone granted in previous Order R5-2009-0044.

## ATTACHMENT A – DEFINITIONS

### Arithmetic Mean ( $\mu$ )

Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

$$\text{Arithmetic mean} = \mu = \Sigma x / n \quad \text{where: } \Sigma x \text{ is the sum of the measured ambient water concentrations, and } n \text{ is the number of samples.}$$

### Average Monthly Effluent Limitation (AMEL)

The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

### Average Weekly Effluent Limitation (AWEL)

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

### Best Practicable Treatment or Control (BPTC)

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

### Bioaccumulative

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

### Carcinogenic

Pollutants are substances that are known to cause cancer in living organisms.

### Coefficient of Variation (CV)

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

### Daily Discharge

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

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

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

**Detected, but Not Quantified (DNQ)**

DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

**Dilution Credit**

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

**Effluent Concentration Allowance (ECA)**

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

**Enclosed Bays**

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

**Estimated Chemical Concentration**

The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

**Estuaries**

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

**Inland Surface Waters**

All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

**Instantaneous Maximum Effluent Limitation**

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

**Instantaneous Minimum Effluent Limitation**

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

**Maximum Daily Effluent Limitation (MDEL)**

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

**Median**

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

**Method Detection Limit (MDL)**

MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

**Minimum Level (ML)**

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

**Mixing Zone**

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

**Not Detected (ND)**

Sample results which are less than the laboratory's MDL.

**Ocean Waters**

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

**Persistent Pollutants**

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

**Pollutant Minimization Program (PMP)**

PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Central Valley Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

**Pollution Prevention**

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

**Satellite Collection System**

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

**Source of Drinking Water**

Any water designated as municipal or domestic supply (MUN) in a Central Valley Water Board Basin Plan.

**Standard Deviation ( $\sigma$ )**

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

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

where:

x is the observed value;

$\mu$  is the arithmetic mean of the observed values; and

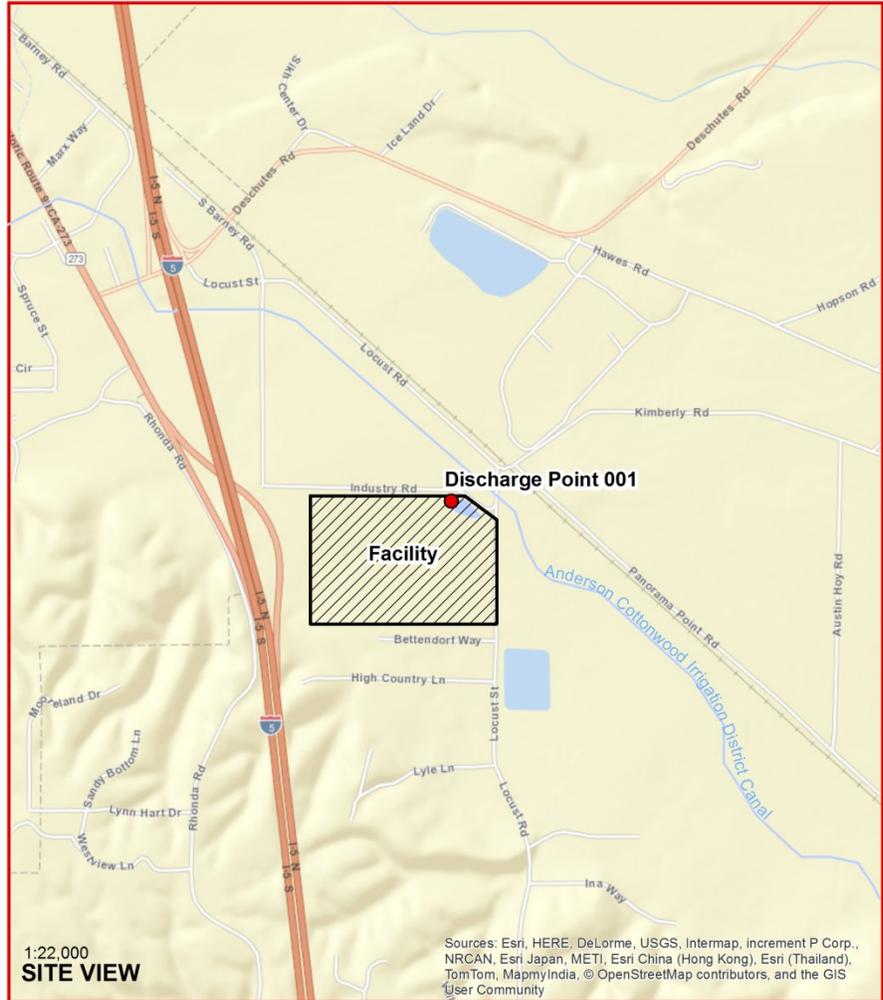
n is the number of samples.

**Toxicity Reduction Evaluation (TRE)**

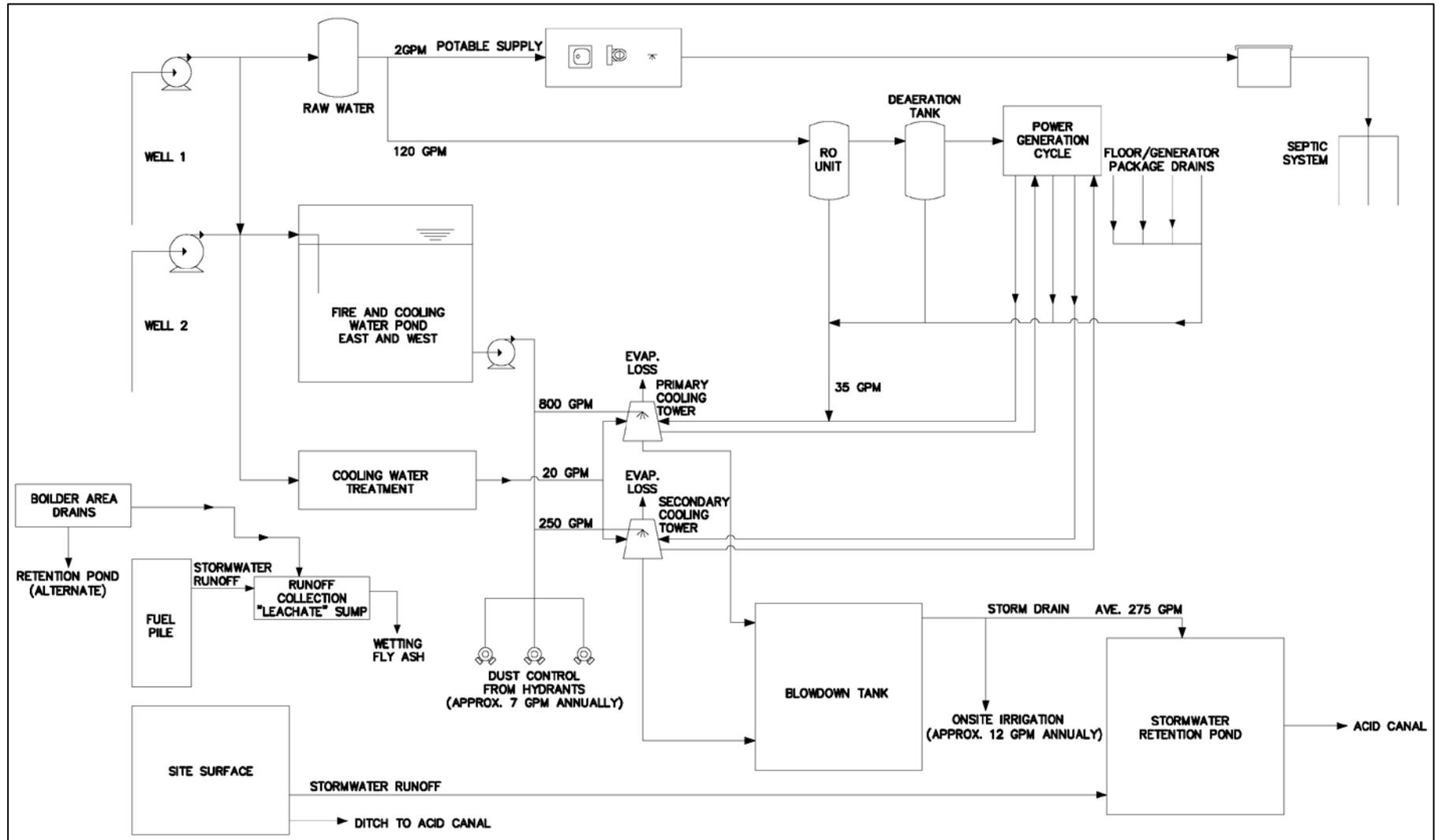
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

**ATTACHMENT B – MAP**

Wheelabrator Shasta  
Energy Co. Inc.



ATTACHMENT C – FLOW SCHEMATIC



**ATTACHMENT D – STANDARD PROVISIONS****I. STANDARD PROVISIONS – PERMIT COMPLIANCE****A. Duty to Comply**

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

**B. Need to Halt or Reduce Activity Not a Defense**

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

**C. Duty to Mitigate**

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

**D. Proper Operation and Maintenance**

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

**E. Property Rights**

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

**F. Inspection and Entry**

The Discharger shall allow the Central Valley Water Board, State Water Board, U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i); Wat. Code, § 13267, 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, § 13267, 13383); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C § 1318(a)(4)(B); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

## G. Bypass

1. Definitions
  - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)
  - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)
3. Prohibition of bypass. Bypass is prohibited, and the Central Valley Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
  - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
  - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
  - c. The Discharger submitted notice to the Central Valley Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
4. The Central Valley Water Board may approve an anticipated bypass, after considering its adverse effects, if the Central Valley Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)

**5. Notice**

- a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)
- b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii).)

**H. Upset**

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)
2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
  - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
  - b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));
  - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
  - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

**II. STANDARD PROVISIONS – PERMIT ACTION****A. General**

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

**B. Duty to Reapply**

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

**C. Transfers**

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

**III. STANDARD PROVISIONS – MONITORING**

- A.** Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)
- B.** Monitoring results must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. subchapters N or O. In the case of pollutants for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants. (40 C.F.R. § 122.41(j)(4); 122.44(i)(1)(iv).)

**IV. STANDARD PROVISIONS – RECORDS**

- A.** Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)
- B.** Records of monitoring information shall include:
  - 1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
  - 2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
  - 3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
  - 4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
  - 5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
  - 6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)
- C.** Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):
  - 1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
  - 2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

**V. STANDARD PROVISIONS – REPORTING****A. Duty to Provide Information**

The Discharger shall furnish to the Central Valley Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Central Valley Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Central Valley Water Board, State Water Board, or U.S.

EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, §§ 13267, 13383.)

## **B. Signatory and Certification Requirements**

1. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)
2. All permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. § 122.22(a)(1).)
3. All reports required by this Order and other information requested by the Central Valley Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
  - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and
  - c. The written authorization is submitted to the Central Valley Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Central Valley Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)
5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and

belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” (40 C.F.R. § 122.22(d).)

### **C. Monitoring Reports**

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Central Valley Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Central Valley Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

### **D. Compliance Schedules**

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

### **E. Twenty-Four Hour Reporting**

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):
  - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
  - b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
3. The Central Valley Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

### **F. Planned Changes**

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. § 122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. § 122.41(l)(1)(iii).)

#### **G. Anticipated Noncompliance**

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

#### **H. Other Noncompliance**

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

#### **I. Other Information**

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

### **VI. STANDARD PROVISIONS – ENFORCEMENT**

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

### **VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS**

#### **A. Non-Municipal Facilities**

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

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(1)):
  - a. 100 micrograms per liter ( $\mu\text{g/L}$ ) (40 C.F.R. § 122.42(a)(1)(i));
  - b. 200  $\mu\text{g/L}$  for acrolein and acrylonitrile; 500  $\mu\text{g/L}$  for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(1)(ii));
  - c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or
  - d. The level established by the Central Valley Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(1)(iv).)

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(2)):
  - a. 500 micrograms per liter ( $\mu\text{g/L}$ ) (40 C.F.R. § 122.42(a)(2)(i));
  - b. 1 milligram per liter ( $\text{mg/L}$ ) for antimony (40 C.F.R. § 122.42(a)(2)(ii));
  - c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii)); or
  - d. The level established by the Central Valley Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(2)(iv).)

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**ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)**

The Code of Federal Regulations (40 C.F.R. § 122.48) requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and California regulations.

**I. GENERAL MONITORING PROVISIONS**

- A.** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Central Valley Water Board.
- B.** Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.
- C.** Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory certified for such analyses by the State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW; formerly the Department of Public Health). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board. In the event a certified laboratory is not available to the Discharger for any onsite field measurements such as pH, dissolved oxygen (DO), turbidity, temperature, and residual chlorine, such analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any onsite field measurements such as pH, DO, turbidity, temperature, and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to U.S. EPA guidelines or to procedures approved by the Central Valley Water Board.
- D.** Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.
- E.** Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.
- F.** Laboratories analyzing monitoring samples shall be certified by DDW, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.
- G.** The Discharger shall file with the Central Valley Water Board technical reports on self-monitoring performed according to the detailed specifications contained in this Monitoring and Reporting Program.
- H.** The results of all monitoring required by this Order shall be reported to the Central Valley Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations

and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

**II. MONITORING LOCATIONS**

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

**Table E-1. Monitoring Station Locations**

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	EFF-001	A location where a representative sample of the effluent from the retention pond can be obtained. Latitude: 40° 25' 49" N Longitude: 122° 16' 32" W
003	EFF-003	A location where a representative sample of effluent from the westerly under drain can be obtained. Latitude: 40° 25' 49" N Longitude: 122° 16' 32" W
--	RSW-001	In Anderson Cottonwood Irrigation District Canal, approximately 50 feet upstream from Discharge Point 001 unless this location is within the influence of the backwater condition, in which case samples shall be collected upstream of the discharge point at the first accessible location outside the influence of the backwater condition.
--	RSW-002	In Anderson Cottonwood Irrigation District Canal, approximately 50 feet downstream from Discharge Point 001.
--	RSW-003	In Anderson Cottonwood Irrigation District Canal, at the confluence/potential overflow point into Schmeider Gulch.
--	P-1-P-8, P-10, P-11	Leachfield piezometers.
--	MW-4, MW-5, and MW-6	Groundwater monitoring wells.
--	LND-001	A location where a representative sample of wastewater delivered to the landscape irrigation system from the blowdown tank can be obtained.
--	PND-001	Fire and Cooling Water Pond West (formerly the Blowdown Pond).
--	PND-002	Fire and Cooling Water Pond East.
--	PND-003	Proposed Fuel Pile Storm Water Pond

The North latitude and West longitude information in Table E-1 are approximate for administrative purposes.

**III. INFLUENT MONITORING REQUIREMENTS – NOT APPLICABLE**

**IV. EFFLUENT MONITORING REQUIREMENTS**

**A. Monitoring Location EFF-001**

1. The Discharger shall monitor effluent from the retention pond at Monitoring Location EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

**Table E-2. Effluent Monitoring**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Estimate	1/Day	--
<b>Conventional Pollutants</b>				
Oil and Grease	mg/L	Grab	2/Year <sup>1</sup>	<sup>2</sup>

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	standard units	Grab	1/Week <sup>3</sup>	<sup>2</sup>
Total Suspended Solids	mg/L	Grab	2/Year <sup>1</sup>	<sup>2</sup>
<b>Priority Pollutants</b>				
Arsenic, Total Recoverable	µg/L	Grab	2/Year <sup>4</sup>	<sup>2,5</sup>
Chromium, Total Recoverable	µg/L	Grab	2/Year <sup>4</sup>	<sup>2,5</sup>
Priority Pollutants and Other Constituents of Concern	See Section IX.E	See Section IX.E	See Section IX.E	<sup>2,5</sup>
<b>Non-Conventional Pollutants</b>				
Chemical Oxygen Demand	mg/L	Grab	2/Year <sup>1</sup>	<sup>2</sup>
Chloride	mg/L	Grab	1/Month	<sup>2</sup>
Chlorine, Total Residual	mg/L	Grab	1/Week	<sup>2,6</sup>
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week	<sup>2</sup>
General Minerals <sup>7</sup>	mg/L	Grab	1/Year <sup>8</sup>	<sup>2</sup>
Hardness, Total (as CaCO <sub>3</sub> )	mg/L	Grab	1/Month	<sup>2</sup>
Molybdenum	µg/L	Grab	2/Year <sup>4</sup>	<sup>2</sup>
Settleable Solids	ml/L	Grab	1/Week	<sup>2</sup>
Sulfate	mg/L	Grab	1/Month	<sup>2</sup>
Tannins and Lignins	mg/L	Grab	2/Year <sup>1</sup>	<sup>2</sup>
Temperature	°F/°C	Grab	1/Week <sup>3</sup>	<sup>2</sup>
Total Dissolved Solids	mg/L	Grab	1/Week	<sup>2</sup>
Turbidity	NTU	Grab	1/Month <sup>8</sup>	<sup>2</sup>
Vanadium	µg/L	Grab	2/Year <sup>4</sup>	<sup>2</sup>

<sup>1</sup> Samples shall be collected during the first hour of the first storm water discharge after the dry season (dry season is defined as May through September) and once thereafter during the wet season. If samples during the first hour of the first storm water discharge after the dry season cannot be collected for reasons that are beyond the reasonable control of the Discharger (e.g., unsafe sampling conditions), samples shall be collected at the earliest opportunity and the Discharger shall document in the SMRs when this occurs.

<sup>2</sup> Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

<sup>3</sup> A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

<sup>4</sup> Monitoring shall occur once between April and October when water is diverted into the Anderson Cottonwood Irrigation District Canal and once between November and March when there is any upstream flow in the Anderson Cottonwood Irrigation District Canal.

<sup>5</sup> For priority pollutant constituents the reporting level shall be consistent with Sections 2.4.2 and 2.4.3 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (See Attachment E, Table E-14).

<sup>6</sup> Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L.

<sup>7</sup> General minerals shall include the following: bicarbonate, carbonate, calcium, chloride, magnesium, nitrate (as N), potassium, silica, sodium, and sulfate.

<sup>8</sup> Monitoring shall occur between April and October when water is diverted into the Anderson Cottonwood Irrigation District Canal for irrigation.

**B. Monitoring Location EFF-003**

1. When flows are occurring, the Discharger shall monitor effluent from the westerly under drain at Monitoring Location EFF-003 as follows.

**Table E-3. Under Drain System Monitoring Requirements**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	GPD	Estimate	1/Day	--
<b>Conventional Pollutants</b>				
pH	standard units	Grab	1/Month	1,3
<b>Non-Conventional Pollutants</b>				
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month	1,3
General Minerals <sup>2</sup>	mg/L	Grab	1/Year	1

<sup>1</sup> Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.  
<sup>2</sup> General minerals include: bicarbonate, carbonate, calcium, chloride, magnesium, nitrate (as N), potassium, silica, sodium, and sulfate.  
<sup>3</sup> A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

**V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS**

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

1. Monitoring Frequency – The Discharger shall perform annual (1/year) acute toxicity testing during the third and fourth years following the permit effective date.
2. Sample Types – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001.
3. Test Species – Test species shall be rainbow trout (*Oncorhynchus mykiss*).
4. Methods – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.
5. Test Failure – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

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

1. Monitoring Frequency – The Discharger shall perform annual (1/year) three species chronic toxicity testing during the third and fourth years following the permit effective date.
2. Sample Types – Effluent samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring

Location EFF-001. The receiving water control shall be a grab sample obtained from Monitoring Location RSW-001, as identified in this Monitoring and Reporting Program.

3. Sample Volumes – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.
4. Test Species – Chronic toxicity testing measures sublethal (e.g., reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:
  - a. The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);
  - b. The fathead minnow, *Pimephales promelas* (larval survival and growth test); and
  - c. The green alga, *Selenastrum capricornutum* (growth test).
5. Methods – The presence of chronic toxicity shall be estimated as specified in Short-term Methods for Estimating the *Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002.
6. Reference Toxicant – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.
7. Dilutions – For routine and accelerated chronic toxicity monitoring, it is not necessary to perform the test using a dilution series. The test may be performed using 100% effluent and one control. For TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-4, below, unless an alternative dilution series is detailed in the submitted TRE Action Plan. A receiving water control or laboratory water control may be used as the diluent.

**Table E-4. Chronic Toxicity Testing Dilution Series**

Sample	Dilutions <sup>1</sup> (%)					Control
	100	75	50	25	12.5	
% Effluent	100	75	50	25	12.5	0
% Control Water	0	25	50	75	87.5	100

<sup>1</sup> Receiving water control or laboratory water control may be used as the diluent.

8. Test Failure – The Discharger must re-sample and re-test as soon as possible, but no later than fourteen (14) days after receiving notification of a test failure. A test failure is defined as follows:
  - a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002 (Method Manual), and its subsequent amendments or revisions; or
  - b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in Table 6 on page 52 of the Method Manual. (A retest is only required in this case if the test results do not exceed the monitoring trigger specified in the Special Provision at section VI.C.2.a.ii. of the Order.)

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

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

1. **Chronic WET Reporting.** Regular chronic toxicity monitoring results shall be reported to the Central Valley Water Board with the monthly self-monitoring report, and shall contain, at minimum:

- a. The dates of sample collection and initiation of each toxicity test; and
- b. The results compared to the numeric toxicity monitoring trigger.

Additionally, the monthly self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or Toxicity Reduction Evaluation (TRE).

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

3. **TRE Reporting.** Reports for TRE’s shall be submitted in accordance with the schedule contained in the Discharger’s approved TRE Workplan, or as amended by the Discharger’s TRE Action Plan.

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

- a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.
- b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.
- c. Any information on deviations or problems encountered and how they were dealt with.

**VI. LAND DISCHARGE MONITORING REQUIREMENTS**

**A. Domestic Waste Treatment System**

The Discharger shall inspect the domestic waste treatment system monthly.

**B. Landscape Irrigation System**

1. The Discharger shall monitor wastewater supplied to the landscape irrigation system from the blowdown tank at Monitoring Location LND-001 as follows:

**Table E-5. Landscape Irrigation System Monitoring Requirements**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Cumulative	1/Day	--
Chloride	mg/L	Grab	1/Month	1
Dissolved Oxygen	mg/L	Grab	1/Month	1,3
pH	standard units	Grab	1/Month	1,3
Sulfate	mg/L	Grab	1/Month	1
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month	1,3
General Minerals <sup>2</sup>	mg/L	Grab	1/Year	1

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
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- <sup>1</sup> Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
- <sup>2</sup> General minerals include: bicarbonate, carbonate, calcium, chloride, magnesium, nitrate (as N), potassium, silica, sodium, and sulfate.
- <sup>3</sup> A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

**C. Fire and Cooling Water Ponds**

1. The fire and cooling water ponds shall be inspected on a regular basis to check for liner failure and/or leakage. The Discharger shall monitor the fire and cooling water ponds at Monitoring Locations PND-001 and PND-002 as follows:

**Table E-6. Fire and Cooling Water Ponds Monitoring Requirements**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Freeboard Depth	feet, inches	Visual	1/Week	--
Dissolved Oxygen	mg/L	Grab	1/Month	1,2

- <sup>1</sup> Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
- <sup>2</sup> A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

**D. Fuel Pile Storm Water Pond**

1. The Discharger shall monitor the proposed fuel pile storm water pond, once it is built and operational, at Monitoring Location PND-003, as follows, unless conditions are unsafe, in which case, the Discharger shall note in the SMRs that samples were not collected due to the conditions:

**Table E-7. Fuel Pile Storm Water Pond Monitoring Requirements**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Freeboard Depth	feet, inches	Visual	1/Week	--
Dissolved Oxygen	mg/L	Grab	1/Month <sup>3</sup>	1,2

- <sup>1</sup> Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
- <sup>2</sup> A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.
- <sup>3</sup> If the dissolved oxygen is below 1 mg/L, the Discharger shall collect two additional samples at a minimum sampling frequency of 1/week.

**VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE**

**VIII. RECEIVING WATER MONITORING REQUIREMENTS**

**A. Monitoring Locations RSW-001, RSW-002, and RSW-003**

1. The Discharger shall monitor the Anderson Cottonwood Irrigation District Canal at Monitoring Locations RSW-001 and RSW-002 . If the only flows at RSW-001 are due to backwater conditions (the discharge backing up), and there are no other upstream flows from other sources, monitoring at RSW-001 is not required.

**Table E-8. Receiving Water Monitoring Requirements at RSW-001 and RSW-002**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Estimate	1/Month	--
<b>Conventional Pollutants</b>				
pH	standard units	Grab	1/Month	1,5
<b>Priority Pollutants</b>				
Priority Pollutants and Other Constituents of Concern	See Section IX.E	See Section IX.E	See Section IX.E <sup>2</sup>	1,3
<b>Non-Conventional Pollutants</b>				
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month	1,5
Hardness, Total (as CaCO <sub>3</sub> )	mg/L	Grab	1/Month	1
Temperature	°F/°C	Grab	1/Month	1,5
Total Dissolved Solids	mg/L	Grab	1/Quarter <sup>4</sup>	1
Turbidity	NTU	Grab	1/Month	1,5

<sup>1</sup> Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

<sup>2</sup> Monitoring for priority pollutants and other constituents of concern shall be conducted at Monitoring Location RSW-001 only.

<sup>3</sup> For priority pollutant constituents the reporting level shall be consistent with Sections 2.4.2 and 2.4.3 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (See Attachment E, Table E-14).

<sup>4</sup> Twice between April through October, when water is diverted into the Anderson Cottonwood Irrigation District Canal for irrigation and twice during November through March when there is upstream flow in the Anderson Cottonwood Irrigation District Canal that is not a result of irrigation water diversions.

<sup>5</sup> A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

2. The Discharger shall monitor temperature in the Anderson Cottonwood Irrigation District Canal at Monitoring Location RSW-003 only if the temperature at RSW-002 is greater than 5°F warmer than the temperature at RSW-001, as follows:

**Table E-9. Receiving Water Monitoring Requirements at RSW-003**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Temperature	°F/°C	Grab	1/Month <sup>1</sup>	2,3,4

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
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- 1 Samples shall be collected on the same day as temperature samples at monitoring location RSW-001.
- 2 During storm water runoff and/or other miscellaneous flows (November through March) when there is upstream flow in the Anderson Cottonwood Irrigation District Canal.
- 3 Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
- 4 A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

3. A log shall be kept of the receiving water conditions throughout the reach bounded by Monitoring Locations RSW-001 and RSW-002. Attention shall be given to the presence or absence of:
  - a. Upstream flow;
  - b. Floating or suspended matter;
  - c. Oil sheen or slick;
  - d. Discoloration;
  - e. Scum or foam;
  - f. Bottom deposits;
  - g. Aquatic life; and
  - h. Bark or sawdust.

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

**B. Groundwater Monitoring Wells MW-4, MW-5, and MW-6**

1. Prior to construction and/or beginning a sampling program of any new groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for approval. Once installed, all new wells shall be added to the monitoring network (which currently consists of Monitoring Wells MW-4, MW-5, and MW-6) and shall be sampled and analyzed according to the schedule below. All samples shall be collected using approved EPA methods. Water table elevations shall be calculated to determine groundwater gradient and direction of flow.
2. Prior to sampling, the groundwater elevations shall be measured and the wells shall be adequately purged to remove water that has been standing within the well screen and casing that may not be chemically representative of formation water. Depending on the hydraulic conductivity of the geologic setting, the volume removed during purging is typically from 3 to 5 volumes of the standing water within the well casing and screen, or additionally the filter pack pore volume. The well(s) should be purged until temperature, pH, and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater monitoring at MW-4, MW-5, and MW-6 and any new groundwater monitoring wells shall include, at a minimum, the following:

**Table E-10. Groundwater Monitoring Requirements**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Depth to Groundwater	±0.01 feet	Measurement	2/Year	--

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Groundwater Elevation <sup>1</sup>	feet & 100 <sup>th</sup> , MSL	Grab	2/Year	--
Gradient	feet/feet	Calculated	2/Year	--
Gradient Direction	degrees	Calculated	2/Year	--
Chloride	mg/L	Grab	2/Year	2
Electrical Conductivity @ 25°C	µmhos/cm	Grab	2/Year	2
Nitrate, Total (as N)	mg/L	Grab	2/Year	2
pH	standard units	Grab	2/Year	2
Sulfate	mg/L	Grab	2/Year	2
Tannins and Lignins	mg/L	Grab	2/Year	2
Temperature	°C	Grab	2/Year	2
Total Dissolved Solids	mg/L	Grab	2/Year	2
Turbidity	NTU	Grab	2/Year	2
Metals <sup>3</sup>	µg/L	Grab	1/2 Years	2,5
Bicarbonate	mg/L	Grab	1/5 Years	2
Calcium	mg/L	Grab	1/5 Years	2
Carbonate	mg/L	Grab	1/5 Years	2
Magnesium	mg/L	Grab	1/5 Years	2
Organics <sup>4</sup>	µg/L	Grab	1/5 Years	2
Potassium	mg/L	Grab	1/5 Years	2
Sodium	mg/L	Grab	1/5 Years	2

- <sup>1</sup> Groundwater elevation shall be determined based on depth-to-water measurements from a surveyed measuring point elevation on the well. The groundwater elevation shall be used to calculate the direction and gradient of groundwater flow, which must be reported.
- <sup>2</sup> Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
- <sup>3</sup> Metals include arsenic, chromium (total and hexavalent), copper, iron, manganese, and zinc.
- <sup>4</sup> Organics include phenols, cresols, pentachlorophenol, and tetrachlorophenol.
- <sup>5</sup> Samples shall be filtered through a 0.45-µm filter prior to sample analyses.

**C. Leachfield Monitoring (Piezometers P-1 through P-8, P-10, and P-11)**

1. The Discharger shall inspect the leachfield weekly and report the presence or absence of saturated soils or standing liquid. All leachfield piezometers shall be monitored to determine if the leachfield is properly draining, and to observe the separation to groundwater. The results shall be submitted with the monthly monitoring report and include the following:

**Table E-11. Leachfield Monitoring Requirements**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Depth to Water	feet, inches	--	1/Quarter	--
Gradient	feet/feet	--	1/Quarter	--
Groundwater Flow Direction	--	--	1/Quarter	--

**IX. OTHER MONITORING REQUIREMENTS**

**A. Precipitation Monitoring**

1. Precipitation information shall be collected as follows and reported in the monthly SMR:

**Table E-12. Precipitation Monitoring Requirements**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Precipitation	inches (+/- 0.1)	Visual	1/Day <sup>1</sup>	--

<sup>1</sup> Reading shall be taken at approximately the same time each day.

**B. Water Supply**

1. The Discharger shall monitor the water supply wells at the Facility. Samples shall be collected, analyzed, and reported in accordance with the standards provided by the Shasta County Department of Resource Management, Environmental Health Division. A report of the water supply monitoring shall be submitted with the monthly monitoring report.

**C. Aboveground Petroleum Storage Monitoring**

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

**D. Ash Monitoring**

1. Wood ash information shall be collected and reported in the SMRs in accordance with the table below.

**Table E-13. Ash Monitoring Requirements**

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Ash Generated	Dry tons <sup>1</sup>	Composite	1/Month	--
Ash Stored at Facility	Dry tons <sup>1</sup>	Composite	1/Month	--
Ash Stored Off-site	Dry tons <sup>1</sup>	Composite	1/Month	--
Ash Removed from Facility and from Off-site Storage Location	Dry tons <sup>1</sup>	Composite	1/Month	--
Ash Liming Capacity	Equiv % CaCO <sub>3</sub>	Composite	2/Year <sup>8</sup>	UC Davis Method 440 or AOAC 955.01 <sup>2</sup>
Ash Total Phosphorus	mg/kg	Composite	2/Year <sup>8</sup>	<sup>3</sup>
Moisture Content	% moisture	Composite	2/Year	<sup>3</sup>
pH	standard units	Composite	2/Year	<sup>3</sup>
CAM 17 Metals <sup>4</sup>	mg/kg	Composite	2/Year	3,5
2,3,7,8-TCDD and congeners <sup>6</sup>	pg/g	Composite	1/Year <sup>7</sup>	U.S. EPA Method 1613

<sup>1</sup> Units may be reported in volume or weight measurement.

<sup>2</sup> A&L Western Agricultural Laboratories “Neutralizing value of liming materials (or percent calcium carbonate equivalency-CCE).”

<sup>3</sup> Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

<sup>4</sup> California Administrative Manual (i.e., CCR) metals: antimony, arsenic, barium, beryllium, cadmium,

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
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chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc.

<sup>5</sup> In accordance with Title 22, CCR testing procedures.

<sup>6</sup> Dioxin equivalents, also known as the TEQ, is a calculated value that reflects the combined effect of dioxin and furan compounds (congeners). Results for dioxin TEQ shall include all congeners.

<sup>7</sup> Upon Executive Officer approval, sampling frequency may be reduced after two consecutive years of data have been submitted.

<sup>8</sup> Only for ash used as an agricultural soil amendment.

2. The Discharger shall record the following information about wood ash removed from the Facility and submit in the monthly SMR:

- a. Disposal location or soil amendment application area (i.e., name and address);
- b. For agricultural soil amendment application, area of land where ash is applied (acres); and
- c. Volume and/or weight of ash for each location/area.

**E. Effluent and Receiving Water Characterization**

1. **Monitoring.** Samples shall be collected from the effluent and upstream receiving water (Monitoring Locations EFF-001 and RSW-001) and analyzed for the constituents listed in Table E-14, below. Monitoring shall be conducted once per year during the third and fourth years following the permit effective date and the results of such monitoring shall be submitted to the Central Valley Water Board with the monthly SMR's. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.
2. **Concurrent Sampling.** Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.
3. **Sample Type.** All effluent and receiving water samples shall be taken as grab samples.

**Table E-14. Effluent and Receiving Water Characterization Monitoring**

Parameter	Units	Effluent Sample Type	Maximum Reporting Level <sup>1</sup>
2-Chloroethyl vinyl ether	µg/L	Grab	1
Acrolein	µg/L	Grab	2
Acrylonitrile	µg/L	Grab	2
Benzene	µg/L	Grab	0.5
Bromoform	µg/L	Grab	0.5
Carbon Tetrachloride	µg/L	Grab	0.5
Chlorobenzene	µg/L	Grab	0.5
Chloroethane	µg/L	Grab	0.5
Chloroform	µg/L	Grab	2
Chloromethane	µg/L	Grab	2
Dibromochloromethane	µg/L	Grab	0.5
Dichlorobromomethane	µg/L	Grab	0.5
Dichloromethane	µg/L	Grab	2
Ethylbenzene	µg/L	Grab	2
Hexachlorobenzene	µg/L	Grab	1
Hexachlorobutadiene	µg/L	Grab	1
Hexachloroethane	µg/L	Grab	1

Parameter	Units	Effluent Sample Type	Maximum Reporting Level <sup>1</sup>
Methyl bromide (Bromomethane)	µg/L	Grab	1
Naphthalene	µg/L	Grab	10
Parachlorometa cresol	µg/L	Grab	--
Tetrachloroethene	µg/L	Grab	0.5
Toluene	µg/L	Grab	2
trans-1,2-Dichloroethylene	µg/L	Grab	1
Trichloroethene	µg/L	Grab	2
Vinyl chloride	µg/L	Grab	0.5
Methyl-tert-butyl ether (MTBE)	µg/L	Grab	--
Trichlorofluoromethane	µg/L	Grab	--
1,1,1-Trichloroethane	µg/L	Grab	0.5
1,1-dichloroethane	µg/L	Grab	0.5
1,1-dichloroethylene	µg/L	Grab	0.5
1,2-dichloropropane	µg/L	Grab	0.5
1,3-dichloropropylene	µg/L	Grab	0.5
1,1,2,2-tetrachloroethane	µg/L	Grab	0.5
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	Grab	0.5
1,2,4-trichlorobenzene	µg/L	Grab	1
1,2-dichloroethane	µg/L	Grab	0.5
1,2-dichlorobenzene	µg/L	Grab	0.5
1,3-dichlorobenzene	µg/L	Grab	0.5
1,4-dichlorobenzene	µg/L	Grab	0.5
Styrene	µg/L	Grab	--
Xylenes	µg/L	Grab	--
1,2-Benzanthracene	µg/L	Grab	5
1,2-Diphenylhydrazine	µg/L	Grab	1
2-Chlorophenol	µg/L	Grab	5
2,4-Dichlorophenol	µg/L	Grab	5
2,4-Dimethylphenol	µg/L	Grab	2
2,4-Dinitrophenol	µg/L	Grab	5
2,4-Dinitrotoluene	µg/L	Grab	5
2,4,6-Trichlorophenol	µg/L	Grab	10
2,6-Dinitrotoluene	µg/L	Grab	5
2-Nitrophenol	µg/L	Grab	10
2-Chloronaphthalene	µg/L	Grab	10
3,3'-Dichlorobenzidine	µg/L	Grab	5
3,4-Benzofluoranthene	µg/L	Grab	10
4-Chloro-3-methylphenol	µg/L	Grab	5
4,6-Dinitro-2-methylphenol	µg/L	Grab	10
4-Nitrophenol	µg/L	Grab	10
4-Bromophenyl phenyl ether	µg/L	Grab	10
4-Chlorophenyl phenyl ether	µg/L	Grab	5
Acenaphthene	µg/L	Grab	1
Acenaphthylene	µg/L	Grab	10
Anthracene	µg/L	Grab	10
Benzidine	µg/L	Grab	5
Benzo(a)pyrene (3,4-Benzopyrene)	µg/L	Grab	2
Benzo(g,h,i)perylene	µg/L	Grab	5
Benzo(k)fluoranthene	µg/L	Grab	2
Bis(2-chloroethoxy) methane	µg/L	Grab	5

Parameter	Units	Effluent Sample Type	Maximum Reporting Level <sup>1</sup>
Bis(2-chloroethyl) ether	µg/L	Grab	1
Bis(2-chloroisopropyl) ether	µg/L	Grab	10
Bis(2-ethylhexyl) phthalate <sup>2</sup>	µg/L	Grab	5
Butyl benzyl phthalate	µg/L	Grab	10
Chrysene	µg/L	Grab	5
Di-n-butylphthalate	µg/L	Grab	10
Di-n-octylphthalate	µg/L	Grab	10
Dibenzo(a,h)-anthracene	µg/L	Grab	0.1
Diethyl phthalate	µg/L	Grab	10
Dimethyl phthalate	µg/L	Grab	10
Fluoranthene	µg/L	Grab	10
Fluorene	µg/L	Grab	10
Hexachlorocyclopentadiene	µg/L	Grab	5
Indeno(1,2,3-c,d)pyrene	µg/L	Grab	0.05
Isophorone	µg/L	Grab	1
N-Nitrosodiphenylamine	µg/L	Grab	1
N-Nitrosodimethylamine	µg/L	Grab	5
N-Nitrosodi-n-propylamine	µg/L	Grab	5
Nitrobenzene	µg/L	Grab	10
Pentachlorophenol	µg/L	Grab	1
Phenanthrene	µg/L	Grab	5
Phenol	µg/L	Grab	1
Pyrene	µg/L	Grab	10
Aluminum	µg/L	Grab	--
Antimony	µg/L	Grab	5
Arsenic <sup>3</sup>	µg/L	Grab	10
Asbestos	µg/L	Grab	--
Beryllium	µg/L	Grab	2
Cadmium	µg/L	Grab	0.5
Chromium (III)	µg/L	Grab	50
Chromium (VI)	µg/L	Grab	10
Copper	µg/L	Grab	5
Cyanide	µg/L	Grab	5
Fluoride	µg/L	Grab	--
Iron	µg/L	Grab	--
Lead	µg/L	Grab	2
Mercury	µg/L	Grab	0.5
Manganese	µg/L	Grab	--
Molybdenum <sup>3</sup>	µg/L	Grab	--
Nickel	µg/L	Grab	20
Selenium	µg/L	Grab	5
Silver	µg/L	Grab	2
Thallium	µg/L	Grab	1
Zinc	µg/L	Grab	20
4,4'-DDD	µg/L	Grab	0.05
4,4'-DDE	µg/L	Grab	0.05
4,4'-DDT	µg/L	Grab	0.01
alpha-Endosulfan	µg/L	Grab	0.02
alpha-Hexachlorocyclohexane (BHC)	µg/L	Grab	0.01
Aldrin	µg/L	Grab	0.005

Parameter	Units	Effluent Sample Type	Maximum Reporting Level <sup>1</sup>
beta-Endosulfan	µg/L	Grab	0.01
beta-Hexachlorocyclohexane	µg/L	Grab	0.005
Chlordane	µg/L	Grab	0.1
delta-Hexachlorocyclohexane	µg/L	Grab	0.005
Dieldrin	µg/L	Grab	0.01
Endosulfan sulfate	µg/L	Grab	0.01
Endrin	µg/L	Grab	0.01
Endrin Aldehyde	µg/L	Grab	0.01
Heptachlor	µg/L	Grab	0.01
Heptachlor Epoxide	µg/L	Grab	0.02
Lindane (gamma-Hexachlorocyclohexane)	µg/L	Grab	0.5
PCB-1016	µg/L	Grab	0.5
PCB-1221	µg/L	Grab	0.5
PCB-1232	µg/L	Grab	0.5
PCB-1242	µg/L	Grab	0.5
PCB-1248	µg/L	Grab	0.5
PCB-1254	µg/L	Grab	0.5
PCB-1260	µg/L	Grab	0.5
Toxaphene	µg/L	Grab	--
2,3,7,8-TCDD (Dioxin)	µg/L	Grab	--
Ammonia (as N)	mg/L	Grab	--
Boron	µg/L	Grab	--
Foaming Agents (MBAS)	µg/L	Grab	--
Mercury, Methyl	ng/L	Grab	--
Nitrite (as N)	mg/L	Grab	--
Phosphorus, Total (as P)	mg/L	Grab	--
Sulfide (as S)	mg/L	Grab	--
Sulfite (as SO <sub>3</sub> )	mg/L	Grab	--

<sup>1</sup> The reporting levels required in this table for priority pollutant constituents are established based on Section 2.4.2 and Appendix 4 of the SIP.

<sup>2</sup> In order to verify if bis (2-ethylhexyl) phthalate is truly present, the Discharger shall take steps to assure that sample containers, sampling apparatus, and analytical equipment are not sources of the detected contaminant.

<sup>3</sup> The Discharger is not required to conduct effluent monitoring for constituents that have already been sampled in a given month, as required in Table E-2, except for hardness, pH, and temperature, which shall be conducted concurrently with the effluent sampling.

## X. REPORTING REQUIREMENTS

### A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. Upon written request of the Central Valley Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).
3. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act" of 1986.

**B. Self-Monitoring Reports (SMR's)**

1. The Discharger shall electronically submit SMR's using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://ciwqs.waterboards.ca.gov>). The CIWQS Web site will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.
2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit monthly SMR's including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMR's are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

**Table E-15. Monitoring Periods and Reporting Schedule**

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
1/Day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
1/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Month	Permit effective date	1 <sup>st</sup> day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
1/Quarter	Permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February of following year
2/Year	Permit effective date	1 January through 30 June 1 July through 31 December	Submit monthly SMR in which sample was collected
1/Year	Permit effective date	1 January through 31 December	Submit with Annual Report
1/Year (Annual Report)	Permit effective date	1 January through 31 December	1 February of the following year
1/2 Years	Permit effective date	varies	Submit with Annual Report
1/5 Years	Permit effective date	varies	Submit with Annual Report

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current laboratory's Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. part 136.

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

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

- For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy ( $\pm$  a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
  - d. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
5. **Multiple Sample Data.** When determining compliance with an AMEL or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
- a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
  - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
6. The Discharger shall submit SMR's in accordance with the following requirements:
- a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
  - b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDR's; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.
  - c. The Discharger shall attach all laboratory analysis sheets, including quality assurance/quality control information, with all its SMR's for which sample analyses were performed.
7. The Discharger shall submit in the SMR's calculations and reports in accordance with the following requirements:

- a. **Dissolved Oxygen Receiving Water Limitations.** The Discharger shall calculate and report monthly in the SMR: i) the dissolved oxygen concentration, ii) the percent of saturation in the main water mass, and iii) the 95<sup>th</sup> percentile dissolved oxygen concentration.
- b. **Turbidity Receiving Water Limitations.** The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition specified in Section V.A.17.a-e. of the Limitations and Discharge Requirements.
- c. **Temperature Receiving Water Limitations.** The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002 or RSW-003.
- d. **Groundwater Monitoring Reports.** The reports shall be prepared by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities, and shall bear the professional's signature and stamp. Each semi-annual report shall contain:
  - i. Results of the monitoring of the groundwater in tabular format;
  - ii. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to verify compliance with this Order. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;
  - iii. Calculation of groundwater elevations, determination of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any;
  - iv. Summary data tables of historical and current groundwater elevations;
  - v. Copies of laboratory analytical report(s) for groundwater monitoring.

### **C. Discharge Monitoring Reports (DMR's) – Not Applicable**

### **D. Other Reports**

1. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by Special Provisions – VI.C. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date.
2. By 4 August 2015, the Discharger shall submit a report outlining reporting levels (RL's), method detection limits (MDL's), and analytical methods for the constituents listed in tables E-2, E-3, E-5, E-6, E-7, E-8, E-9, E-10, and E-13. In addition, no less than 6 months prior to conducting the effluent and receiving water characterization monitoring required in Section IX.E, the Discharger shall submit a report outlining RL's, MDL's, and analytical methods for the constituents listed in Table E-14. The Discharger shall comply with the monitoring and reporting requirements for CTR constituents as outlined in section 2.3 and 2.4 of the SIP. The maximum required reporting levels for priority pollutant constituents shall be based on the Minimum Levels (ML's) contained in Appendix 4 of the SIP, determined in accordance with Section 2.4.2 and Section 2.4.3 of the SIP. In accordance with Section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Central Valley Water Board shall include as RL's, in the permit, all ML values, and their associated analytical methods, listed in Appendix 4 that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical methods for compliance

determination. If no ML value is below the effluent limitation, then the Central Valley Water Board shall select as the RL, the lowest ML value, and its associated analytical method, listed in Appendix 4 for inclusion in the permit. Table E-14 provides required maximum reporting levels in accordance with the SIP.

3. **Annual Operations Report.** By **1 February** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:
  - a. The names and general responsibilities of all persons employed at the Facility.
  - b. The names and telephone numbers of persons to contact regarding the Facility for emergency and routine situations.
  - c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.
  - d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the Facility as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.
  - e. The Discharger may also be requested to submit an annual report to the Central Valley Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

**ATTACHMENT F – FACT SHEET**

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**ATTACHMENT F – FACT SHEET**

As described in section II.B of this Order, the Central Valley Water Board incorporates this Fact Sheet as findings of the Central Valley Water Board supporting the issuance of this Order. This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

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

**I. PERMIT INFORMATION**

The following table summarizes administrative information related to the Facility.

**Table F-1. Facility Information**

<b>WDID</b>	5A452033001
<b>CIWQS Facility Place ID</b>	272395
<b>Discharger</b>	Wheelabrator Shasta Energy Company, Inc.
<b>Name of Facility</b>	Wheelabrator Shasta Energy Company, Inc.
<b>Facility Address</b>	20811 Industry Road
	Anderson, CA 96007
	Shasta County
<b>Facility Contact, Title and Phone</b>	Derrick Boom, Environmental Manager, (530) 339-7627
<b>Authorized Person to Sign and Submit Reports</b>	Ralph Sanders, Plant Manager, (530) 339-7600
<b>Mailing Address</b>	Same as Facility Address
<b>Billing Address</b>	Same as Facility Address
<b>Type of Facility</b>	Standard Industrial Classification (SIC) Code 4911 – Electrical Services
<b>Major or Minor Facility</b>	Minor
<b>Threat to Water Quality</b>	2
<b>Complexity</b>	B
<b>Pretreatment Program</b>	Not Applicable
<b>Recycling Requirements</b>	Not Applicable
<b>Facility Permitted Flow</b>	4.5 million gallons per day (MGD)
<b>Facility Design Flow</b>	Not Applicable
<b>Watershed</b>	Redding Hydrologic Unit, Enterprise Flat Hydrologic Area (508.10)
<b>Receiving Water</b>	Anderson Cottonwood Irrigation District Canal
<b>Receiving Water Type</b>	Inland surface water

A. Wheelabrator Shasta Energy Company, Inc., (hereinafter Discharger) is the owner and operator of Wheelabrator Shasta Energy Company, Inc. (hereinafter Facility), an electrical power generation facility.

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

- B.** The Facility discharges wastewater to the Anderson Cottonwood Irrigation District Canal, a water of the United States, tributary to the Sacramento River via Crowley Creek, Gotta Creek, Hooker Creek, Patterson Creek, and Cottonwood Creek in the Redding Hydrologic Unit, Enterprise Flat Hydrologic Area (508.10) watershed. The Discharger was previously regulated by Order R5-2009-0044 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0081957 adopted on 24 April 2009 and expired on 1 April 2014. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. The State Water Board retains the jurisdictional authority to enforce such requirements under Water Code section 1211.

- C.** The Discharger filed a report of waste discharge (ROWD) and submitted an application for reissuance of its waste discharge requirements (WDR's) and NPDES permit on 3 June 2013. The application was deemed complete on 2 December 2014. A site visit was conducted on 13 November 2014 to observe operations and collect additional data to develop permit limitations and requirements for waste discharge.

## **II. FACILITY DESCRIPTION**

The Facility is a 54-megawatt biomass electrical generation facility located on approximately 75 acres. The Facility is located south of the City of Anderson.

The Facility consists of biomass storage areas, two truck scales, three platform truck dumpers, hammer hog with scalpers and conveyers, fuel dumping and metering bins, infeed/offload conveyors, one 50-foot high stacker with 1,100 foot long overpile reclaimers, three boilers each producing 190,000 lb/hr of steam, three ash reinjection systems, three multicyclone collectors, three electrostatic precipitators, three ammonia injection NOX control systems, four turbine generators, two multi-cell evaporator cooling towers, an electrical switch yard, secondary contained aboveground petroleum and hazardous materials storage areas, water treatment chemical storage and use, equipment fueling and maintenance areas, paved and unpaved roadways, three water supply wells, a laboratory, a retention pond, two fire and cooling water ponds, a septic tank leachfield system, and an office.

Order R5-2009-0044 was issued for the Facility and the Wheelabrator Lassen Inc. natural gas fired power plant (hereinafter Lassen facility). The Lassen facility shut down on 16 April 2013 and the connection between the Lassen facility and the retention pond at the Facility was severed on 31 May 2013. The Lassen facility is permanently closed and the equipment has been removed from the site. Therefore, this Order authorizes discharges from the Facility only.

### **A. Description of Wastewater and Biosolids Treatment and Controls**

The Facility's wastes include cooling tower blowdown, boiler blowdown, reject water from the reverse osmosis (RO) system, condensate (compressor, air receivers, and air conditioning units), fuel storage pile leachate, fly ash, bottom ash, waste petroleum products, universal wastes, miscellaneous hazardous wastes (such as paint), sewage, groundwater from the under drain systems, and storm water runoff.

The Discharger has installed three supply wells at the Facility; however, only two are currently in use. The water is pumped from the wells into one of two fire and cooling water ponds (Fire Pond East and Fire Pond West) or to a raw water tank. The raw water tank supplies the high purity water system, plant water for facility maintenance, and water for potable uses.

In mid-2014, the Discharger converted the former blowdown pond into an additional fire and cooling water pond (Fire Pond West) in order to increase the capacity for fire protection and

cooling water; however, the Discharger still maintains the ability to use Fire Pond West for blowdown water if needed. The fire and cooling water ponds are used for supplying the firewater system pumps, primary and secondary cooling towers, and soft blowdown tanks. To reduce algal growths, the ponds are treated with chlorine at quantities necessary to maintain a residual of 0.2-0.5 parts per million (ppm). The fire and cooling water ponds are lined with a 36-mil synthetic plastic.

The high purity water system consists of three RO treatment units that treat groundwater for use in the boilers. Reject water from RO treatment is disposed of in the primary and secondary cooling towers. Treated water from the RO treatment units is directed to a deaeration tank and is then used as make-up water for the boilers.

Blowdown from the boilers discharges to the turbine hall sump where it combines with pumped groundwater prior to entering the primary cooling tower. Wastewater from the primary and secondary cooling towers is directed to the blowdown tank. Wastewater in the blowdown tank is dechlorinated using sodium bisulfite and then discharged to either the retention pond or landscape irrigation system.

Effluent from the Facility continuously discharges to the 2.8-acre, unlined retention pond. The retention pond receives an average of 400,000 gallons per day (gpd) of wastewater from the blowdown tank, wastewater from plant maintenance, condensate, and storm water runoff. Additionally, an internal under drain system removes shallow groundwater from within the Facility and discharges to the retention pond. The retention pond is highly vegetated with cattails, tall grass, trees, and shrubs, which decrease flow velocity and increase retention time, allowing for additional settling and heat loss. The retention pond contents drain into an open channel, through a 60-inch concrete pipe, and through a 12-inch discharge pipe before discharging into the Anderson Cottonwood Irrigation District Canal at Discharge Point 001. A portion of the groundwater from the westerly under drain system is discharged to the Anderson Cottonwood Irrigation District Canal at Discharge Point 003.

The primary fuel source for the Discharger's power plant is biomass from off-site sources; natural gas is used as a supplementary fuel for startup and flame stabilization of the plant's boilers. Logs are stored in a log deck storage area located along the east side of the Facility. Water is not sprayed on the logs. Chipped wood waste is removed from trucks using platform dumpers and conveyed to one of the two wood chip piles, or staged on paved areas east of the platform dumpers. Woody yard waste, agricultural waste and railroad ties are stored in piles adjacent to the north hog. Railroad ties are covered and stored onsite.

Paved surfaces and buildings comprise approximately 10 percent of the property. Fuel (biomass) and log storage areas occupy most of the remainder of the site. Storm water runoff from areas of industrial activity flows to the retention pond. The storm water runoff associated with areas where no industrial activities occur are either collected by the westerly under drain system and discharged at Discharge Point 003, or are combined with plant process waters and discharged to the retention pond.

Storm water and waters generated from housekeeping activities in the boiler and ash handling areas are directed to the fuel pile leachate sump, except during periods of heavy rainfall, threats of flooding, or other limited situations when the flows are directed to the retention pond.

Leachate from the fuel pile is pumped into two soft blowdown tanks. This wastewater is used to quench fly ash, a waste product of combustion. When leachate is no longer available, water from the fire and cooling water ponds is used. When excess leachate is generated, it is retained beneath the fuel pile by an earthen berm.

Fly ash is loaded directly into trailers and transported off-site for use as soil amendment. During adverse weather conditions (wet season and/or windy conditions) when it is not suitable or

practical to apply the fly ash as an agricultural soil amendment, fly ash may be temporarily stored in the building at the nearby Roseburg Lumber Products site. Bottom ash is used for on-site and off-site road base, trench filling, grading, and alternate daily cover at regulated landfills. Bottom ash may be staged on-site south of the boilers prior to disposition.

Domestic wastewater from the Facility discharges to a septic system consisting of a lift station, septic tank, pump station, forced main to a distribution tank, and a leachfield north of the office building. Approximately 1,600 gpd of domestic sewage, generated from restroom facilities at the administration building, turbine building, break room, and maintenance building flow into a lift station and are pumped to a septic tank on the east side of the administration building. The Discharger installed a chlorination/dechlorination system for the septic system but proposes to no longer use it.

## B. Discharge Points and Receiving Waters

1. The Facility is located in Section 26, T30N, R4W, MDB&M, as shown in Attachment B, a part of this Order.
2. Reverse osmosis reject water, boiler blow-down, cooling tower blowdown, equipment condensate, plant maintenance water, dust control water, storm water, and groundwater from the westerly under drain system is discharged at Discharge Point 001 to the Anderson Cottonwood Irrigation District Canal, a water of the United States and a tributary to the Sacramento River via Crowley Creek, Gotta Creek, Hooker Creek, Patterson Creek, and Cottonwood Creek at a point latitude 40° 25' 49" N and longitude 122° 16' 32" W.
3. Groundwater from the internal under drain system is discharged at Discharge Point 003 to the Anderson Cottonwood Irrigation District Canal, a water of the United States and a tributary to the Sacramento River via Crowley Creek, Gotta Creek, Hooker Creek, Patterson Creek, and Cottonwood Creek at a point latitude 40° 25' 49" N and longitude 122° 16' 32" W.

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

Effluent limitations contained in Order R5-2009-0044 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2009-0044 are as follows:

**Table F-2. Historic Effluent Limitations and Monitoring Data**

Parameter	Units	Effluent Limitations		Monitoring Data (June 2013 – October 2014) <sup>1</sup>	
		Average Monthly	Maximum Daily	Highest Average Monthly Discharge	Highest Daily Discharge
Chloride	mg/L	106	250	48	71.8
Chlorine, Total Residual	mg/L	0.01	0.02	0.01	0.01
pH	standard units	--	6.5 – 9.0 <sup>2</sup>	--	6.54 – 8.42
Settleable Solids	ml/L	0.1	0.2	0.27	1.0
Electrical Conductivity @ 25°C	µmhos/cm	700	1,000	622	803
Sulfate	mg/L	--	250	--	86.7
Acute Toxicity	% Survival	--	70 <sup>3</sup> /90 <sup>4</sup>	--	100 <sup>5</sup>
Flow	MGD	--	4.5 <sup>6</sup>	--	0.73

Parameter	Units	Effluent Limitations		Monitoring Data (June 2013 – October 2014) <sup>1</sup>	
		Average Monthly	Maximum Daily	Highest Average Monthly Discharge	Highest Daily Discharge

- <sup>1</sup> Monitoring period reflects data collected subsequent to shutdown of Lassen facility.
- <sup>2</sup> Except for discharges associated with a 10-year, 24-hour rainfall event, or greater.
- <sup>3</sup> Minimum for any one bioassay.
- <sup>4</sup> Median for any three consecutive bioassays.
- <sup>5</sup> Represents the minimum observed percent survival.
- <sup>6</sup> The discharge of process water (non-storm water and under drain water) shall not exceed 4.5 MGD.

**D. Compliance Summary**

The Discharger was not subject to any enforcement actions during the term of Order R5-2009-0044.

**E. Planned Changes**

In an effort to improve fuel quality and supply and improve site conditions, the Discharger is proposing to increase the size of the fuel pile and add a pond to hold storm water from the fuel pile area. The expanded fuel pile will allow the Discharger to hold slightly more fuel in a manner that increases flexibility and improves fuel availability during winter months when fuel deliveries are fewer. The proposed pond will allow storm water to drain from the fuel pile area, improving fuel quality and ground conditions, and decreasing odor potential. To construct the pond, the Discharger proposes to move the eastern fuel pile berm to the other side of the log deck and create the new pond to the east of the fuel piles. The Discharger anticipates that the changes will occur in 2015, pending approval from the county and other agencies. Until the fuel pile storm water pond is constructed, the leachate and storm water from the fuel pile will continue to be maintained within the fuel pile area.

**III. APPLICABLE PLANS, POLICIES, AND REGULATIONS**

The requirements contained in this Order are based on the requirements and authorities described in this section.

**A. Legal Authorities**

This Order serves as WDR’s pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit for point source discharges from this Facility to surface waters.

**B. California Environmental Quality Act (CEQA)**

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of the Public Resources Code. This permit prohibits discharge to and from the proposed new storm water holding area/pond, which will retain storm water from the fuel pile area, until the provisions of CEQA are satisfied. On 6 March 2015, the County of Shasta posted a notice of intent to adopt a Mitigated Negative Declaration and initiated a 30-day public review of the Mitigated Negative Declaration for this proposed project.

**C. State and Federal Laws, Regulations, Policies, and Plans**

- 1. **Water Quality Control Plans.** Requirements of this Order specifically implement the applicable Water Quality Control Plans.

- a. **Basin Plan.** The Central Valley Water Board adopted a Water Quality Control Plan, Fourth Edition (Revised October 2011), for the Sacramento and San Joaquin River Basins (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan.

The Basin Plan at II-2.00 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan in Table II-1, Section II, does not specifically identify beneficial uses for the Anderson Cottonwood Irrigation District Canal, but does identify present and potential uses for Cottonwood Creek, to which the Anderson Cottonwood Irrigation District, via Crowley Creek, Gotta Creek, Hooker Creek, Patterson Creek, is hydraulically connected. In addition, the Basin Plan implements State Water Board Resolution 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Thus, beneficial uses applicable to the Anderson Cottonwood Irrigation District Canal are as follows:

**Table F-3. Basin Plan Beneficial Uses**

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 003	Anderson Cottonwood Irrigation District Canal	<p><u>Existing:</u>                      Municipal and domestic supply (MUN); agricultural supply, including stock watering (AGR); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); cold migration of aquatic organisms (MIGR); warm and cold spawning, reproduction, and/or early development (SWPN); and wildlife habitat (WILD).</p> <p><u>Potential:</u>                      Industrial process supply (PRO); industrial service supply (IND); and hydropower generation (POW).</p>
--	Groundwater	<p><u>Existing:</u>                      Municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); and industrial process supply (PRO).</p>

- 2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About forty criteria in the NTR applied in California. On 18 May 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain federal water quality criteria for priority pollutants.
- 3. **State Implementation Policy.** On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on 28 April 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plan. The SIP became effective on 18 May 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005, which became effective on 13 July 2005. The SIP establishes implementation provisions for priority

pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

4. **Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California"). Resolution 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Central Valley Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.
5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.
6. **Domestic Water Quality.** In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
7. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.
8. **Storm Water Requirements.** U.S. EPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from steam electric power generating facilities, which includes any facility that generates steam for electric power through the combustion of coal, oil, wood, etc. Steam electric power generating facilities are applicable industries under the storm water program and are obligated to comply with the federal regulations.

The discharge of industrial storm water from the Facility could be regulated under the General Industrial Storm Water Permit. However, due to the complexity of the Facility operations and unique threats to water quality, the Central Valley Water Board has elected to regulate these discharges with an individual NPDES permit. Therefore, discharges of industrial storm water from the Facility are not covered under the General Industrial Storm Water Permit and are covered under this Order.

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

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum

required levels of pollution control technology. On 11 October 2011, U.S. EPA gave final approval to California's 2008-2010 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLS's), which are defined as "...those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 C.F.R. part 130, et seq.)." The Basin Plan also states, "Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment." The Anderson Cottonwood Irrigation District Canal, Crowley Creek, Gotta Creek, Hooker Creek, Patterson Creek, and Cottonwood Creek are not listed as impaired waterbodies on the 2010 303(d) list.

2. **Total Maximum Daily Loads (TMDL's).** U.S. EPA requires the Central Valley Water Board to develop TMDL's for each 303(d) listed pollutant and water body combination. No TMDL's have been adopted for the receiving water.

#### **E. Other Plans, Policies and Regulations**

1. **Title 27.** Title 27 of the California Code of Regulations (hereafter Title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. Discharges of wastewater to land, including, but not limited to, evaporation ponds or percolation ponds, may be exempt from the requirements of Title 27, CCR, based on section 20090 et seq. The Facility includes a retention pond, two fire/cooling water ponds, and a proposed fuel pile area storm water retention pond, all of which may be exempt from Title 27 pursuant to section 20090(b), the "wastewater exemption." The wastewater exemption has the following preconditions for exemption from Title 27:

**20090(b) Wastewater** – *Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:*

- (1) *the applicable [regional water quality control board] has issued WDRs... or waived such issuance;*
- (2) *the discharge is in compliance with the applicable water quality control plan; and*
- (3) *the wastewater does not need to be managed... as a hazardous waste.*

The retention pond is unlined and the proposed storm water pond will be unlined, and wastewater contained in these ponds percolates to the underlying groundwater; however, groundwater monitoring data indicate that the discharge is in compliance with the Basin Plan, and, thus, meets precondition (2). Therefore, the Facility retention pond is exempt from Title 27 under the wastewater exemption. This Order requires the Discharger to continue collecting groundwater monitoring data.

#### **IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS**

Effluent limitations and toxic and pretreatment effluent standards established pursuant to sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., §1311(b)(1)(C); 40 C.F.R. § 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative

criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to federal regulations, 40 C.F.R. section 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that “*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality.*” Federal regulations, 40 C.F.R. section 122.44(d)(1)(vi), further provide that “[w]here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits.”

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

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: “*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*” (Basin Plan at III-8.00) The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, “*...water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)*” in Title 22 of CCR. The Basin Plan further states that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCLs. The narrative tastes and odors objective states: “*Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.*”

## **A. Discharge Prohibitions**

- 1. Prohibition III.A (No discharge or application of waste other than that described in this Order).** This prohibition is based on Water Code section 13260, which requires filing of a ROWD before discharges can occur. The Discharger submitted a ROWD for the discharges described in this Order; therefore, discharges not described in this Order are prohibited.

2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at 40 C.F.R. section 122.41(m)(4)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. section 122.41(m), define “bypass” as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board’s prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the federal regulations, 40 C.F.R. section 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.
3. **Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050, which requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance.
4. **Prohibition III.D (No discharge of leachate from wood fuel stockpiles to surface waters or surface water drainage courses).** Consistent with Order R5-2009-0044, this Order prohibits discharges of leachate from wood fuel stockpiles to surface water or surface water drainage courses. Currently, leachate from the fuel pile is pumped into two soft blowdown tanks and is then used to wet fly ash prior to shipment. When excess leachate is generated, it is retained beneath the fuel pile by an earthen berm. The Discharger proposed a new storm water retention pond for the fuel pile area, which is scheduled for construction in 2015.
5. **Prohibition III.E (No discharge of ash, bark, sawdust, wood, debris, or any other such wastes to surface water or surface water drainage courses).** Consistent with Order R5-2009-0044, this Order prohibits discharges of ash, bark, sawdust, wood, debris, or any other such wastes to surface water or surface water drainage courses.
6. **Prohibition III.F (No discharge of hazardous or toxic substances to surface waters or groundwater).** Consistent with Order R5-2009, 0044, this Order prohibits discharges of hazardous or toxic substances, including water treatment chemicals, solvents, or petroleum products (i.e., oil, grease, gasoline, and diesel) to surface waters or groundwater.
7. **Prohibition III.G (No direct discharge of domestic wastewater to the under drain system).** Consistent with Order R5-2009, 0044, this Order prohibits direct discharge of domestic wastewater to the under drain system. The under drain system, which consists of the westerly under drain and internal under drain, discharges to the Anderson Cottonwood Irrigation District Canal.
8. **Prohibition III.H (No discharge of waste classified as “hazardous” or “designated”).** Consistent with Order R5-2009-0044, this Order prohibits discharges of waste classified as “hazardous” as defined in section 2521(a) of Title 23, California Code of Regulations (CCR), section 2510, et seq., or “designated”, as defined in section 13173 of the Water Code.
9. **Prohibition III.I (No discharge to the proposed storm water pond until the provisions of CEQA are satisfied).** As described in Section II.E of this Fact Sheet, the Discharger is proposing to construct a new storm water pond to hold the storm water that falls on the fuel pile area. This Order prohibits discharge to the new storm water pond until the provisions of CEQA are satisfied.

## B. Technology-Based Effluent Limitations

### 1. Scope and Authority

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards.

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

- a. Best practicable treatment control technology (BPT) represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.
- b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.
- c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.
- d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires U.S. EPA to develop effluent limitations, guidelines and standards (ELG's) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 C.F.R. section 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELG's are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the Central Valley Water Board must consider specific factors outlined in 40 C.F.R. section 125.3.

### 2. Applicable Technology-Based Effluent Limitations

- a. **Steam Electric Power Generating Point Source Category.** U.S. EPA developed ELG's for the Steam Electric Power Generating Point Source Category at 40 C.F.R. part 423, which are applicable to "*discharges resulting from the operation of a generating unit by an establishment primarily engaged in the generation of electricity for distribution and sale which results primarily from a process utilizing fossil-type fuel (coal, oil, or gas) or nuclear fuel in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium.*" The Facility utilizes biomass fuel for power generation. Therefore, the ELG's at 40 C.F.R. part 423 are not applicable to the Facility.
- b. **Wet Decking.** U.S. EPA developed ELG's for the Wet Storage Subcategory of the Timber Products Point Source Category at 40 C.F.R. part 429, subpart I, which are

applicable to “discharges to waters of the United States and to the introduction of process wastewater pollutants into publicly owned treatment works from the storage of unprocessed wood, i.e., the storage of logs or roundwood before or after removal of bark in self-contained bodies of water (mill ponds or log ponds) or the storage of logs or roundwood on land during which water is sprayed or deposited intentionally on the logs (wet decking).” The Discharger does not spray water on the logs contained on the fuel pile at the Facility. Therefore, the ELG’s at 40 C.F.R. part 429 are not applicable to the Facility.

- c. **Best Management Practices (BMP’s).** In the absence of applicable ELG’s for discharges from the Facility and pursuant to 40 C.F.R. section 122.44(k), this Order requires the Discharger to implement a Storm Water Pollution Prevention Plan (SWPPP), which contains BMP’s to reduce pollutants in storm water discharges from the Facility. The SWPPP will serve as the equivalent of technology-based effluent limitations, in order to carry out the purposes and intent of the CWA.
- d. **Flow.** Consistent with Order R5-2009-0044, this Order contains an effluent limitation for discharges of process water (i.e., non-storm water and under drain water) of 4.5 MGD.

**Summary of Technology-based Effluent Limitations  
 Discharge Point 001**

**Table F-4. Summary of Technology-based Effluent Limitations**

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	--	4.5 <sup>1</sup>	--	--

<sup>1</sup> The discharge of process water (non-storm water and under drain water) shall not exceed 4.5 MGD.

**C. Water Quality-Based Effluent Limitations (WQBEL’s)**

**1. Scope and Authority**

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

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

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

## 2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

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

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

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

- a. **Receiving Water and Beneficial Uses.** The Anderson Cottonwood Irrigation District Canal is an artificial agricultural irrigation drainage system that delivers diverted Sacramento River water to agricultural customers in the Anderson Cottonwood Irrigation District service area. Agricultural deliveries are generally made from May through October. During approximately November to April, diversions from the Sacramento River cease and the Anderson Cottonwood Irrigation District Canal contains only storm water, groundwater inflow, and other flows. During the irrigation season, the Anderson Cottonwood Irrigation District Canal is a terminal conveyance, meaning all water is delivered to irrigation customers, and no water returns to natural waterways. During the winter, it flows only intermittently. During significant winter storm events, however, sections of the canal can overflow to natural waterways such as Schmeider Gulch, Crowley Creek, Gotta Creek, Hooker Creek, Patterson Creek, and numerous other downstream unnamed tributaries, which are all tributaries of Cottonwood Creek, a tributary of the Sacramento River. Refer to section III.C.1 above for a complete description of the receiving water beneficial uses.
- b. **Effluent and Ambient Background Data.** The turbine at the Lassen facility last operated on 16 April 2013 and the connection between the Lassen facility and the retention pond was severed and capped on 31 May 2013. Therefore, the RPA was based on routine effluent data collected subsequent to the shut-down of the Lassen facility (i.e., between June 2013 and October 2014). The only effluent priority pollutant sampling conducted during the term of Order R5-2009-0044 was conducted in April 2013, prior to the shut-down of the Lassen facility. As this was the only effluent priority pollutant data available, this data was used in the RPA. The RPA was also based on receiving water data collected between October 2011 and September 2014.

- c. **Assimilative Capacity/Mixing Zone.** The Basin Plan allows mixing zones provided the Discharger has demonstrated that the mixing zone will not adversely impact beneficial uses. The Basin Plan further requires that in determining the size of a mixing zone, the Central Valley Water Board will consider the applicable procedures in U.S. EPA's Water Quality Standards Handbook and *Technical Support Document for Water Quality Based Toxics Control* (TSD). It is the Central Valley Water Board's discretion whether to allow a mixing zone.

The SIP, in part, states that mixing zones shall not: compromise the integrity of the entire water body; cause acutely toxic conditions to aquatic life passing through the mixing zone; restrict passage of aquatic life; adversely impact biologically sensitive or critical habitats, including but not limited to, habitat of species listed under Federal or State endangered species laws; dominate the receiving water body; or overlap a mixing zone from a different outfall. U.S. EPA's Water Quality Standards Handbook states that states may, at their discretion, allow mixing zones. The Water Quality Standards Handbook recommends that mixing zones be defined on a case-by-case basis after it has been determined that the assimilative capacity of the receiving stream can safely accommodate the discharge. This assessment should take into consideration the physical, chemical, and biological characteristics of the discharge and the receiving stream; the life history of and behavior of organisms in the receiving stream; and the desired uses of the waters. Mixing zones should not be allowed where they may endanger critical areas (e.g., drinking water supplies, recreational areas, breeding grounds and areas with sensitive biota). The TSD states, in part in Section 4.3.1, that mixing zones should not be permitted where they may endanger critical areas.

The Basin Plan, SIP, and TSD state that allowance of a mixing zone is discretionary on the part of the Regional Board. Mixing zones will be limited to the amount of assimilative capacity necessary to comply with discharge limitations.

The Central Valley Water Board finds that based on the available information, the Anderson Cottonwood Irrigation District Canal absent the discharge, is at times an intermittent waterbody. The intermittent nature of the Anderson Cottonwood Irrigation District Canal means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. Although the discharge at times maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flows within the Anderson Cottonwood Irrigation District Canal help support cold water aquatic life. Both conditions may exist within a short time span, where the Anderson Cottonwood Irrigation District Canal would be dry without the discharge and periods when sufficient background flows provide hydraulic continuity with the Cottonwood Creek. Dry conditions occur primarily in the winter months, but dry conditions may also occur throughout the year, particularly in the late fall and early spring. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water quality goals and aquatic life. Significant dilution may occur during and immediately following high rainfall events. To the extent dilution and assimilative capacity is available in the receiving water to accommodate constituents in the effluent which exceed water quality criteria, this Order contains a reopener to revise effluent limitations based on concentrations or conditions determined to be in the receiving water. However, effluent limitations contained in this Order do not account for the receiving waters having dilution or assimilative capacity. The Discharger may submit receiving water characterization to demonstrate the flow regime and pollutant assimilative capacity and request that the Central Valley Water Board reopen the permit to consider this new information.

- d. **Conversion Factors.** The CTR contains aquatic life criteria for arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, and zinc which are presented in dissolved concentrations. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default U.S. EPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.
- e. **Hardness-Dependent CTR Metals Criteria.** The *California Toxics Rule* and the *National Toxics Rule* contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness, the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc.

This Order has established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP<sup>1</sup> and the CTR<sup>2</sup>. The SIP and the CTR require the use of “receiving water” or “actual ambient” hardness, respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 C.F.R. § 131.38(c)(4)) The CTR requires that the hardness values used shall be consistent with the design discharge conditions for design flows and mixing zones.<sup>3</sup> Where design flows for aquatic life criteria include the lowest one-day flow with an average reoccurrence frequency of once in ten years (1Q10) and the lowest average seven consecutive day flow with an average reoccurrence frequency of once in ten years (7Q10).<sup>4</sup> The CTR also requires that when mixing zones are allowed the CTR criteria apply at the edge of the mixing zone, otherwise the criteria apply throughout the water body including at the point of discharge.<sup>5</sup> The CTR does not define whether the term “ambient,” as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions.

The State Water Board provided direction regarding the selection of hardness in two precedential water quality orders; WQO 2008-0008 for the City of Davis Wastewater Treatment Plant and WQO 2004-0013 for the Yuba City Wastewater Treatment Plant. The State Water Board recognized that the SIP and the CTR do not discuss the manner in which hardness is to be ascertained, thus regional water boards have considerable discretion in determining ambient hardness. (Davis Order, p.10). The State Water Board explained that it is necessary that, “*The [hardness] value selected should provide protection for all times of discharge under varying hardness conditions.*” (Yuba City Order, p. 8). The Davis Order also provides that, “*Regardless of the hardness used, the resulting limits must always be protective of water quality criteria under all flow conditions.*” (Davis Order, p. 11).

The equation describing the total recoverable regulatory criterion, as established in the CTR<sup>6</sup>, is as follows:

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

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

<sup>2</sup> The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO<sub>3</sub>), or less, the actual ambient hardness of the surface water must be used.

<sup>3</sup> 40 C.F.R. 131.38 § (c)(4)(ii)

<sup>4</sup> 40 C.F.R. 131.38 § (c)(2)(iii) Table 4

<sup>5</sup> 40 C.F.R. 131.38 § (c)(2)(i)

<sup>6</sup> 40 C.F.R. § 131.38(b)(2).

Where:

H = ambient hardness (as CaCO<sub>3</sub>)<sup>7</sup>

WER = water-effect ratio

m, b = metal- and criterion-specific constants

The Discharger did not conduct receiving water hardness monitoring during the term of Order R5-2009-0044. However, receiving water hardness was measured as part of the 17 April 2013 chronic toxicity testing. Based on hardness data collected during the chronic toxicity testing, the upstream receiving water hardness was 46 mg/L. During portions of the year, however, the Anderson Cottonwood Irrigation District Canal is effluent dominated, so the downstream ambient hardness that is consistent with the design low flow conditions is equivalent to the effluent hardness, because the effluent is, in effect, the ambient surface water under these regularly occurring conditions. The effluent hardness was 77 mg/L in a single sample collected 17 April 2013.

For calculating the CTR criteria the downstream ambient hardness has been used. The SIP, CTR, and State Water Board do not require use of the minimum observed ambient hardness in the CTR equations. The hardness used must be consistent with design conditions and protective of water quality criteria under all flow conditions. The minimum effluent hardness of 77 mg/L represents the downstream ambient hardness under the design condition and was considered for use in the CTR equations.

A downstream ambient hardness of 77 mg/L results in CTR criteria that are protective of aquatic life under all flow conditions for copper, zinc, chromium III, nickel, and cadmium (chronic). However, for lead, silver, and cadmium (acute), using this hardness to calculate the CTR criteria is protective during the effluent dominated condition, but lower criteria are necessary to be fully protective of aquatic life under higher flow conditions in the receiving water.

The Facility discharges both hardness and metals, which must be considered in the downstream ambient receiving water to ensure the criteria are protective under all flow conditions. The tables below examine how the downstream ambient conditions change with varying mixtures of effluent and upstream receiving water. The calculations determine whether or not toxicity could result from one or more metals using the selected design ambient hardness to calculate the CTR criteria.

A simple mass balance (Equation 2) is used to model the ambient concentrations of hardness and metals in the receiving water downstream of the discharge for all possible mixtures of effluent and upstream receiving water under all flow conditions.

$$C_{\text{downstream}} = C_{\text{upstream}} \times (1-\text{MIX}) + C_{\text{effluent}} \times (\text{MIX}) \quad (\text{Equation 2})^8$$

Where:

C<sub>downstream</sub> = Downstream receiving water concentration

C<sub>upstream</sub> = Upstream receiving water concentration

C<sub>effluent</sub> = Effluent concentration

MIX = Fraction of effluent in downstream ambient receiving water

For each of several downstream ambient mixtures of upstream receiving water and effluent, the potential for toxicity is examined. The hardness of the mixture is calculated,

<sup>7</sup> For this discussion all hardness values are measured as CaCO<sub>3</sub>.

<sup>8</sup> U.S. EPA NPDES Permit Writers' Manual, September 2010 (EPA-833-K-10-001).

and the resultant water quality criterion is calculated from the CTR equation. The metals concentration is also calculated for the mixture of upstream receiving water and effluent. If the metals concentration complies with the CTR criterion for that mixture, the ambient mixture is not toxic, and “Yes” is indicated in the far right column. If the metals concentration exceeds the CTR criterion for that mixture, the ambient concentration is toxic, and “No” is indicated in the far right column. The results of these evaluations are summarized in Table F-14.

For this evaluation the following conservative assumptions have been made:

- Upstream receiving water at the lowest observed upstream receiving water hardness (i.e., 46 mg/L).
- No assimilative capacity for each metal in the upstream receiving water (i.e., metals concentration equal to CTR criteria calculated using a hardness of 46 mg/L).
- Effluent hardness at the lowest observed effluent hardness of 77 mg/L.

Table F-5, below, is an example for lead where a design ambient hardness of 77 mg/L (i.e., downstream receiving water hardness at design low flow conditions) was used to calculate the CTR criteria. In this example, the mixed downstream ambient lead concentrations exceed the mixed CTR criteria at some mixtures. This example demonstrates that using a design ambient hardness of 77 mg/L to calculate the CTR criteria for lead is not fully protective under the reasonable worst-case conditions described above. The CTR criteria for silver and cadmium (acute) act in the same manner as lead. Tables are not provided in this discussion for these metals, but the results are similarly non-compliant with the CTR criteria. Based on the conservative assumptions discussed above, an iterative method was used to determine the applicable design ambient hardness that results in fully protective criteria for lead, silver, and cadmium (acute).

**Table F-5. Lead Evaluation (Design Ambient Hardness = 77 mg/L)**

Assumed Upstream Receiving Water Lead Concentration		1.2 µg/L <sup>1</sup>			
Lead Chronic Criterion <sup>2</sup>		2.3 µg/L			
Mix <sup>6</sup>		Mixed Downstream Ambient Concentration			Complies with CTR Criteria?
		Hardness <sup>3</sup> (mg/L)	CTR Criteria <sup>4</sup> (µg/L)	Lead <sup>5</sup> (µg/L)	
High Flow  Low Flow	1%	46	1.2	1.2	No
	5%	48	1.2	1.2	No
	15%	51	1.3	1.3	No
	25%	54	1.4	1.5	No
	50%	62	1.7	1.7	No
	75%	69	2.0	2.0	No
	100%	77	2.3	2.3	Yes

The following tables (F-6 through F-13) demonstrate that the selected design ambient hardness used to calculate the CTR criteria result in protective criteria for all flow conditions (i.e., the mixed downstream ambient metals concentrations do not exceed the CTR criteria). Table F-14 summarizes the design ambient hardness for each metal.

**Table F-6. Lead Evaluation (Design Ambient Hardness = 75 mg/L)**

<b>Assumed Upstream Receiving Water Lead Concentration</b>					<b>1.2 µg/L<sup>1</sup></b>
<b>Lead Chronic Criterion<sup>2</sup></b>					<b>2.2 µg/L</b>
<b>Mix<sup>6</sup></b>		<b>Mixed Downstream Ambient Concentration</b>			<b>Complies with CTR Criteria?</b>
		<b>Hardness<sup>3</sup> (mg/L)</b>	<b>CTR Criteria<sup>4</sup> (µg/L)</b>	<b>Lead<sup>5</sup> (µg/L)</b>	
High Flow ↓ Low Flow	1%	46	1.2	1.2	Yes
	5%	48	1.2	1.2	Yes
	15%	51	1.3	1.3	Yes
	25%	54	1.4	1.4	Yes
	50%	62	1.7	1.7	Yes
	75%	69	2.0	2.0	Yes
	100%	77	2.3	2.2	Yes

**Table F-7. Copper Evaluation (Design Ambient Hardness = 77 mg/L)**

<b>Assumed Upstream Receiving Water Copper Concentration</b>					<b>4.8 µg/L<sup>1</sup></b>
<b>Copper Chronic Criterion<sup>2</sup></b>					<b>7.5 µg/L</b>
<b>Mix<sup>6</sup></b>		<b>Mixed Downstream Ambient Concentration</b>			<b>Complies with CTR Criteria?</b>
		<b>Hardness<sup>3</sup> (mg/L)</b>	<b>CTR Criteria<sup>4</sup> (µg/L)</b>	<b>Copper<sup>5</sup> (µg/L)</b>	
High Flow ↓ Low Flow	1%	46	4.8	4.8	Yes
	5%	48	4.9	4.9	Yes
	15%	51	5.2	5.2	Yes
	25%	54	5.5	5.5	Yes
	50%	62	6.2	6.1	Yes
	75%	69	6.8	6.8	Yes
	100%	77	7.5	7.5	Yes

**Table F-8. Chromium III Evaluation (Design Ambient Hardness = 77 mg/L)**

<b>Assumed Upstream Receiving Water Chromium III Concentration</b>					<b>110 µg/L<sup>1</sup></b>
<b>Chromium III Chronic Criterion<sup>2</sup></b>					<b>167 µg/L</b>
<b>Mix<sup>6</sup></b>		<b>Mixed Downstream Ambient Concentration</b>			<b>Complies with CTR Criteria?</b>
		<b>Hardness<sup>3</sup> (mg/L)</b>	<b>CTR Criteria<sup>4</sup> (µg/L)</b>	<b>Chromium III<sup>5</sup> (µg/L)</b>	
High Flow ↓ Low Flow	1%	46	110	110	Yes
	5%	48	113	112	Yes
	15%	51	119	118	Yes
	25%	54	124	124	Yes
	50%	62	139	138	Yes
	75%	69	153	153	Yes
	100%	77	167	167	Yes

**Table F-9. Cadmium (Chronic) Evaluation (Design Ambient Hardness = 77 mg/L)**

Assumed Upstream Receiving Water Cadmium Concentration					1.3 µg/L <sup>1</sup>
Cadmium Chronic Criterion <sup>2</sup>					2.0 µg/L
Mix <sup>6</sup>		Mixed Downstream Ambient Concentration			Complies with CTR Criteria?
		Hardness <sup>3</sup> (mg/L)	CTR Criteria <sup>4</sup> (µg/L)	Cadmium <sup>5</sup> (µg/L)	
High Flow ↓ Low Flow	1%	46	1.3	1.3	Yes
	5%	48	1.4	1.4	Yes
	15%	51	1.4	1.4	Yes
	25%	54	1.5	1.5	Yes
	50%	62	1.7	1.7	Yes
	75%	69	1.8	1.8	Yes
	100%	77	2.0	2.0	Yes

**Table F-10. Cadmium (Acute) Evaluation (Design Ambient Hardness = 76 mg/L)**

Assumed Upstream Receiving Water Cadmium Concentration					1.9 µg/L <sup>1</sup>
Cadmium Acute Criterion <sup>2</sup>					3.3 µg/L
Mix <sup>6</sup>		Mixed Downstream Ambient Concentration			Complies with CTR Criteria?
		Hardness <sup>3</sup> (mg/L)	CTR Criteria <sup>4</sup> (µg/L)	Cadmium <sup>5</sup> (µg/L)	
High Flow ↓ Low Flow	1%	46	1.9	1.9	Yes
	5%	48	2.0	2.0	Yes
	15%	51	2.1	2.1	Yes
	25%	54	2.2	2.2	Yes
	50%	62	2.6	2.6	Yes
	75%	69	3.0	3.0	Yes
	100%	77	3.4	3.3	Yes

**Table F-11. Nickel Evaluation (Design Ambient Hardness = 77 mg/L)**

Assumed Upstream Receiving Water Nickel Concentration					27 µg/L <sup>1</sup>
Nickel Chronic Criterion <sup>2</sup>					42 µg/L
Mix <sup>6</sup>		Mixed Downstream Ambient Concentration			Complies with CTR Criteria?
		Hardness <sup>3</sup> (mg/L)	CTR Criteria <sup>4</sup> (µg/L)	Nickel <sup>5</sup> (µg/L)	
High Flow ↓ Low Flow	1%	46	27	27	Yes
	5%	48	28	28	Yes
	15%	51	29	29	Yes
	25%	54	31	31	Yes
	50%	62	35	34	Yes
	75%	69	38	38	Yes
	100%	77	42	42	Yes

**Table F-12. Silver (Acute) Evaluation (Design Ambient Hardness = 72 mg/L)**

Assumed Upstream Receiving Water Silver Concentration		1.1 µg/L <sup>1</sup>			
Silver Acute Criterion <sup>2</sup>		2.3 µg/L			
Mix <sup>6</sup>		Mixed Downstream Ambient Concentration			Complies with CTR Criteria?
		Hardness <sup>3</sup> (mg/L)	CTR Criteria <sup>4</sup> (µg/L)	Silver <sup>5</sup> (µg/L)	
High Flow ↓ Low Flow	1%	46	1.1	1.1	Yes
	5%	48	1.1	1.1	Yes
	15%	51	1.3	1.3	Yes
	25%	54	1.4	1.4	Yes
	50%	62	1.8	1.7	Yes
	75%	69	2.2	2.0	Yes
	100%	77	2.6	2.3	Yes

**Table F-13. Zinc Evaluation (Design Ambient Hardness = 77 mg/L)**

Assumed Upstream Receiving Water Zinc Concentration		62 µg/L <sup>1</sup>			
Zinc Chronic Criterion <sup>2</sup>		96 µg/L			
Mix <sup>6</sup>		Mixed Downstream Ambient Concentration			Complies with CTR Criteria?
		Hardness <sup>3</sup> (mg/L)	CTR Criteria <sup>4</sup> (µg/L)	Zinc <sup>5</sup> (µg/L)	
High Flow ↓ Low Flow	1%	46	62	62	Yes
	5%	48	64	64	Yes
	15%	51	67	67	Yes
	25%	54	71	71	Yes
	50%	62	79	79	Yes
	75%	69	88	88	Yes
	100%	77	96	96	Yes

Footnotes for CTR Hardness-dependent Metals Tables (F-5 through F-13)

- <sup>1</sup> Highest assumed upstream receiving water metals concentration calculated using CTR equation (Equation 1) for chronic/ acute criterion at a hardness of 46 mg/L.
- <sup>2</sup> CTR Criteria calculated using CTR equation (Equation 1) for chronic/acute criterion at the design ambient hardness for the particular metal (see Table F-14).
- <sup>3</sup> Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable mixture using Equation 2.
- <sup>4</sup> Mixed downstream ambient criteria are the chronic/acute criteria calculated using the CTR equation (Equation 1) at the mixed hardness.
- <sup>5</sup> Mixed downstream ambient metals concentration is the mixture of the receiving water and effluent metals concentrations at the applicable mixture using Equation 2.
- <sup>6</sup> The mixture percentage represents the fraction of effluent in the downstream ambient receiving water. The mixture ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

The applicable design ambient hardness and CTR criteria for the hardness-dependent metals for which toxicity in ambient waters does not occur are as follows in Table F-14.

**Table F-14. Summary of Design Ambient Hardness and CTR Criteria for Hardness-dependent Metals**

CTR Metals	Design Ambient Hardness (mg/L)	CTR Criteria (µg/L, total recoverable) <sup>1</sup>	
		acute	chronic
Copper	77	11	7.5
Chromium III	77	1,400	170
Cadmium	77 (chronic) 76 (acute)	3.3	2.0
Lead	75	57	2.2
Nickel	77	380	42
Silver	72	2.3	--
Zinc	77	96	96

<sup>1</sup> Metal criteria rounded to two significant figures in accordance with the CTR.

**3. Determining the Need for WQBEL’s**

- a. **Constituents with No Reasonable Potential.** WQBEL’s are not included in this Order for constituents that do not demonstrate reasonable potential (i.e., constituents were not detected in the effluent or receiving water); however, monitoring for those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding an appropriate effluent limitation.

Most constituents with no reasonable potential are not discussed in this Order. However, the following constituents were found to have no reasonable potential after assessment of the data:

- i. **Aluminum**

Aluminum is the third most abundant element in the earth’s crust and is ubiquitous in both soils and aquatic sediments. When mobilized in surface waters, aluminum has been shown to be toxic to various fish species. However, the potential for aluminum toxicity in surface waters is directly related to the chemical form of aluminum present, and the chemical form is highly dependent on water quality characteristics that ultimately determine the mechanism of aluminum toxicity. Surface water characteristics, including pH, temperature, colloidal material, fluoride and sulfate concentrations, and total organic carbon, all influence aluminum speciation and its subsequent bioavailability to aquatic life. Calcium [hardness] concentrations in surface water may also reduce aluminum toxicity by competing with monomeric aluminum (Al<sup>3+</sup>) binding to negatively charged fish gills.

- (a) **WQO.** The State Water Board, Division of Drinking Water (DDW) has established Secondary Maximum Contaminant Levels (MCL’s) to assist public drinking water systems in managing their drinking water for aesthetic conditions such as taste, color, and odor. The Secondary MCL for aluminum is 200 µg/L for protection of the MUN beneficial use. Title 22 requires compliance with Secondary MCLs on an annual average basis.

The Code of Federal Regulations promulgated criteria for priority toxic pollutants for California’s surface waters as part of section 131.38 Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California (California Toxics Rule or CTR), including metals criteria. However, aluminum criteria were

not promulgated as part of the CTR. Absent numeric aquatic life criteria for aluminum, WQBEL's in the Central Valley Region's NPDES permits are based on the Basin Plans' narrative toxicity objective. The Basin Plans' *Policy for Application of Water Quality Objectives* requires the Central Valley Water Board to consider, "on a case-by-case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations. In considering such criteria, the Board evaluates whether the specific numerical criteria which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective." Relevant information includes, but is not limited to (1) U.S. EPA Ambient Water Quality Criteria (NAWQC) and subsequent Correction, (2) site-specific conditions of the Anderson Cottonwood Irrigation District Canal, the receiving water, and (3) site-specific aluminum studies conducted by dischargers within the Central Valley Region. (Basin Plan, p. IV-17.00; see also, 40 C.F.R. 122.44(d)(vi).)

**U.S. EPA NAWQC.** U.S. EPA recommended the NAWQ aluminum acute criterion at 750 µg/L based on test waters with a pH of 6.5 to 9.0. U.S. EPA also recommended the NAWQC aluminum chronic criterion at 87 µg/L based upon the following two toxicity tests. All test waters contained hardness at 12 mg/L as CaCO<sub>3</sub>.

- (1) Acute toxicity tests at various aluminum doses were conducted in various acidic waters (pH 6.0 – 6.5) on 159- and 160-day old striped bass. The 159-day old striped bass showed no mortality in waters with pH at 6.5 and aluminum doses at 390 µg/L, and the 160-day old striped bass showed 58% mortality at a dose of 174.4 µg/L in same pH waters. However, the 160-day old striped bass showed 98% mortality at an aluminum dose of 87.2 µg/L in waters with pH at 6.0, which is U.S. EPA's basis for the 87 µg/L chronic criterion. The varied results draw into question this study and the applicability of the NAWQ chronic criterion of 87 µg/L.
- (2) Chronic toxicity effects on 60-day old brook trout were evaluated in circumneutral pH waters (6.5-6.9 pH) in five cells at various aluminum doses (4, 57, 88, 169, and 350 µg/L). Chronic evaluation started upon hatching of eyed eggs of brook trout, and their weight and length were measured after 45 days and 60 days. The 60-day old brook trout showed 24% weight loss at 169 µg/L of aluminum and 4% weight loss at 88 µg/L of aluminum, which is the basis for U.S. EPA's chronic criterion. Though this test study shows chronic toxic effects of 4% reduction in weight after exposure for 60-days, the chronic criterion is based on 4-day exposure; so again, the applicability of the NAWQ chronic criterion of 87 µg/L is questionable.

**Site-specific Conditions.** U.S. EPA advises that a water effects ratio may be more appropriate to better reflect the actual toxicity of aluminum to aquatic organisms when the pH and hardness conditions of the receiving water are not similar to that of the test conditions.<sup>9</sup> Effluent and Anderson Cottonwood

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<sup>9</sup> "The value of 87 µg/L is based on a toxicity test with striped bass in water with pH = 6.5-6.6 and hardness < 10 mg/L. Data in [a 1994 Study] indicate that aluminum is substantially less toxic at higher pH and hardness, but the effects of pH and hardness are not well quantified at this time." U.S. EPA 1999 NAWQC Correction, Footnote L.

Irrigation District Canal monitoring data indicate that the pH and hardness values are not similar to the low pH and hardness conditions under which the chronic criterion for aluminum was developed, as shown in the table below, and, therefore, the Central Valley Water Board does not expect aluminum to be as toxic in the Anderson Cottonwood Irrigation District Canal as in the previously described toxicity tests. The pH of the Anderson Cottonwood Irrigation District Canal, the receiving water, ranged from 6.07 to 8.46 with a median of 7.41 based on 32 monitoring results obtained between October 2011 and September 2014. These water conditions typically are circumneutral pH where aluminum is predominately in the form of Al(OH)<sub>3</sub> and non-toxic to aquatic life. The hardness of the Anderson Cottonwood Irrigation District Canal was 46 µg/L on 17 April 2013, which is above the conditions, and thus less toxic, than the tests used to develop the chronic criterion.

Parameter	Units	Test Conditions for Applicability of Chronic Criterion	Effluent	Receiving Water
pH	standard units	6.0 – 6.5	6.54 – 8.42	6.1 – 8.5
Hardness, Total (as CaCO <sub>3</sub> )	mg/L	12	77	46
Aluminum, Total Recoverable	µg/L	87.2 - 390	37.8 – 67.8	31.9 – 184

**Local Environmental Conditions and Studies.** Twenty-one site-specific aluminum toxicity tests have been conducted within the Central Valley Region. The pH and hardness of the Anderson Cottonwood Irrigation District Canal are similar, as shown in the table below, and thus the results of these site-specific aluminum toxicity tests are relevant and appropriate for the Anderson Cottonwood Irrigation District Canal. As shown in the following table, all EC<sub>50</sub><sup>10</sup> toxicity study result values are at concentrations of aluminum above 5,000 µg/L. Thus, the toxic effects of aluminum in these surface waters and in the Anderson Cottonwood Irrigation District Canal, is less toxic (or less reactive) to aquatic species than demonstrated in the toxicity tests that U.S. EPA used for the basis of establishing the chronic criterion of 87 µg/L. This new information, and review of the toxicity tests U.S. EPA used to establish the chronic criterion, indicates that 87 µg/L is overly stringent and not applicable to the Anderson Cottonwood Irrigation District Canal.

**Central Valley Region Site-Specific Aluminum Toxicity Data**

Discharger	Test Waters	Hardness Value	Total Aluminum EC <sub>50</sub> Value	pH	WER
<b><i>Oncorhynchus mykiss</i> (rainbow trout)</b>					
Manteca	Surface Water/Effluent	124	>8600	9.14	N/C
Auburn	Surface Water	16	>16500	7.44	N/C
Modesto	Surface Water/Effluent	120/156	>34250	8.96	>229
Yuba City	Surface Water/Effluent	114/164 <sup>1</sup>	>8000	7.60/7.46	>53.5

<sup>10</sup> The effect concentration is a point estimate of the toxicant concentration that would cause an observable adverse effect (e.g., death, immobilization, or serious incapacitation) in a given percent of the test organisms, calculated from a continuous model (e.g., Probit Model). EC<sub>50</sub> is a point estimate of the toxicant concentration that would cause an observable adverse effect in 50 percent of the test organisms. The EC<sub>50</sub> is used in toxicity testing to determine the appropriate chronic criterion.

Discharger	Test Waters	Hardness Value	Total Aluminum EC <sub>50</sub> Value	pH	WER
<b><i>Ceriodaphnia dubia</i> (water flea)</b>					
Auburn	Effluent	99	>5270	7.44	>19.3
	Surface Water	16	>5160	7.44	>12.4
Manteca	Surface Water/Effluent	124	>8800	9.14	N/C
	Effluent	117	>8700	7.21	>27.8
	Surface Water	57	7823	7.58	25.0
	Effluent	139	>9500	7.97	>21.2
	Surface Water	104	>11000	8.28	>24.5
	Effluent	128	>9700	7.78	>25.0
	Surface Water	85	>9450	7.85	>25.7
	Effluent	106	>11900	7.66	>15.3
	Surface Water	146	>10650	7.81	>13.7
Modesto	Surface Water/Effluent	120/156	31604	8.96	211
Yuba City	Surface Water/Effluent	114/164 <sup>1</sup>	>8000	7.60/7.46	>53.5
Placer County (SMD 1)	Effluent	150	>5000	7.4 – 8.7	>13.7
<b><i>Daphnia magna</i> (water flea)</b>					
Manteca	Surface Water/Effluent	124	>8350	9.14	N/C
Modesto	Surface Water/Effluent	120/156	>11900	8.96	>79.6
Yuba City	Surface Water/Effluent	114/164 <sup>1</sup>	>8000	7.60/7.46	>53.5

The Discharger has not conducted a toxicity test for aluminum; however, the City of Auburn conducted two toxicity tests in Auburn Ravine, shown in the previous table. As shown, the test water quality characteristics of Auburn Ravine are critically lower than the Anderson Cottonwood Irrigation District, with the pH at 7.4 and hardness at 16 mg/L as CaCO<sub>3</sub> in comparison to the mean pH at 7.4 and the minimum hardness at 46 mg/L as CaCO<sub>3</sub>, respectively. Thus, results of site-specific studies conducted in Auburn Ravine would represent conservative assumptions for the Anderson Cottonwood Irrigation District Canal since the canal's water quality characteristics (pH and hardness) are higher, and therefore, aluminum is less toxic to aquatic life in the Anderson Cottonwood Irrigation District Canal. Thus, based on these two similar primary water quality characteristics (pH and hardness) that drive aluminum speciation, the aluminum toxicity within Auburn Ravine is expected to be similar in the Anderson Cottonwood Irrigation District Canal. Therefore, the Auburn Ravine aluminum toxicity test study is relevant and appropriate in this case for use in determining the specific numerical criteria to be used in determining compliance with the Basin Plan's narrative toxicity objective. The Auburn Ravine aluminum toxicity study resulted in a site-specific aluminum objective at 1,079 µg/L. Thus, these results support the conclusion that the 87 µg/L chronic criterion is overly stringent for the Anderson Cottonwood Irrigation District Canal.

**Applicable WQOs.** The Central Valley Water Board generally implements the Secondary MCL of 200 µg/L as an annual average for the protection of MUN and implements the Basin Plan's narrative toxicity objective for the protection of aquatic life using an acute (1-hour) criterion and chronic (4-day) criterion of 750 µg/L based on U.S. EPA's NAWQC and the discussion above.

- (b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Aluminum is not a priority pollutant. Therefore, the Central

Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent. The most stringent objective is the Secondary MCL, which is derived from human welfare considerations (e.g., taste, odor, laundry staining), not for toxicity. Secondary MCL's are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. To be consistent with how compliance with the standards is determined, the RPA was conducted based on the calendar year annual average effluent aluminum concentrations.

The maximum observed effluent annual average aluminum concentration was 49 µg/L based on six samples collected between June 2013 and October 2014. Therefore, the Central Valley Water Board finds the discharge does not have reasonable potential to cause or contribute to an exceedance in the receiving water and the Facility is adequately controlling the discharge of aluminum.

ii. **Iron**

- (a) **WQO.** The Secondary MCL – Consumer Acceptance Limit for iron is 300 µg/L, which is used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic supply.
- (b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Iron is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent. The most stringent objective is the Secondary MCL, which is derived from human welfare considerations (e.g., taste, odor, laundry staining), not for toxicity. Secondary MCL's are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. To be consistent with how compliance with the standards is determined, the RPA was conducted based on the calendar year annual average effluent iron concentrations.

The maximum annual average effluent concentration for iron was 94 µg/L based on six samples collected between June 2013 and October 2014. Therefore, the Central Valley Water Board finds the discharge does not have reasonable potential to cause or contribute to an exceedance in the receiving water and the Facility is adequately controlling the discharge of iron.

iii. **Lead**

- (a) **WQO.** The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for lead. These criteria for lead are presented in dissolved concentrations, as 1-hour acute criteria and 4-day chronic criteria. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default U.S. EPA conversion factors were used for calculating the criteria. As described in section IV.C.2.e of this Fact Sheet, the applicable acute (1-hour average) and chronic (4-day average) criteria for lead are 57 µg/L and 2.2 µg/L, respectively, as total recoverable.

- (b) **RPA Results.** The maximum effluent concentration (MEC) for lead was an estimated concentration of 0.10 µg/L (detected but not quantified) based on two samples collected between June 2013 and October 2014. Lead was not detected in the remaining effluent sample. The maximum observed upstream receiving water lead concentration was 2.8 µg/L.

SIP Section 2.4.2 states that the Minimum Level (ML) is the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences.

- (1) Required ML's are listed in Appendix 4 of the SIP. Where more than one ML is listed in Appendix 4, the discharger may select any one of the cited analytical methods for compliance determination. The selected ML used for compliance determination is referred to as the Reporting Level (RL).
- (2) An RL can be lower than the ML in Appendix 4 only when the discharger agrees to use a RL that is lower than the ML listed in Appendix 4. The Central Valley Water Board and the Discharger have no agreement to use a RL lower than the listed ML.
- (3) SIP Section 1.2 requires that the Regional Board use all available, valid, relevant, representative data and information, as determined by the Regional Board, to implement the SIP. SIP Section 1.2 further states that the Regional Board has the discretion to consider if any data are inappropriate or insufficient for use in implementing the SIP.
- (4) Data reported below the ML indicates the data may not be valid due to possible matrix interferences during the analytical procedure.
- (5) Further, SIP Section 2.4.5 (Compliance Determination) supports the insufficiency of data reported below the ML or RL. In part it states, *"Dischargers shall be deemed out of compliance with an effluent limitation, for reporting and administrative enforcement purposes, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the RL."* Thus, if submitted data is below the RL, that data cannot be used to determine compliance with effluent limitations.
- (6) Data reported below the ML is not considered valid data for use in determining reasonable potential. Therefore, in accordance with Section 1.2 of the SIP, the Central Valley Water Board has determined that data reported below the ML is inappropriate and insufficient to be used to determine reasonable potential.
- (7) In implementing its discretion, the Central Valley Water Board is not finding that reasonable potential does not exist; rather the Central Valley Water Board cannot make such a determination given the invalid data. Therefore, the Central Valley Water Board will require additional monitoring for such constituents until such time a determination can be made in accordance with the SIP policy.

SIP Appendix 4 cites several ML's for lead. The lowest applicable ML cited for lead is 0.5 µg/L. The Discharger used an analytical method with an RL (0.5 µg/L) equivalent to the ML required by the SIP. The effluent results were all estimated values (i.e., DNQ) or non-detects. Therefore, the submitted effluent lead data is inappropriate and insufficient to determine reasonable potential under the SIP.

The upstream receiving water concentration of 2.8 µg/L does exceed the CTR chronic criterion, however, Section 1.3, Step 6 of the SIP states that if the receiving water concentration exceeds the criteria and the pollutant is detected in the effluent, an effluent limitation is required. However; as discussed in detail above, insufficient effluent data are available at this time to justify establishing an effluent limitation for lead.

Section 1.3, Step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Instead of limitations, additional monitoring has been established for lead in both the effluent and the receiving water during the third and fourth years of the permit term as part of the Effluent and Receiving Water Characterization Study. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.

iv. **Manganese**

- (a) **WQO.** The Secondary MCL – Consumer Acceptance Limit for manganese is 50 µg/L, which is used to implement the Basin Plan’s chemical constituent objective for the protection of municipal and domestic supply.
- (b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Manganese is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent. The most stringent objective is the Secondary MCL, which is derived from human welfare considerations (e.g., taste, odor, laundry staining), not for toxicity. Secondary MCL’s are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. To be consistent with how compliance with the standards is determined, the RPA was conducted based on the calendar year annual average effluent manganese concentrations.

The maximum annual average effluent concentration for manganese was 41 µg/L based on six samples collected between June 2013 and October 2014.

Therefore, the Central Valley Water Board finds the discharge does not have reasonable potential to cause or contribute to an exceedance in the receiving water and the Facility is adequately controlling the discharge of manganese.

- b. **Constituents with Reasonable Potential.** The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for chlorine residual, pH, salinity, and settleable solids. WQBEL’s for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. **Chlorine Residual**

- (a) **WQO.** U.S. EPA developed NAWQC for protection of freshwater aquatic life for chlorine residual. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for chlorine residual are 0.011 mg/L and 0.019 mg/L,

respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.

- (b) **RPA Results.** The concentrations of chlorine used are high enough to harm aquatic life and violate the Basin Plan narrative toxicity objective if discharged to the receiving water. Reasonable potential therefore does exist and effluent limits are required.

Federal regulations at 40 C.F.R. §122.44(d)(1)(i) requires that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. Chlorine is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters).*" U.S. EPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*"

The Discharger adds sodium hypochlorite to the cooling towers and fire and cooling water ponds to reduce algal growth and maintain a residual of 0.2–0.5 ppm. The wastewater is dechlorinated using sodium bisulfite and passes through the retention pond before discharging to the canal. Chlorine is extremely toxic to aquatic organisms. Although the Discharger uses sodium bisulfite to dechlorinate the effluent prior to discharge to the Anderson Cottonwood Irrigation District Canal, the existing chlorine use and the potential for chlorine to be discharged provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

- (c) **WQBEL's.** Consistent with Order R5-2009-0044, this Order includes an average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) of 0.01 mg/L and 0.02 mg/L, respectively, based on U.S. EPA's NAWQC, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life.
- (d) **Plant Performance and Attainability.** The wastewater is dechlorinated using sodium bisulfite and passes through the retention pond before discharging to the

canal. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

## ii. pH

- (a) **WQO.** The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the “...pH shall not be depressed below 6.5 nor raised above 8.5.”
- (b) **RPA Results.** Between May 2013 and November 2014, the effluent pH ranged from 6.54 to 8.5, the upstream receiving water pH ranged from 6.92 to 8.46, and the downstream receiving water pH ranged from 6.99 to 8.43. The data indicate the effluent did not exceed the Basin Plan objectives, and did not cause or contribute to any identifiable exceedances of pH in the receiving water. Nevertheless, the discharge of storm water and wastewaters from the electrical generation process has reasonable potential to cause or contribute to an exceedance of the Basin Plan water quality objectives.
- (c) **WQBEL’s.** Consistent with Order R5-2009-0044, this Order includes an instantaneous minimum effluent limitation of 6.5 and an instantaneous maximum effluent limitation of 9.0. As discussed above, the data indicate the effluent did not exceed the Basin Plan objectives, and did not cause or contribute to any identifiable exceedances of pH in the receiving water and thus compliance with these effluent limitations shall ensure that the effluent does not cause or contribute to an exceedance in the receiving water.
- (d) **Plant Performance and Attainability.** The effluent pH ranged from 6.54 to 8.5, which is within the range of the WQBEL’s. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

## iii. Salinity

- (a) **WQO.** The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The U.S. EPA Ambient Water Quality Criteria for Chloride recommends acute and chronic criteria for the protection of aquatic life. There are no U.S. EPA water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, and sulfate. Additionally, there are no U.S. EPA numeric water quality criteria for the protection of agricultural, livestock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan Amendment that will establish a salt and nitrate Management Plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. All studies conducted through this Order to establish an agricultural limit to implement the narrative objective will be reviewed by and consistent with the efforts currently underway by CV-SALTS.

**Table F-15. Salinity Water Quality Criteria/Objectives**

Parameter	Agricultural WQ Objective <sup>1</sup>	Secondary MCL <sup>2</sup>	U.S. EPA NAWQC	Effluent	
				Average <sup>3</sup>	Maximum
EC (µmhos/cm)	Varies <sup>1</sup>	900, 1600, 2200	N/A	574	803
TDS (mg/L)	Varies	500, 1000, 1500	N/A	390	561
Sulfate (mg/L)	Varies	250, 500, 600	N/A	15	86.7
Chloride (mg/L)	Varies	250, 500, 600	860 1-hr 230 4-day	34	71.8

<sup>1</sup> Narrative chemical constituent objective of the Basin Plan. Procedures for establishing the applicable numeric limitation to implement the narrative objective can be found in the Policy for Application of Water Quality, Chapter IV, Section 8 of the Basin Plan. However, the Basin Plan does not require improvement over naturally occurring background concentrations. In cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective, the natural background concentration will be considered to comply with the objective.

<sup>2</sup> The Secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

<sup>3</sup> Maximum calendar annual average.

- (1) **Chloride.** The Secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. Order R5-2009-0044 included effluent limitations for chloride based on the agricultural water goal and the Secondary MCL.
- (2) **Electrical Conductivity.** The Secondary MCL for electrical conductivity is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum. Order R5-2009-0044 included effluent limitations for electrical conductivity based on the agricultural water goal and Secondary MCL.
- (3) **Sulfate.** The Secondary MCL for sulfate is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. Order R5-2004-0044 included an effluent limitation for sulfate based on the Secondary MCL.
- (4) **Total Dissolved Solids.** The Secondary MCL for total dissolved solids is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum.

**(b) RPA Results**

- (1) **Chloride.** Chloride concentrations in the effluent ranged from 17.6 mg/L to 71.8 mg/L, with a maximum annual average of 34 mg/L based on 76 samples collected between June 2013 and October 2014. These levels do not exceed the Secondary MCL. Upstream receiving water data for chloride are not available.
- (2) **Electrical Conductivity.** A review of the Discharger's monitoring reports shows a maximum annual average effluent electrical conductivity of 574 µmhos/cm, with a range from 269 µmhos/cm to 803 µmhos/cm based on 75 samples collected between June 2013 and October 2014. These levels do not exceed the Secondary MCL. The maximum observed annual average

upstream receiving water electrical conductivity was 130  $\mu\text{mhos/cm}$  based on 95 samples collected between October 2011 and September 2014.

- (3) **Sulfate.** Sulfate concentrations in the effluent ranged from 6.61 mg/L to 86.7 mg/L, with a maximum annual average of 15 mg/L based on 19 samples collected between June 2013 and October 2014. These levels do not exceed the Secondary MCL. Upstream receiving water data for sulfate is not available.
- (4) **Total Dissolved Solids.** The maximum annual average effluent total dissolved solids concentration was 390 mg/L with concentrations ranging from 290 mg/L to 561 mg/L based on 74 samples collected between June 2013 and October 2014. These levels do not exceed the Secondary MCL. The background receiving water total dissolved solids ranged from 58 mg/L to 202 mg/L, with a maximum annual average of 124 mg/L.

As discussed above, the effluent salinity levels are below the applicable water quality objectives, and the discontinuation of discharges from the Lassen Facility resulted in a net reduction of discharges of salinity to the receiving water. Nevertheless, the Discharger has indicated that they may implement changes to the process (i.e., recycling) that could increase effluent salinity. Therefore, the Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an exceedance of water quality objectives for salinity and effluent limitations are necessary to ensure that any process changes at the Facility do not result in discharges to the receiving water that exceed the applicable objectives.

- (c) **WQBEL's.** This Order includes an AMEL and MDEL of 990  $\mu\text{mhos/cm}$  and 1,200  $\mu\text{mhos/cm}$  for electrical conductivity based on the Secondary MCL. Electrical conductivity is an indicator parameter for salinity, and controlling electrical conductivity should ensure compliance with objectives for other salinity parameters. Therefore, this Order does not include effluent limitations for chloride, sulfate, or total dissolved solids. In order to ensure that the Discharger will continue to control the discharge of salinity, this Order includes a requirement to continue to implement a salinity evaluation and minimization plan.
- (d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the maximum effluent electrical conductivity concentration of 803  $\mu\text{mhos/cm}$  is less than the applicable WQBEL's. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

#### iv. **Settleable Solids**

- (a) **WQO.** For inland surface waters, the Basin Plan states that "[w]ater shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses."
- (b) **RPA Results.** The discharge of storm water and wastewaters from the electrical generation process has a reasonable potential to cause or contribute to an excursion above the Basin Plan's narrative objective for settleable solids.
- (c) **WQBEL's.** Consistent with Order R5-2009-0044, this Order contains an AMEL and MDEL for settleable solids. Because the amount of settleable solids is measured in terms of volume per volume without a mass component, it is impracticable to calculate mass limitations for inclusion in this Order.

- (d) **Plant Performance and Attainability.** Settleable solids were detected in four of 74 samples (detections summarized below). The June and July 2014 SMR cover letters indicate that the 9 June 2014 result (1.0 ml/L) and the 7 July 2014 result (0.60 ml/L) were the result of vegetative matter (e.g., algae and duckweed) in the sample, and the Discharger indicated that actions were taken to prevent vegetative matter from being collected in samples. Settleable solids were not detected in the remaining samples. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

**Table F-16. Summary of Effluent Settleable Solids Detections**

Date	Effluent Settleable Solids (ml/L)
28 May 2014	0.10
9 June 2014	1.0
30 June 2014	0.20
7 July 2014	0.60

**4. WQBEL Calculations**

- a. This Order includes WQBEL’s for chlorine residual, electrical conductivity, pH, and settleable solids. The general methodology for calculating WQBEL’s based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.
- b. **Effluent Concentration Allowance.** For each water quality criterion/objective, the ECA is calculated using the following steady-state mass balance equation from Section 1.4 of the SIP:

$$ECA = C + D(C - B) \quad \text{where } C > B, \text{ and}$$

$$ECA = C \quad \text{where } C \leq B$$

where:

- ECA = effluent concentration allowance
- D = dilution credit
- C = the priority pollutant criterion/objective
- B = the ambient background concentration.

According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the arithmetic mean concentration of the ambient background samples. For ECA’s based on MCL’s, which implement the Basin Plan’s chemical constituents objective and are applied as annual averages, an arithmetic mean is also used for B due to the long-term basis of the criteria.

- c. **Basin Plan Objectives and MCL’s.** For WQBEL’s based on site-specific numeric Basin Plan objectives or MCL’s, the effluent limitations are applied directly as the ECA as either an MDEL, AMEL, or average annual effluent limitations, depending on the averaging period of the objective.
- d. **Aquatic Toxicity Criteria.** WQBEL’s based on acute and chronic aquatic toxicity criteria are calculated in accordance with Section 1.4 of the SIP. The ECAs are converted to

equivalent long-term averages (i.e.  $LTA_{acute}$  and  $LTA_{chronic}$ ) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers.

- e. **Human Health Criteria.** WQBEL's based on human health criteria, are also calculated in accordance with Section 1.4 of the SIP. The AMEL is set equal to ECA and a statistical multiplier was used to calculate the MDEL.

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

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

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

where:

- $mult_{AMEL}$  = statistical multiplier converting minimum LTA to AMEL
- $mult_{MDEL}$  = statistical multiplier converting minimum LTA to MDEL
- $M_A$  = statistical multiplier converting acute ECA to  $LTA_{acute}$
- $M_C$  = statistical multiplier converting chronic ECA to  $LTA_{chronic}$

**Summary of Water Quality-Based Effluent Limitations  
Discharge Point 001**

**Table F-17. Summary of Water Quality-Based Effluent Limitations**

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
<b>Conventional Pollutants</b>					
pH	standard units	--	--	6.5	9.0
<b>Non-Conventional Pollutants</b>					
Chlorine, Total Residual	mg/L	0.01	0.02	--	--
Electrical Conductivity @ 25°C	µmhos/cm	990	1,200	--	--
Settleable Solids	ml/L	0.1	0.2	--	--

**5. Whole Effluent Toxicity (WET)**

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

- a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.00) The Basin Plan also states that, "...effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate..."

For priority pollutants, the SIP dictates the procedures for conducting the RPA. Acute toxicity is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Therefore, due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA. U.S. EPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available...A permitting authority might also determine that WQBEL's are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBEL's for pathogens in all permits for POTW's discharging to contact recreational waters).*" Acute toxicity effluent limits are required to ensure compliance with the Basin Plan's narrative toxicity objective.

U.S. EPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc.*" Consistent with Order R5-2009-0044, effluent limitations for acute toxicity have been included in this Order as follows:

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

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

- b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.00.) The following table summarizes the results of chronic toxicity testing conducted on 17 April 2013.

**Table F-18. Whole Effluent Chronic Toxicity Testing Results**

Date	Fathead Minnow <i>Pimephales promelas</i>		Water Flea <i>Ceriodaphnia dubia</i>		Green Algae <i>Selenastrum capricornutum</i>
	Survival (TUc)	Growth (TUc)	Survival (TUc)	Reproduction (TUc)	Growth (TUc)
17 April 2013	1	1	1	1	1

No dilution has been granted for the chronic condition. Therefore, chronic toxicity testing results exceeding 1 chronic toxicity unit (TUc) demonstrates the discharge has a

reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. In Order R5-2009-0044, the Central Valley Water Board found that the discharge had reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective and established a narrative chronic toxicity effluent limitation. Although the discharge did not exceed the numeric trigger in the 17 April 2013 testing event, based on the limited dataset, this Order retains the effluent limitation for chronic toxicity.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring during the third and fourth years of the permit term for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, the Special Provision in section VI.C.2.a of the Order includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for Toxicity Reduction Evaluation (TRE) initiation if toxicity is demonstrated.

Numeric chronic WET effluent limitations have not been included in this Order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region<sup>11</sup> that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-0012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-0012, *"In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits."* The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet BMP's for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 C.F.R. section 122.44(k).

To ensure compliance with the Basin Plan's narrative toxicity objective, the Discharger is required to conduct chronic WET testing, as specified in the Monitoring and Reporting Program (Attachment E, section V). Furthermore, the Special Provision contained at VI.C.2.a. of this Order requires the Discharger to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a TRE in accordance with an approved TRE workplan. The numeric toxicity monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to perform accelerated chronic toxicity monitoring, as well as, the threshold to initiate a TRE if effluent toxicity has been demonstrated.

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<sup>11</sup> In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 AND 1496(a)

**D. Final Effluent Limitation Considerations****1. Mass-based Effluent Limitations**

40 C.F.R. section 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 C.F.R. section 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order does not include effluent limitations expressed in terms of mass. Pursuant to the exceptions to mass limitations provided in 40 C.F.R. section 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCL's) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

**2. Averaging Periods for Effluent Limitations**

40 C.F.R. section 122.45(d) requires AMEL's and MDEL's for all dischargers other than publicly owned treatment works unless impracticable. Consistent with 40 C.F.R. section 122.45(d), this Order requires AMEL's and MDEL's for chlorine residual, electrical conductivity, and settleable solids. The rationale for using alternative averaging periods for pH is discussed in section IV.C.3 of this Fact Sheet.

**3. Satisfaction of Anti-Backsliding Requirements**

The CWA specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA sections 402(o) or 303(d)(4), or, where applicable, 40 C.F.R. section 122.44(l).

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for chloride, electrical conductivity, and sulfate. The effluent limitations for these pollutants are less stringent than those in Order R5-2009-0044. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

- a. **CWA section 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) prohibits the establishment of less stringent WQBEL's "*except in compliance with Section 303(d)(4).*" CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters.
  - i. For waters where standards are not attained, CWA section 304(d)(4)(A) specifies that any effluent limit based on a TMDL or other WLA may be revised only if the cumulative effect of all such revised effluent limits based on such TMDL's or WLA's will assure the attainment of such water quality standards.
  - ii. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy.

The Anderson Cottonwood Irrigation District Canal is considered an attainment water for chloride, electrical conductivity, and sulfate because the receiving water is not listed as impaired on the 303(d) list for these constituents<sup>12</sup>. As discussed in section IV.D.4, below, removal and relaxation of the effluent limitations complies with federal and state antidegradation requirements. Thus, removal of the effluent limitations for

<sup>12</sup> "The exceptions in Section 303(d)(4) address both waters in attainment with water quality standards and those not in attainment, i.e. waters on the section 303(d) impaired waters list." State Water Board Order WQ 2008-0006, Berry Petroleum Company, Poso Creek/McVan Facility.

chloride and sulfate and relaxation of the effluent limitations for electrical conductivity from Order R5-2009-0044 meets the exception in CWA section 303(d)(4)(B).

- b. **CWA section 402(o)(2).** CWA section 402(o)(2) provides several exceptions to the anti-backsliding regulations. CWA 402(o)(2)(B)(i) allows a renewed, reissued, or modified permit to contain a less stringent effluent limitation for a pollutant if information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance.

As described further in section IV.C.3.b of this Fact Sheet, updated information that was not available at the time Order R5-2009-0044 was issued indicates that chloride and sulfate do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. Additionally, updated information that was not available at the time Order R5-2009-0044 was issued indicates that less stringent effluent limitations for electrical conductivity satisfy requirements in CWA section 402(o)(2). The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

- i. **Chloride.** Effluent monitoring data collected between June 2013 and October 2014 indicates that chloride in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the agricultural water goal or Secondary MCL. Although this Order discontinues effluent limitations for chloride, this Order includes effluent limitations for electrical conductivity, an indicator parameter for salinity. Controlling electrical conductivity in the discharge should ensure compliance with objectives for other salinity parameters, including chloride.
- ii. **Electrical Conductivity.** Effluent monitoring data collected between June 2013 and October 2014 indicates that electrical conductivity in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL. Furthermore, the discontinuation of discharges from the Lassen Facility resulted in a net reduction of discharges of salinity to the receiving water. Nevertheless, this Order includes relaxed effluent limitations for electrical conductivity based on the Secondary MCL to ensure that any process changes (e.g., recycling) at the Facility do not result in discharges to the receiving water that exceed the applicable objectives.
- iii. **Sulfate.** Effluent monitoring data collected between June 2013 and October 2014 indicates that sulfate in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL. Although this Order discontinues effluent limitations for sulfate, this Order includes effluent limitations for electrical conductivity, an indicator parameter for salinity. Controlling electrical conductivity in the discharge should ensure compliance with objectives for other salinity parameters, including sulfate.

Thus, removal of the effluent limitations for electrical conductivity from Order R5-2009-0044 is in accordance with CWA section 402(o)(2)(B)(i), which allows for the removal of effluent limitations based on information that was not available at the time of permit issuance.

#### 4. Antidegradation Policies

- a. **Surface Water.** This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBEL's where the discharge could have the reasonable potential to cause or

contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

This Order removes effluent limitations for chloride and sulfate and relaxes effluent limitations for electrical conductivity based on updated monitoring data demonstrating that the effluent does not cause or contribute to an exceedance of the applicable water quality criteria or objectives in the receiving water. Although the Discharger may implement process changes (e.g., recycling) that could increase the salinity of the discharge, the discontinuation of discharges from the Lassen Facility resulted in a net reduction of discharges of salinity to the receiving water and the effluent limitations for electrical conductivity in this Order will ensure that any process changes do not result in discharges to the receiving water that exceed the applicable objectives. Therefore, the Central Valley Water Board finds that the removal of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16.

- b. **Groundwater.** The Discharger utilizes a retention pond, two lined fire/cooling water ponds, and proposes to construct a new storm water retention pond for the fuel pile area. Percolation from the ponds may result in an increase in the concentration of pollutant constituents in groundwater, but is not anticipated to cause exceedances of water quality objectives or unreasonably affect beneficial uses. The increase in the concentration of these constituents in groundwater must be consistent with Resolution No. 68-16. Any increase in pollutant concentrations in groundwater must be shown to be necessary to provide services and must be consistent with maximum benefit to the people of the State of California. Some degradation of groundwater by the Discharger is consistent with Resolution No. 68-16 provided that:
- i. the degradation is limited in extent;
  - ii. the degradation after effective source control, treatment, and control is limited to waste constituents typically encountered in municipal wastewater as specified in the groundwater limitations in this Order;
  - iii. the Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating best practicable treatment and control (BPTC) measures; and
  - iv. the degradation does not result in water quality less than that prescribed in the Basin Plan.

Groundwater data indicate the Facility has not caused groundwater degradation. This Order contains groundwater limitations and requires the Discharger to continue monitoring the groundwater monitoring wells. Should the downgradient wells show electrical conductivity above 500  $\mu\text{mhos/cm}$  and/or nitrate (as N) above 5 mg/L, this Order requires the Discharger to conduct an evaluation of groundwater trends and propose corrective actions to address the groundwater quality.

## 5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBEL's for individual pollutants. The technology-based effluent limitations consist of restrictions on flow and a requirement to implement BMP's as part of the Discharger's SWPPP. Restrictions on flow and BMP requirements are discussed in section IV.B.2 of this Fact

Sheet. This Order’s technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

WQBEL’s have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBEL’s were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating the individual WQBEL’s for priority pollutants are based on the CTR implemented by the SIP, which was approved by U.S. EPA on 18 May 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by U.S. EPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to U.S. EPA prior to 30 May 2000, but not approved by U.S. EPA before that date, are nonetheless “*applicable water quality standards for purposes of the CWA*” pursuant to 40 C.F.R. section 131.21(c)(1). Collectively, this Order’s restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

**Summary of Final Effluent Limitations  
 Discharge Point 001**

**Table F-19. Summary of Final Effluent Limitations**

Parameter	Units	Effluent Limitations				Basis <sup>1</sup>
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow	MGD	--	4.5 <sup>2</sup>	--	--	PO
<b>Conventional Pollutants</b>						
pH	standard units	--	--	6.5	9.0	BP, PO
<b>Non-Conventional Pollutants</b>						
Chlorine, Total Residual	mg/L	0.01	0.02	--	--	NAWQC
Electrical Conductivity @ 25°C	µmhos/cm	990	1,200	--	--	SEC MCL
Settleable Solids	ml/L	0.1	0.2	--	--	BP
Acute Toxicity	% Survival	--	70 <sup>3</sup> /90 <sup>4</sup>	--	--	BP
Chronic Toxicity	TUc	--	Narrative <sup>5</sup>	--	--	BP

<sup>1</sup> PO – Based on effluent limitations in previous Order R5-2009-0044.  
 BP – Based on water quality objectives contained in the Basin Plan.  
 NAWQC – Based on U.S. EPA’s National Ambient Water Quality Criteria for the protection of freshwater aquatic life.  
 SEC MCL – Based on the Secondary Maximum Contaminant Level.  
<sup>2</sup> The discharge of process water (non-storm water and under drain water) shall not exceed 4.5 MGD.  
<sup>3</sup> Minimum for any one bioassay.  
<sup>4</sup> Median for any three consecutive bioassays.  
<sup>5</sup> There shall be no chronic toxicity in the effluent discharge.

**E. Interim Effluent Limitations – Not Applicable**

**F. Land Discharge Specifications**

- Domestic Sewage.** Consistent with Order R5-2009-0044, this Order requires the Discharger to properly operate, maintain, and monitor the domestic sewage collection, treatment, and disposal system.

**G. Recycling Specifications – Not Applicable****V. RATIONALE FOR RECEIVING WATER LIMITATIONS****A. Surface Water**

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that “[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses.” The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plan numerical and narrative water quality objectives for bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.
  - a. **pH.** Order R5-2009-0044 established a receiving water limitation for pH specifying that discharges from the Facility shall not cause the ambient pH to change by more than 0.5 units based on the water quality objective for pH in the Basin Plan. The Central Valley Water Board adopted Resolution R5-2007-0136 on 25 October 2007, amending the Basin Plan to delete the portion of the pH water quality objective that limits the change in pH to 0.5 units and the allowance of averaging periods for pH. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and U.S. EPA. Consistent with the revised water quality objective in the Basin Plan, this Order does not require a receiving water limitation for pH change.

In Finding No. 14 of Resolution R5-2007-0136 the Central Valley Water Board found that the change in the pH receiving water objective is consistent with the State Water Board Resolution No. 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 C.F.R. § 131.12).

The relaxation of the pH receiving water limitation will protect aquatic life and other beneficial uses and will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies. The relaxation of the receiving water limitation is not expected to cause other impacts on water quality. The Central Valley Water Board finds that the relaxation of the pH receiving water limitation (i) is to the maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR §131.12).

The revised receiving water limitation for pH, which is based on the amendment to the Basin Plan's pH water quality objective, reflects current scientifically supported pH requirements for the protection of aquatic life and other beneficial uses. The revised receiving water limitation for pH is more consistent with the current U.S. EPA recommended criteria and is fully protective of aquatic life and the other beneficial uses listed in the Basin Plan. Changes in pH when pH is maintained within the range of 6.5 to 8.5 are neither beneficial nor adverse and, therefore, are not considered to be degradation in water quality. Attempting to restrict pH changes to 0.5 pH units would incur substantial costs without demonstrable benefits to beneficial uses. Thus, any

changes in pH that would occur under the revised pH limitation would not only be protective of beneficial uses, but also would be consistent with maximum benefit to people of the State. Therefore the proposed amendment will not violate antidegradation policies.

- b. **Temperature.** The Basin Plan includes a water quality objective for temperature specifying that the temperature of COLD or WARM intrastate water shall not be increased by more than 5°F. Order R5-2009-0044 allowed a mixing zone for determining compliance with the receiving water limitation and included compliance determination language allowing for compliance to be determined based on a comparison of the receiving water temperature at Monitoring Location RSW-001, located 50 feet upstream of Discharge Point 001, and Monitoring Location RSW-003, located at Schmeider Gulch approximately 2.75 miles downstream of Discharge Point 001. The Discharger has indicated that the mixing zone is no longer necessary since the Lassen facility discharges have been eliminated. However, the data and available information do not necessarily support the Discharger's claims. Therefore, this Order carries over the monitoring requirement for temperature at RSW-003 but is only required to be monitored when the temperature at RSW-002 is more than 5°F warmer than the temperature at RSW-001. This Order allows compliance to be determined at RSW-001 and either RSW-002 or RSW-003. If the temperature at RSW-002 is more than 5°F warmer than the temperature at RSW-001, this Order requires the Discharger to collect a temperature reading at RSW-003 and determine compliance at RSW-001 and RSW-003. If the temperature at RSW-002 is less than 5°F warmer than the temperature at RSW-001, then compliance is determined between RSW-001 and RSW-002.
- c. **Turbidity.** Order R5-2009-0044 established a receiving water limitation for turbidity specifying that discharges from the Facility shall not cause the turbidity to increase more than 1 NTU where natural turbidity is between 0 and 5 NTU based on the water quality objective for turbidity in the Basin Plan. The Central Valley Water Board adopted Resolution R5-2007-0136 on 25 October 2007, amending the Basin Plan to limit turbidity to 2 NTU when the natural turbidity is less than 1 NTU. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and U.S. EPA. Consistent with the revised water quality objective in the Basin Plan, this Order limits turbidity to 2 NTU when the natural turbidity is less than 1 NTU.

In Finding No. 14 of Resolution R5-2007-0136 the Central Valley Water Board found that the change in the turbidity receiving water objective is consistent with the State Water Board Resolution No. 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 C.F.R. § 131.12).

The relaxation of the turbidity receiving water limitation will protect aquatic life and other beneficial uses and will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than described in applicable policies. The relaxation of the receiving water limitation is not expected to cause other impacts on water quality. The Central Valley Water Board finds that the relaxation of the turbidity receiving water limitation (i) is to the maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial use of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR §131.12).

The revised receiving water limitation for turbidity, which is based on the amendment to the Basin Plan's turbidity water quality objective, reflects current scientifically supported turbidity requirements for the protection of aquatic life and other beneficial uses and, therefore, will be fully protective of aquatic life and the other beneficial uses listed in the Basin Plan. Changes in turbidity allowed by the revised receiving water limitation, when ambient turbidity is below 1 NTU, would not adversely affect beneficial uses and would maintain water quality at a level higher than necessary to protect beneficial uses. Restricting low-level turbidity changes further may require costly upgrades, which would not provide any additional protection of beneficial uses. Thus, any changes in turbidity that would occur under the amended turbidity receiving water limitation would not only be protective of beneficial uses, but also would be consistent with maximum benefit to people of the State. Therefore, the relaxed receiving water limitations for turbidity will not violate antidegradation policies.

## **B. Groundwater**

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

## **VI. RATIONALE FOR PROVISIONS**

### **A. Standard Provisions**

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) of 40 C.F.R. allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water

Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

## B. Special Provisions

### 1. Reopener Provisions

- a. **Mercury.** This provision allows the Central Valley Water Board to reopen this Order in the event mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted. In addition, this Order may be reopened if the Central Valley Water Board determines that a mercury offset program is feasible for dischargers subject to NPDES permits.
- b. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a TRE. This Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity limitation based on that objective.
- c. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable. If the Discharger performs studies to determine site-specific WER's and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.
- d. **Mixing Zone and Dilution Studies.** Section 1.4 of the SIP established procedures for calculating effluent limitations. Included in the procedures is determination of a dilution credit, which the Central Valley Water Board may approve or disapprove at its discretion. However, the Discharger has not developed the information needed to determine a dilution credit. Consequently, this Order establishes final effluent limitations based on zero dilution. This Order includes a reopener that allows effluent limitations to be revised if a mixing zone and dilution study demonstrates that dilution credits are appropriate.

### 2. Special Studies and Additional Monitoring Requirements

- a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at page III-8.00.) As discussed in section IV.C.5 of this Fact Sheet, the discharge exhibits reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

This provision requires the Discharger to develop a TRE Workplan in accordance with U.S. EPA guidance. In addition, the provision provides a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if toxicity has been demonstrated.

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

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

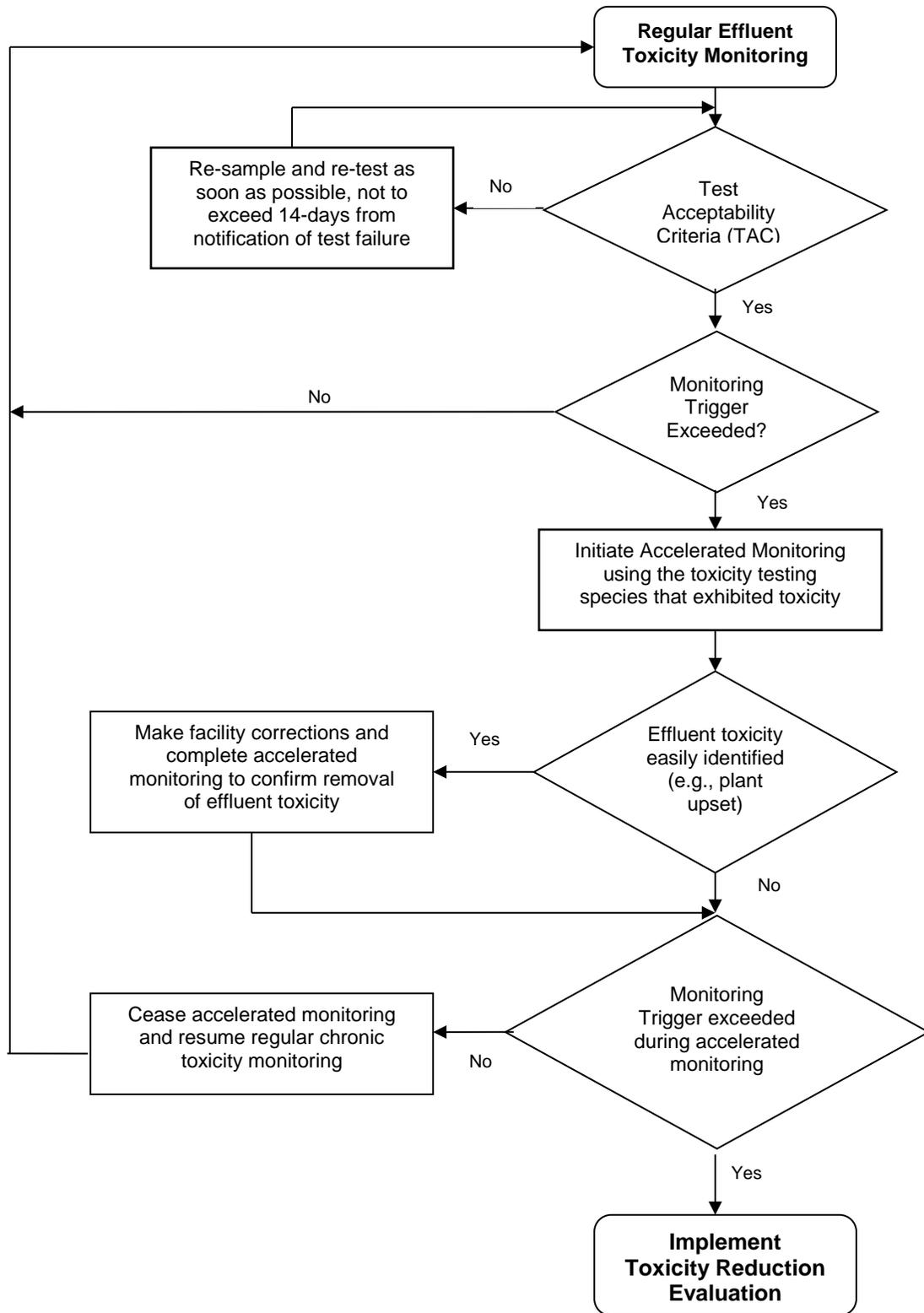
The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water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

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

**TRE Guidance.** The Discharger is required to prepare a TRE Workplan in accordance with U.S. EPA guidance. Numerous guidance documents are available, as identified below:

- i. Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, EPA/833-B-99/002, August 1999.
- ii. Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), EPA/600/2-88/070, April 1989.
- iii. Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition, EPA 600/6-91/003, February 1991.
- iv. Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I, EPA/600/6-91/005F, May 1992.
- v. Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA/600/R-92/080, September 1993.
- vi. Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA 600/R-92/081, September 1993.
- vii. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002.
- viii. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA-821-R-02-013, October 2002.
- ix. Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991.

**Figure F-1**  
**WET Accelerated Monitoring Flow Chart**



- b. **Groundwater Evaluation.** This Order includes groundwater limitations and requires the Discharger to continue monitoring the groundwater to determine compliance with the groundwater limitations. Previous Order R5-2009-0044 established site-specific groundwater limitations that were based on a report submitted by the Discharger in July 2007. In its ROWD, the Discharger requested that the site-specific groundwater limitations were no longer appropriate as the background (upgradient) groundwater monitoring well showed that upgradient conditions had changed. The Discharger requested that the groundwater limitations be consistent with the Basin Plan. This Order removes the site-specific groundwater limitations and includes groundwater limitations that are consistent with the Basin Plan. This Order also requires that the Discharger conduct a groundwater evaluation to review groundwater quality trends and to propose corrective actions if the groundwater monitoring data for the downgradient wells show that electrical conductivity exceeds 500 µmhos/cm and/or nitrate (as N) exceeds 5 mg/L.

### 3. Best Management Practices and Pollution Prevention

- a. **Salinity Evaluation and Minimization Plan.** An updated Evaluation and Minimization Plan for salinity is required to be maintained by this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to the Anderson Cottonwood Irrigation District Canal.
- b. **Storm Water Pollution Controls.** This Order requires the Discharger to implement BMP's, including treatment controls where necessary, in order to support attainment of water quality standards. The use of BMP's to control or abate the discharge of pollutants is allowed by 40 C.F.R. section 122.44(k)(3) because effluent limitations are infeasible and BMP's are reasonably necessary to achieve effluent limitations and are standards or to carry out the purposes and intent of the CWA. (40 CFR 122.44(k)(4).)

This Order requires the Discharger to develop and implement a site-specific SWPPP for the Facility. The SWPPP is necessary to identify potential sources of pollutants that may come in contact with storm water and to control or abate the discharge of pollutants to surface water or groundwater.

In order to maintain an accurate and useful SWPPP, the SWPPP must be revised when whenever there is a change in construction, site operation, or maintenance, which may affect the discharge of significant quantities of pollutants to surface water or groundwater. The SWPPP must also be amended if there are violations of this Order, or the Discharger has not achieved the general objectives of controlling pollutants in the storm water discharges.

### 4. Construction, Operation, and Maintenance Specifications

- a. **Storm Water, Retention, and Fire/Cooling Water Ponds Operating Requirements.** The operation and maintenance specifications are necessary to ensure proper operation of the ponds and minimize the potential for impacts to groundwater quality, to protect the beneficial uses of the groundwater, and to prevent nuisance conditions. In addition, reporting requirements related to use of the ponds are included to monitor the use of the ponds and the potential impact on groundwater.

### 5. Special Provisions for Municipal Facilities (POTW's Only) – Not Applicable

### 6. Other Special Provisions

- a. **Sludge, Wood Waste, and/or Ash Storage.** Sludge disposal provisions are necessary to ensure proper disposal of collected screening, sludges, wood ash, wood waste, and other solids removed from liquid wastes, ponds, or other sources in a manner that is

consistent with Title 27, California Code of Regulations (CCR), Division 2, Subdivision 1, Section 20005, et seq, and approved by the Executive Officer.

## **7. Compliance Schedules – Not Applicable**

## **VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS**

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (MRP), Attachment E of this Order establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Facility.

### **A. Influent Monitoring – Not Applicable**

### **B. Effluent Monitoring**

1. Pursuant to the requirements of 40 C.F.R. section 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.
2. **Monitoring Location EFF-001**
  - a. Effluent monitoring frequencies and sample types for flow (daily), oil and grease (semi-annually), pH (weekly), TSS (semi-annually), chemical oxygen demand (semi-annually), chlorine residual (weekly), electrical conductivity (weekly), general minerals (annually), settleable solids (weekly), sulfate (monthly), tannins and lignins (semi-annually), temperature (weekly), total dissolved solids (weekly), and turbidity (monthly) have been retained from Order R5-2009-0044 to determine compliance with effluent limitations, where applicable, and characterize the effluent for these parameters.
  - b. Order R5-2009-0044 required quarterly monitoring for arsenic, molybdenum, and vanadium. Monitoring data collected between June 2013 and October 2014 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives for these parameters. Therefore, this Order reduces the monitoring frequency for these parameters from quarterly to semi-annually.
  - c. This Order establishes semi-annual monitoring for total chromium as it is a potential constituent of concern in the discharge from the Facility.
  - d. Order R5-2009-0044 required weekly monitoring for chloride. Monitoring data collected between June 2013 and October 2014 indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives for chloride. Therefore, this Order reduces the monitoring frequency for chloride from weekly to monthly.
  - e. Monitoring data collected over the term of Order R5-2009-0044 for aluminum, fecal coliform organisms, total coliform organisms, iron, and manganese did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order R5-2009-0044.
  - f. This Order establishes monthly monitoring requirements for hardness to gather data necessary to adjust metals criteria.

- g. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established is required. This Order requires monitoring during the third and fourth years of the permit term in order to collect data to conduct an RPA for the next permit renewal. See section IX.E of the MRP for more detailed requirements related to performing priority pollutant monitoring.

### 3. Monitoring Location EFF-003

- a. Effluent monitoring frequencies and sample types for flow (daily), pH (monthly), electrical conductivity (monthly), and general minerals (annually) have been retained from Order R5-2009-0044 to characterize the groundwater discharge from the westerly under drain system for these parameters.
- b. Order R5-2009-0044 required monthly monitoring for total coliform organisms and fecal coliform organisms, but specified that sampling may be discontinued after 6 months following the completion and successful operation of the septic system improvements. Consistent with a 7 May 2012 approval letter from the Central Valley Water Board, this Order discontinues monitoring requirements for total coliform organisms and fecal coliform organisms.

### 4. Monitoring Location EFF-002 (Discharge Point IW-Shasta/D-002)

- a. Order R5-2009-0044 required the Discharger to monitor an internal waste stream designated as Monitoring Location EFF-002, associated with Discharge Point IW-Shasta/D-002. The waste stream consists of water from the blowdown tank, storm water, and discharges from the internal under drain, and discharges to the retention pond, which in turn discharges to the Anderson Cottonwood Irrigation District Canal. Previously, the retention pond also received discharges from the Lassen facility, which ceased operations in April 2013. Because the Lassen facility no longer discharges to the retention pond and the only discharge to the retention pond is the internal waste stream and onsite storm water, the monitoring location and monitoring requirements have been discontinued in this Order.

- 5. Water Code section 13176, subdivision (a), states: "The analysis of any material required by [Water Code sections 13000-16104] shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code." The State Water Board, Division of Drinking Water (DDW) certifies laboratories through its Environmental Laboratory Accreditation Program (ELAP).

Section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the CWA. (Wat. Code §§ 13370, subd. (c), 13372, 13377.) Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Wat. Code § 13372, subd. (a).) The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH, and immediate analysis is required for temperature. (40 C.F.R. § 136.3(e), Table II) Due to the location of the Facility, it is both legally and factually impossible for the Discharger to comply with section 13176 for constituents with short holding times.

## C. Whole Effluent Toxicity Testing Requirements

- 1. **Acute Toxicity.** 96-hour bioassay testing is required during the third and fourth years of the permit term to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity.** Chronic whole effluent toxicity testing is required during the third and fourth years of the permit term in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

#### **D. Receiving Water Monitoring**

##### **1. Surface Water**

- a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.
- b. **Monitoring Locations RSW-001 and RSW-002**
  - i. Receiving water monitoring requirements have been retained for flow (monthly), pH (monthly), electrical conductivity (monthly), temperature (monthly), total dissolved solids (quarterly), and turbidity (monthly).
  - ii. This Order discontinues receiving water monitoring requirements for arsenic, aluminum, iron, fecal coliform organisms, manganese, and total coliform organisms based on monitoring data indicating that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives for these parameters.
  - iii. This Order establishes monthly monitoring requirements for hardness to gather data necessary to adjust metals criteria.
  - iv. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires monitoring for priority pollutants and other pollutants of concern during the third and fourth years of the permit term in the upstream receiving water, concurrent with effluent monitoring, in order to collect data to conduct an RPA for the next permit renewal. See section IX.E of the Monitoring and Reporting Program (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.
- c. **Monitoring Location RSW-003**
  - i. Previous Order R5-2009-0044 required the Discharger to monitor the temperature in the Anderson Cottonwood Irrigation District Canal at monitoring location RSW-003, which is described as the confluence/potential overflow point of the Canal into Schmeider Gulch. RSW-003 is approximately 2.75 miles downstream of the discharge point and, along with the upstream receiving water monitoring location RSW-001, is used to determine compliance with the receiving water limitation for temperature. The previous Order indicated that the Discharger conducted a study in July 2004, which demonstrated that exceedances of the receiving water limitation for temperature were limited to the section of the Canal between the discharge point and the confluence with the nearest downstream natural waterbody. Additionally, the previous Order alluded to the fact that the Lassen facility discharge was contributing to exceedances of the receiving water limitation for temperature, with estimated Lassen facility discharge temperatures of 96°F in the summer and 90°F in the winter. The concern for exceedances of the receiving water limitation for temperature was generally for the winter months when there are no irrigation water deliveries.  
  
In its ROWD, the Discharger requested that the RSW-003 monitoring location be removed and indicated compliance with the receiving water limitation for temperature could be achieved at the downstream monitoring location designated as RSW-002. Based on the effluent temperature data collected after the Lassen facility ceased

discharge, the data indicate the temperature of the effluent has increased. Additionally, there are no upstream receiving water data available for the winter months after the Lassen facility ceased discharge. Thus, there is no way to compare the upstream receiving water (RSW-001) temperature values with the downstream receiving water (RSW-002 and/or RSW-003) temperature values to determine if the discharge is causing an exceedance of the receiving water limitation for temperature. Based on the lack of information, this Order carries over the requirement to monitor the Canal for temperature at monitoring location RSW-003. However, monitoring at RSW-003 is only required if temperature readings at RSW-002 indicate that temperature is more than 5°F warmer than the temperature at RSW-001.

## 2. Groundwater

- a. Water Code section 13267 states, in part, “(a) A Regional Water Board, in establishing...waste discharge requirements... may investigate the quality of any waters of the state within its region” and “(b) (1) In conducting an investigation..., the Regional Water Board may require that any person who... discharges... waste...that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Water Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports.” The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, a Regional Water 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. The Monitoring and Reporting Program is issued pursuant to Water Code section 13267. The groundwater monitoring and reporting program required by this Order and the Monitoring and Reporting Program are necessary to assure compliance with these waste discharge requirements. The Discharger is responsible for the discharges of waste at the facility subject to this Order.
- b. Monitoring of the groundwater must be conducted to determine if the discharge has caused an exceedance of the groundwater Limitations (i.e., water quality objectives). The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents which may have migrated to groundwater, an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide best practicable treatment or control to comply with Resolution No. 68-16. Economic analysis is only one of many factors considered in determining best practicable treatment or control. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above water quality objectives, this permit may be reopened and modified.
- c. This Order requires the Discharger to continue groundwater monitoring and includes a regular schedule of groundwater monitoring in the attached Monitoring and Reporting Program. The groundwater monitoring reports are necessary to evaluate impacts to waters of the State to assure protection of beneficial uses and compliance with Central Valley Water Board plans and policies, including Resolution No. 68-16.

## E. Other Monitoring Requirements

### 1. Domestic Waste Treatment System Monitoring

- a. Consistent with Order R5-2009-0044, this Order requires monthly inspection of the domestic waste treatment system.

- b. Order R5-2009-0044 required monthly monitoring for total coliform organisms and fecal coliform organisms. Consistent with a 7 May 2012 approval letter from the Central Valley Water Board, this Order discontinues monitoring requirements for total coliform organisms and fecal coliform organisms. This Order also does not carry over the chlorine residual monitoring requirement because the Discharger proposes to no longer its chlorination/dechlorination system for the domestic waste treatment system.

## 2. **Landscape Irrigation System Monitoring**

Consistent with Order R5-2009-0044, this Order requires monitoring of wastewater supplied to the landscape irrigation system.

## 3. **Fire and Cooling Water Ponds Monitoring**

Fire and cooling water pond monitoring is retained from Order R5-2009-0044 to ensure proper operation of the ponds. Weekly monitoring for freeboard and monthly monitoring for pH has been retained from Order R5-2009-0044. This Order discontinues daily monitoring requirements for flow pumped from the leachate sumps to the ponds.

## 4. **Fuel Pile Storm Water Pond Monitoring**

This Order includes monitoring requirements for the proposed fuel pile storm water retention pond to determine compliance with Provision VI.C.4.h. See Section II.E of this Fact Sheet for more details regarding the proposed storm water pond.

## 5. **Precipitation Monitoring**

Precipitation monitoring is necessary to assess the amount of rainfall that falls on the Facility.

## 6. **Ash Monitoring**

The annual report is necessary to determine the quantity of ash generated at the Facility and to ensure the proper handling of such material.

## **VIII. PUBLIC PARTICIPATION**

The Central Valley Water Board has considered the issuance of WDR's that will serve as an NPDES permit for the Facility. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDR's and has encouraged public participation in the WDR adoption process.

### **A. Notification of Interested Parties**

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through posting on the Central Valley Water Board's website, posting at the Facility entrance, posting at the nearest city hall or county courthouse, and posting at the nearest post office (if allowed).

The public had access to the agenda and any changes in dates and locations through the Central Valley Water Board's website at:

[http://www.waterboards.ca.gov/centralvalley/board\\_info/meetings/](http://www.waterboards.ca.gov/centralvalley/board_info/meetings/)

### **B. Written Comments**

Interested persons were invited to submit written comments concerning tentative WDR's as provided through the notification process. Comments were due by email, to the Central Valley Water Board at [CentralValleyFresno@waterboards.ca.gov](mailto:CentralValleyFresno@waterboards.ca.gov) or [Aide.Ortiz@waterboards.ca.gov](mailto:Aide.Ortiz@waterboards.ca.gov).

To be fully responded to by staff and considered by the Central Valley Water Board, the written comments were due at the Central Valley Water Board office by 5:00 p.m. on 27 April 2015.

### **C. Public Hearing**

The Central Valley Water Board held a public hearing on the tentative WDR's during its regular Board meeting on the following date and time and at the following location:

Date: 4/5 June 2015  
Time: 8:30 a.m. or 9:00 a.m.  
Location: Regional Water Quality Control Board, Central Valley Region  
11020 Sun Center Dr., Suite #200  
Rancho Cordova, CA 95670

Designated parties and interested persons were invited to attend. At the public hearing, the Central Valley Water Board heard testimony pertinent to the discharge, WDR's, and permit. For accuracy of the record, important testimony was requested in writing.

### **D. Reconsideration of Waste Discharge Requirements**

Any aggrieved person may petition the State Water Board to review the decision of the Central Valley Water Board regarding the final WDR's. The petition must be received by the State Water Board at the following address within 30 calendar days of the Central Valley Water Board's action:

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

For instructions on how to file a petition for review, see  
[http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality/wqpetition\\_instr.shtml](http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml)

### **E. Information and Copying**

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

### **F. Register of Interested Persons**

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

### **G. Additional Information**

Requests for additional information or questions regarding this order should be directed to the Central Valley Water Board, Redding office at (530) 224-4845.

**ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS**

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Aluminum, Total Recoverable	µg/L	49 <sup>1</sup>	184 <sup>1</sup>	200	750 <sup>2</sup>	--	--	--	--	200	No
Chloride	mg/L	71.8	--	230	860 <sup>2</sup>	230 <sup>3</sup>	--	--	--	250	No
Electrical Conductivity @ 25°C	µmhos/cm	574 <sup>1</sup>	130 <sup>1</sup>	900	--	--	--	--	--	900	Yes <sup>4</sup>
Iron, Total Recoverable	µg/L	94 <sup>1</sup>	412 <sup>1</sup>	300	--	--	--	--	--	300	No <sup>4</sup>
Lead, Total Recoverable	µg/L	0.10 (DNQ)	2.8	2.2	57	2.2	--	--	--	15	No <sup>4</sup>
Manganese, Total Recoverable	µg/L	41 <sup>1</sup>	10 <sup>1</sup>	50	--	--	--	--	--	50	No
Sulfate	mg/L	15 <sup>1</sup>	--	250	--	--	--	--	--	250	No
Total Dissolved Solids	mg/L	390 <sup>1</sup>	124 <sup>1</sup>	500	--	--	--	--	--	500	No

General Note: All inorganic concentrations are given as a total recoverable.

MEC = Maximum Effluent Concentration

B = Maximum Receiving Water Concentration or lowest detection level, if non-detect

C = Criterion used for Reasonable Potential Analysis

CMC = Criterion Maximum Concentration (CTR or NTR)

CCC = Criterion Continuous Concentration (CTR or NTR)

Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)

Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)

Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective

MCL = Drinking Water Standards Maximum Contaminant Level

NA = Not Available

ND = Non-detect

DNQ = Detected but not quantified

Footnotes:

- (1) Represents the maximum observed average annual concentration for comparison with the Secondary MCL.
- (2) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour average.
- (3) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 4-hour average.
- (4) See discussion in Fact Sheet section IV.C.3.

**ATTACHMENT H – CALCULATION OF QBEL’S**

Human Health QBEL’s Calculations									
Parameter	Units	Criteria	Mean Background Concentration	Dilution Factor	MDEL Multiplier	AMEL Multiplier	AMEL	AWEL	MDEL
Electrical Conductivity @ 25°C	µmhos/cm	900	130	--	1.30	1.10	990 <sup>1</sup>	--	1,200 <sup>1</sup>

<sup>1</sup> Calculated by setting the LTA equal to the Secondary MCL of 900 µg/L and using the AMEL multiplier to set the AMEL and the MDEL multiplier to set the MDEL. (Table 2 of the SIP)