CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

364 Knollcrest Drive, Suite 205, Redding, California 96002
Phone (530) 224-4845 • Fax (530) 224-4857
http://www.waterboards.ca.gov/centralvalley

ORDER R5-2017-XXXX
NPDES NO. CA0004821

WASTE DISCHARGE REQUIREMENTS FOR THE PACTIV LLC MOLDED PULP MILL TEHAMA COUNTY

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

Table 1. Discharger Information

Discharger	Pactiv LLC
Name of Facility	Molded Pulp Mill
Facility Address	1000 Diamond Avenue
	Red Bluff, CA 96080
	Tehama County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Process wastewater and non-contact cooling and sealing water	40°09'10"	122°12'20"	Sacramento River

Table 3. Administrative Information

This Order was adopted on:	**<Adoption Date>**
This Order shall become effective on:	**<Effective Date>**
This Order shall expire on:	**<Expiration Date>**
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:	**365 days prior to this Order's expiration date**
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:	Major

I, PAMELA C. 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 **<DATE>**.

PAMELA C. CREEDON, Executive Officer

TENTATIVE

TABLE OF CONTENTS

I. Facility Information 3
II. Findings 3
III. Discharge Prohibitions 4
IV. Effluent Limitations and Discharge Specifications 5
A. Effluent Limitations – Discharge Point 001 5
1. Final Effluent Limitations – Discharge Point 001 5
V. Receiving Water Limitations 6
A. Surface Water Limitations 6
B. Groundwater Limitations 8
VI. Provisions 8
A. Standard Provisions 8
B. Monitoring and Reporting Program (MRP) Requirements 12
C. Special Provisions 12
1. Reopener Provisions 12
2. Special Studies, Technical Reports and Additional Monitoring Requirements 13
3. Best Management Practices and Pollution Prevention 14
4. Construction, Operation and Maintenance Specifications 14
5. Compliance Schedules 15
VII. Compliance Determination 15

LIST OF TABLES

Table 1. Discharger Information 1
Table 2. Discharge Location 1
Table 3. Administrative Information 1
Table 4. Effluent Limitations 5

LIST OF ATTACHMENTS

Attachment A – Definitions A-1
Attachment B – Location Map B-1
Attachment C – Flow Schematic C-1
Attachment D – Standard Provisions D-1
Attachment E – Monitoring and Reporting Program E-1
Attachment F – Fact Sheet F-1
Attachment G – Summary of Reasonable Potential Analysis G-1
Attachment H – Calculation of WQBEL'S H-1

TENTATIVE

I. FACILITY INFORMATION

Information describing Pactiv LLC's Molded Pulp Mill (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.

TENTATIVE

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 R5-2011-0036 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 Discharger shall not allow pollutant-free wastewater to be discharged into the treatment or disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

TENTATIVE

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. Effluent Limitations

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants					
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L[1]	--	11.4	--	--
	lbs/day	138	264	--	--
pH	standard units	--	--	6.5	8.5
Total Suspended Solids	mg/L[1]	--	28.5	--	--
	lbs/day	348	648	--	--
Priority Pollutants					
Copper, Total Recoverable	µg/L	7.1	10	--	--
Non-Conventional Pollutants					
Settleable Solids	mL/L	0.1	0.2	--	--

[1] Concentration-based effluent limitation is based on a maximum capacity of 2.7 million gallons per day (MGD).

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; and
ii. 90%, median for any three consecutive bioassays.

c. **Maximum Daily Discharge Flow.** The maximum daily discharge flow shall not exceed 2.7 million gallons per day (MGD).

d. **Diazinon and Chlorpyrifos.** Effluent diazinon and chlorpyrifos concentrations shall not exceed the sum of one (1.0) as identified below:

i. **Average Monthly Effluent Limitation**

$$S_{AMEL} = \frac{C_{D\ avg}}{0.079} + \frac{C_{C\ avg}}{0.012} \leq 1.0$$

$C_{D\ avg}$ = average monthly diazinon effluent concentration in µg/L.
$C_{C\ avg}$ = average monthly chlorpyrifos effluent concentration in µg/L.

TENTATIVE

ii. **Average Weekly Effluent Limitation**

$$S_{AWEL} = \frac{C_{D\ avg}}{0.14} + \frac{C_{C\ avg}}{0.021} \leq 1.0$$

$C_{D\ avg}$ = average weekly diazinon effluent concentration in µg/L.
$C_{C\ avg}$ = average weekly chlorpyrifos effluent concentration in µg/L.

e. **Mercury, Total Recoverable.** For a calendar year, the total annual mass discharge of total recoverable mercury shall not exceed 0.0065 lbs.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in the Sacramento River:

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. From 1 June to 31 August, the dissolved oxygen concentration to be reduced below 9.0 mg/L. When natural conditions lower dissolved oxygen below this level, the concentrations shall be maintained at or above 95 percent of saturation.
   b. From 1 September through 31 May:
      i. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;
      ii. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor
      iii. 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;

TENTATIVE

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 or to be elevated above 56°F during periods when temperature increases will be detrimental to the fishery, whichever is more restrictive. Compliance to be determined based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002. Compliance with this limitation to be determined in accordance with Section VII.F.

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:**

    a. Shall not exceed 2 Nephelometric Turbidity Units (NTU) where natural turbidity is less than 1 NTU;

    b. Shall not increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;

    c. Shall not increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;

TENTATIVE

d. Shall not increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor

e. Shall not increase more than 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations

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

1. Contain waste constituents in concentrations that exceed either the Primary or Secondary MCLs established in Title 22 of the California Code of Regulations, or are statistically greater than background water quality or groundwater objectives, whichever is greater, except that total coliform organisms shall not exceed 2.2 MPN/100 mL over any 7-day period.
2. Exhibit a pH of less than 6.5 or greater than 8.5.
3. Impart taste, odor, toxicity, or color that creates nuisance or impairs any beneficial use.

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

TENTATIVE

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

TENTATIVE

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,

TENTATIVE

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.

TENTATIVE

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 the mass effluent limitation modified (higher or lower) or an effluent concentration 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 mercury mass loading limitation(s) and 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 when developing effluent limitations for copper. The Discharger is conducting a site-specific translator study for copper and zinc. 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. **Dilution Credits/Mixing Zones.** If the Discharger conducts a dilution/mixing zone study demonstrating that dilution credits and mixing zones for human health and/or aquatic life criteria comply with the requirements of Section 1.4.2 of the SIP, this Order may be reopened to adjust effluent limitations based on allowable dilution credits/mixing zones.

TENTATIVE

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Toxicity Reduction Evaluation Requirements.** For compliance with the Water Quality Control Plan, Fourth Edition (Revised July 2016), for the Sacramento and San Joaquin River Basin's (hereinafter Basin Plan) 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 Toxicity Reduction Evaluation (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. TREs 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 chronic toxicity unit (TUc) (where TUc = 100/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.

TENTATIVE

(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[1].

3. Best Management Practices and Pollution Prevention

a. **Salinity Evaluation and Minimization Plan.** The Discharger shall update and continue to implement a salinity evaluation and minimization plan to identify and address sources of salinity discharged from the Facility. The updated plan shall be **submitted** to the Central Valley Water Board **within 9 months** of the **effective date** of this Order for approval by the Executive Officer. The Discharger shall evaluate the effectiveness of the salinity evaluation and minimization plan and **provide a summary** with the Report of Waste Discharge, **due 365 days prior** to the **permit expiration date**.

4. Construction, Operation and Maintenance Specifications

a. **Treatment Pond Operating Requirements**

i. Neither discharge nor treatment shall create a nuisance or pollution as defined in Water Code section 13050.

ii. Objectionable odors originating at the Facility shall not be perceivable beyond the limits of the property owned by the Discharger.

iii. The discharge shall not cause the degradation of any water supply.

iv. The dissolved oxygen content of the wastewater treatment discharge shall not be less than 1.0 mg/L in any 24-hour period.

v. Ponds shall be managed to prevent breeding of mosquitos. In particular,

(a) An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.

(b) Weeds shall be minimized.

[1] See the Fact Sheet (Attachment F, section VII.B.2.a.) for a list of U.S. EPA guidance documents that must be considered in development of the TRE Workplan.

TENTATIVE

(c) Dead algae, vegetation, and debris shall not accumulate on the water surface.

vi. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.

vii. Domestic waste shall remain underground at all times.

5. Compliance Schedules

a. **Compliance Schedule for Temperature Receiving Water Limitation.** The Discharger shall comply with the following time schedule:

Task	Date Due
i. **Scope and Develop Final Plan for Temperature Study.** With input from natural resource agencies[1] and the Central Valley Water Board, develop an appropriate scope of work to collect sufficient information for assessing thermal discharge impacts from the Facility's effluent and determine the level of improvement necessary to meet Basin Plan objectives and comply with receiving water limits. Based upon study scoping efforts, submit a final study plan for approval by the Central Valley Water Board's Executive Officer.	**Within 1.5 years** of the effective date of this Order
ii. **Complete the Temperature Study and Submit a Final Report**. Include recommendations for site-specific implementation criteria for receiving water temperature objectives, including in part a period of applicability, and appropriate averaging periods. Recommendations for site-specific implementation criteria are to be considered for approval by the Central Valley Water Board's Executive Officer.	**Within 1.5 years** of work plan approval
iii. Develop and analyze alternatives for achieving compliance with approved Receiving Water limits with consideration of site-specific implementation criteria. Present selected alternative(s), including work plan and implementation timeline, for approval by the Central Valley Water Board's Executive Officer.	**Within 6 months** after the Executive Officer's approval of site-specific implementation criteria
iv. Complete the selected alternative(s) in Task iii to maintain compliance with Receiving Water limits considering site-specific implementation criteria approved by the Central Valley Water Board's Executive Officer.	**Within a timeline requested by the Discharger and approved by the Central Valley Water Board's Executive Officer for the selected alternative(s)**
v. Progress Reports	**1 February,** annually, following the effective date of this order

[1] Participation in scoping efforts for the temperature study should be requested from the following agencies: California Department of Fish And Wildlife, U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (West Coast Region).

VII. COMPLIANCE DETERMINATION

A. BOD_5 and TSS Effluent Limitations (Section IV.A.1.a). Compliance with the final effluent limitations for BOD_5 and TSS required in Limitations and Discharge Requirements section IV.A.1.a shall be ascertained by 24-hour composite samples.

TENTATIVE

B. Total Mercury Mass Loading Effluent Limitations (Section IV.A.1.e). The procedures for calculating mass loadings are as follows:

1. The total pollutant mass load for each individual calendar month shall be determined using an average of all concentration data collected that month and the corresponding total monthly flow. All effluent monitoring data collected under the monitoring and reporting program and any special studies shall be used for these calculations. The total annual mass loading shall be the sum of the individual calendar months.

2. In calculating compliance, the Discharger shall count all non-detect measures at one-half of the detection level. If compliance with the effluent limitation is not attained due to the non-detect contribution, the Discharger shall improve and implement available analytical capabilities and compliance shall be evaluated with consideration of the detection limits.

C. Priority Pollutant Effluent Limitations. Compliance with effluent limitations for priority pollutants shall be determined in accordance with Section 2.4.5 of the SIP, as follows:

1. Dischargers shall be deemed out of compliance with an effluent limitation, if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

2. Dischargers shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:

   a. A sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the RL; or

   b. A sample result is reported as non-detect (ND) and the effluent limitation is less than the method detection limit (MDL).

3. When determining compliance with an average monthly effluent limitation (AMEL) and more than one sample result is available in a month, the discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or 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, 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.

4. If a sample result, or the arithmetic mean or median of multiple sample results, is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the discharger conducts a PMP (as described in section 2.4.5.1), the discharger shall <u>not</u> be deemed out of compliance.

D. Dissolved Oxygen Receiving Water Limitation (Section V.A.5.b.i-iii). Weekly receiving water monitoring is required in the Monitoring and Reporting Program (Attachment E) and is sufficient to evaluate the impacts of the discharge and compliance with this Order. Weekly receiving water monitoring data, measured at Monitoring Locations RSW-001 and RSW-002, will be used to determine compliance with part "iii" of the dissolved oxygen receiving water

TENTATIVE

limitation to ensure the discharge does not cause the dissolved oxygen concentrations in the Sacramento River to be reduced below 7.0 mg/L at any time. However, should more frequent dissolved oxygen and temperature receiving water monitoring be conducted, Central Valley Water Board staff may evaluate compliance with parts “a” and “b”.

E. Chlorpyrifos and Diazinon Effluent Limitations (Section IV.A.1.d). Compliance shall be determined by calculating the sum (S), as provided in this Order, with analytical results that are reported as “non-detectable” concentrations to be considered zero.

F. Receiving Water Temperature Limitation (Section V.A.15). The Discharger will be deemed in compliance with the temperature limitation in Section V.A.15 provided the compliance schedule in Section VI.C.5 is being met.

TENTATIVE

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)
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:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n 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.

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.

TENTATIVE

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

TENTATIVE

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 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.

TENTATIVE

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

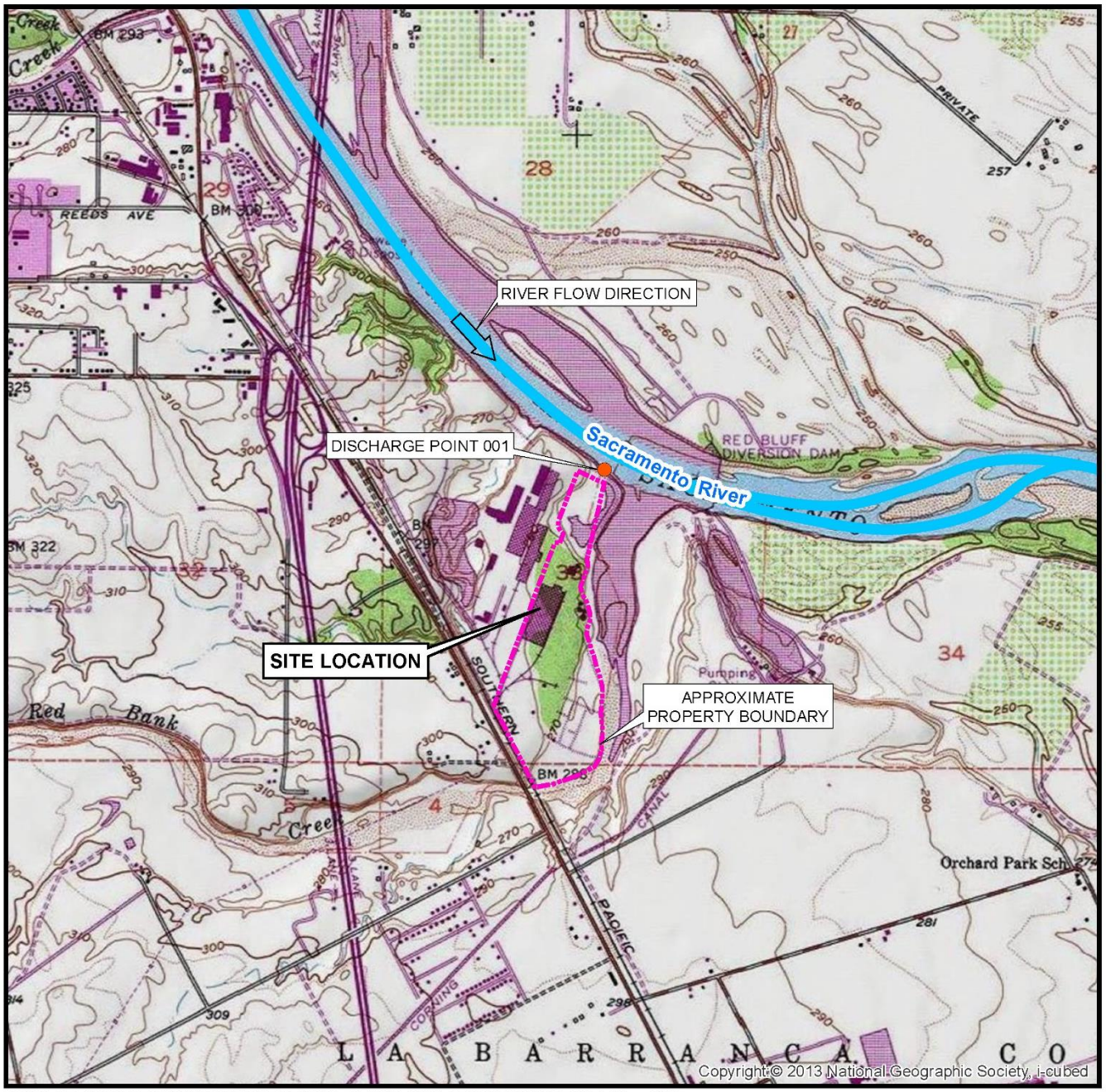
$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:
x is the observed value;
μ 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.)

TENTATIVE

ATTACHMENT B – LOCATION MAP



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE: RED BLUFF EAST, CA - 1976

SCALE 1:24,000

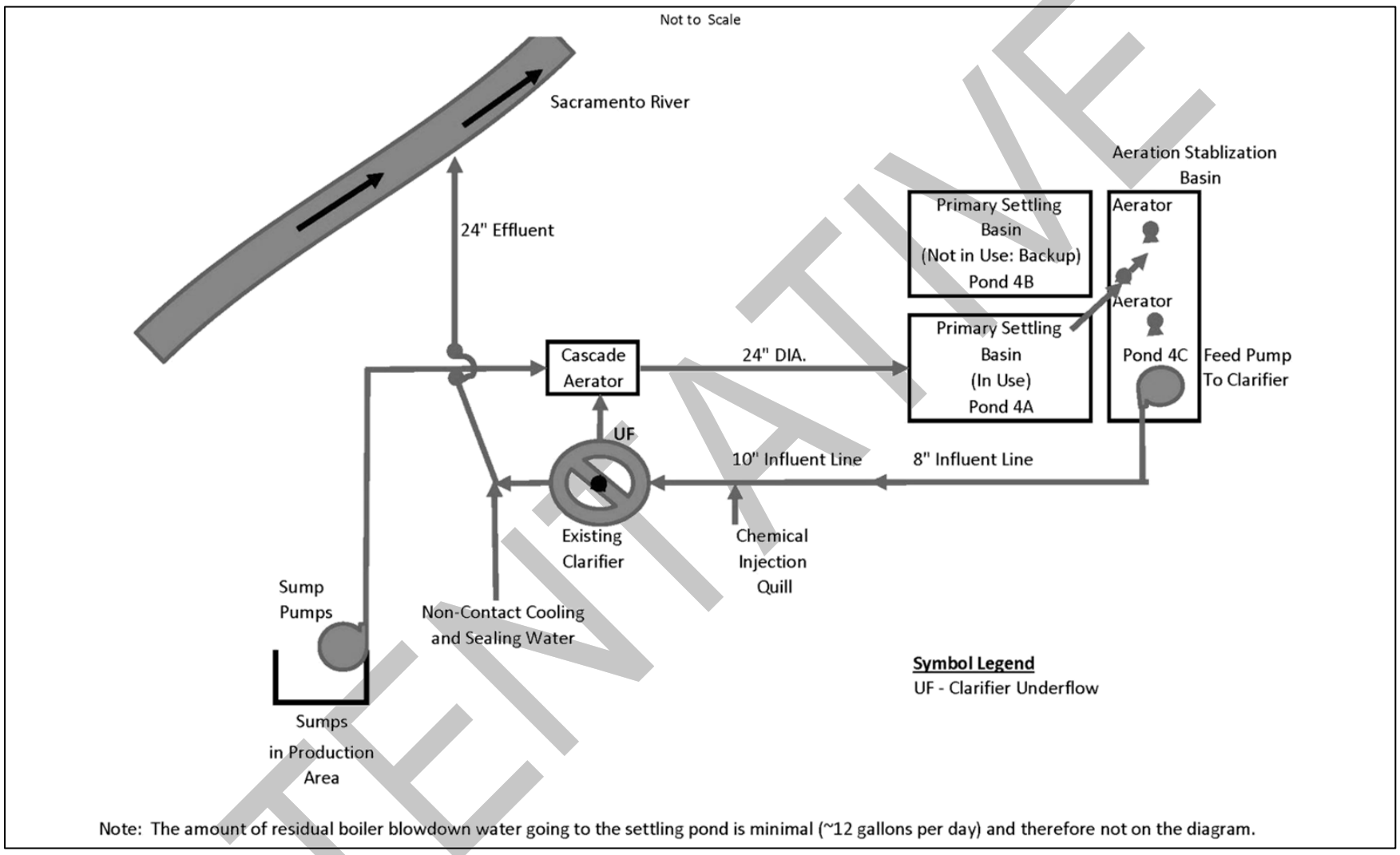
0.5 0.25 0 0.5 1 Miles

1,000 500 0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 Feet

CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

N

ATTACHMENT C – FLOW SCHEMATIC



Note: The amount of residual boiler blowdown water going to the settling pond is minimal (~12 gallons per day) and therefore not on the diagram.

TENTATIVE

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):

TENTATIVE

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).)

TENTATIVE

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).)

TENTATIVE

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

TENTATIVE

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).)

TENTATIVE

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).)

TENTATIVE

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)):

TENTATIVE

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 (µg/L) (40 C.F.R. § 122.42(a)(1)(i));

   b. 200 µg/L for acrolein and acrylonitrile; 500 µg/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 (µg/L) (40 C.F.R. § 122.42(a)(2)(i));

   b. 1 milligram per liter (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).)

TENTATIVE

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

TABLE OF CONTENTS

I. General Monitoring Provisions E-2
II. Monitoring Locations E-3
III. Effluent Monitoring Requirements E-4
  A. Monitoring Location EFF-001 ..... E-4
IV. Whole Effluent Toxicity Testing Requirements E-5
V. Land Discharge Monitoring Requirements E-7
  A. Monitoring Locations LND-001A, LND-002, and LND-003 ..... E-7
  B. Monitoring Location LND-001B E-8
VI. Receiving Water Monitoring Requirements E-8
  A. Monitoring Locations RSW-001 and RSW-002 ..... E-8
  B. Monitoring Locations GW-001, GW-002, GW-003, and GW-004 ..... E-9
VII. Other Monitoring Requirements E-10
  A. Effluent and Receiving Water Characterization E-10
VIII. Reporting Requirements E-14
  A. General Monitoring and Reporting Requirements E-14
  B. Self-Monitoring Reports (SMR's) E-14
  C. Discharge Monitoring Reports (DMR's) E-17
  D. Other Reports E-17

LIST OF TABLES

Table E-1. Monitoring Station Locations E-3
Table E-2. Effluent Monitoring E-4
Table E-3. Chronic Toxicity Testing Dilution Series E-6
Table E-4. Land Discharge Monitoring Requirements – Monitoring Locations LND-001A, LND-002, and LND-003 E-7
Table E-5. Land Discharge Monitoring Requirements – Monitoring Location LND-001B E-8
Table E-6. Receiving Water Monitoring Requirements – Monitoring Location RSW-001 ..... E-8
Table E-7. Receiving Water Monitoring Requirements – Monitoring Location RSW-002 ..... E-9
Table E-8. Groundwater Monitoring Requirements E-10
Table E-9. Effluent and Receiving Water Characterization Monitoring E-11
Table E-10. Monitoring Periods and Reporting Schedule E-15
Table E-11. Reporting Requirements for Special Provisions Reports E-17

TENTATIVE

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 total 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 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.

TENTATIVE

G. The Discharger shall ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Resources Control Board at the following address:

State Water Resources Control Board Quality Assurance Program Officer
Office of Information Management and Analysis
State Water Resources Control Board
1001 I Street, Sacramento, CA 95814

H. 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.

I. 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 maximum daily 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	Downstream from the last connection through which treated process wastewater and non-contact cooling and sealing water can be admitted into the outfall. Samples may be collected from "Manhole 11" immediately downstream of the clarifier.
--	LND-001A	Location where wastewater can be monitored in the primary settling basin (Pond 4A).
--	LND-001B	Location where wastewater can be monitored prior to entering the primary settling basin (Pond 4A).
--	LND-002	Location where wastewater can be monitored in the backup primary settling basin (Pond 4B).
--	LND-003	Location where wastewater can be monitored in the aeration basin (Pond 4C).
--	RSW-001	In the Sacramento River, immediately upstream from the point of discharge.
--	RSW-002	In the Sacramento River, within 75 feet downstream of the point of discharge.
--	GW-001	Groundwater monitoring well upgradient of Ponds 4A, 4B, and 4C (also referred to as Monitoring Well MW-7).
--	GW-002	Groundwater monitoring well upgradient of Ponds 4A, 4B, and 4C (also referred to as Monitoring Well MW-6R).
--	GW-003	Groundwater monitoring well downgradient of Ponds 4A, 4B, and 4C (also referred to as Monitoring Well MW-8).
--	GW-004	Groundwater monitoring well downgradient of Ponds 4A, 4B, and 4C (also referred to as Monitoring Well MW-10).

TENTATIVE

III. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor the combined treated process wastewater and non-contact cooling and sealing water 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	Meter	Continuous	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-hr Composite[1]	1/Week	[2]
	lbs/day	Calculate	1/Week	--
Oil and Grease	mg/L	Grab	2/Year	[2]
pH	standard units	Grab	1/Week	[2]
Total Suspended Solids	mg/L	24-hr Composite[1]	1/Week	[2]
	lbs/day	Calculate	1/Week	--
Priority Pollutants				
Copper, Total Recoverable	µg/L	Grab	1/Month	[2,3]
Mercury, Total Recoverable	µg/L	Grab	1/Month	[2,3,4]
Non-Conventional Pollutants				
Chemical Oxygen Demand	mg/L	Grab	1/Month	[2]
Chlorine, Total Residual	mg/L	Grab	1/Week	[2,8]
Chlorpyrifos	µg/L	Grab	1/Year	[2,5]
Diazinon	µg/L	Grab	1/Year	[2,5]
Electrical Conductivity (@ 25°C)	µmhos/cm	Grab	1/Week	[2]
Fecal Coliform	MPN/100 mL	Grab	1/Month[6]	[2]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month[7]	[2]
Settleable Solids	mL/L	Grab	1/Week	[2]
Temperature	°F	Meter	Continuous	[2]
Total Dissolved Solids	mg/L	Grab	1/Month	[2]

[1] 24-hour flow proportional composite. In the event of composite malfunction, a grab sample must be substituted.

[2] 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.

[3] 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, section IX.A).

[4] Total mercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*, for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by U.S. EPA method 1630/1631 (Revision E) with a reporting limit of 0.5 ng/L.

[5] Chlorpyrifos and diazinon shall be sampled using U.S. EPA Method 625M, Method 8141, or equivalent GC/MS

TENTATIVE

method.

[6] Monitoring shall be conducted for a period of one year following the effective date of this Order.

[7] Hardness samples shall be collected concurrently with metals samples.

IV. 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 quarterly acute toxicity testing.
2. *Sample Types* – The Discharger may use flow-through or static renewal testing. For static renewal testing, the samples shall be flow proportional 24-hour composites 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 three species chronic toxicity testing once during the term of this Order.
2. *Sample Types* – Effluent samples shall be flow proportional 24-hour composites 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 can 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.

TENTATIVE

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-3, 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-3. Chronic Toxicity Testing Dilution Series

Sample	Dilutions[1] (%)					Control
	100	75	50	25	12.5	
% Effluent	100	75	50	25	12.5	0
% Control Water	0	25	50	75	87.5	100

[1] 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 annual self-monitoring report (SMR), and shall contain, at minimum:

   a. The results expressed in chronic toxicity unit (TUc), measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate.

   b. The statistical methods used to calculate endpoints;

   c. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);

TENTATIVE

d. The dates of sample collection and initiation of each toxicity test; and

e. The results compared to the numeric toxicity monitoring trigger.

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the quarterly SMR's and reported as percent survival.

3. **TRE Reporting.** Reports for TREs 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.

V. LAND DISCHARGE MONITORING REQUIREMENTS

A. Monitoring Locations LND-001A, LND-002, and LND-003

1. The Discharger shall monitor the settling basins (Ponds 4A and 4B) and aeration pond (Pond 4C) at Monitoring Locations LND-001A, LND-002, and LND-003 when water is present, as follows:

Table E-4. Land Discharge Monitoring Requirements – Monitoring Locations LND-001A, LND-002, and LND-003

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Freeboard	Feet	Measure[1]	1/Week	--
Dissolved Oxygen	mg/L	Grab	1/Week[2]	[3,4]
Odors	--	Observation	1/Week	--
pH	standard units	Grab	1/Week[2]	[3,4]
Electrical Conductivity (@ 25°C)	µmhos/cm	Grab	1/Week[2]	[3,4]
Fecal Coliform	MPN/100 mL	Grab	1/Month[5,6]	[3]

[1] To be measured vertically to the lowest point of overflow.
[2] Samples for Pond 4C (Monitoring Location LND-003) may be collected at Monitoring Location EFF-001.
[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 USEPA-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.
[5] Monitoring required at Monitoring Location LND-001A, only.
[6] Monitoring shall be conducted for a period of one year following the effective date of this Order.

TENTATIVE

B. Monitoring Location LND-001B

1. The Discharger shall monitor wastewater prior to entering Pond 4A at Monitoring Location LND-001B as follows:

Table E-5. Land Discharge Monitoring Requirements – Monitoring Location LND-001B

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Fecal Coliform	MPN/100 mL	Grab	1/Month[1]	[2]

[1] Monitoring shall be conducted for a period of one year following the effective date of this Order.
[2] 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.

VI. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Locations RSW-001 and RSW-002

1. The Discharger shall monitor the Sacramento River at Monitoring Location RSW-001 as follows:

Table E-6. Receiving Water Monitoring Requirements – Monitoring Location RSW-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
pH	standard units	Grab	1/Week	[1,2]
Priority Pollutants				
Copper, Total Recoverable	µg/L	Grab	1/Month	[1,3]
Non-Conventional Pollutants				
Chlorpyrifos	µg/L	Grab	1/Year	[1,5]
Diazinon	µg/L	Grab	1/Year	[1,5]
Dissolved Oxygen	mg/L	Grab	1/Week	[1,2]
Electrical Conductivity (@ 25°C)	µmhos/cm	Grab	1/Week	[1,2]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month	[1,4]
Temperature	°F	Grab	1/Week	[1,2]
Turbidity	NTU	Grab	1/Week	[1,2]
Total Dissolved Solids	mg/L	Grab	1/Month	[1]

[1] 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.
[2] 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] 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, section IX.A).
[4] Hardness samples shall be collected concurrently with metals samples.
[5] Chlorpyrifos and diazinon shall be sampled using U.S. EPA Method 625M, Method 8141, or equivalent GC/MS method. Monitoring shall be conducted for a period of two years following the effective date of this Order

TENTATIVE

2. The Discharger shall monitor the Sacramento River at Monitoring Location RSW-002 as follows:

Table E-7. Receiving Water Monitoring Requirements – Monitoring Location RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
pH	standard units	Grab	1/Week	[1,2]
Non-Conventional Pollutants				
Dissolved Oxygen	mg/L	Grab	1/Week	[1,2]
Electrical Conductivity (@ 25°C)	µmhos/cm	Grab	1/Week	[1,2]
Temperature	°F	Grab	1/Week	[1,2]
Turbidity	NTU	Grab	1/Week	[1,2]

[1] 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.

[2] 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.

B. Monitoring Locations GW-001, GW-002, GW-003, and GW-004

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 Well Nos. GW-001, GW-002, GW-003, and GW-004) 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 purged of at least three well volumes until temperature, pH, and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Groundwater monitoring at Monitoring Locations GW-001, GW-002, GW-003, and GW-004, and any new groundwater monitoring wells shall include, at a minimum, the following:

TENTATIVE

Table E-8. Groundwater Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Depth to Groundwater	±0.01 feet	Measurement	1/Quarter	--
Groundwater Elevation[1]	±0.01 feet	Calculated	1/Quarter	--
Gradient	feet/feet	Calculated	1/Quarter	--
Gradient Direction	degrees	Calculated	1/Quarter	--
Electrical Conductivity (@ 25°C)	µmhos/cm	Grab	1/Quarter	[2]
Total Dissolved Solids	mg/L	Grab	1/Quarter	[2]
pH	standard units	Grab	1/Quarter	[2]
Fecal Coliform	MPN/100 mL	Grab	1/Quarter[4]	[2]
Total Coliform	MPN/100 mL	Grab	1/Quarter	[2]
Nitrate, Total (as N)	mg/L	Grab	1/Quarter	[2]
Standard Minerals[3]	µg/L	Grab	1/Year	[2]

[1] 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.

[2] 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.

[3] Standard minerals shall include the following: arsenic, boron, iron, magnesium, sodium, sulfate (as SO_4), chloride, manganese, total phosphorus (as P), total alkalinity, and hardness.

[4] Monitoring shall be conducted for a period of three years following the effective date of this Order.

VII. OTHER MONITORING REQUIREMENTS

A. Effluent and Receiving Water Characterization

1. **Twice Per Permit Term Monitoring.** Samples shall be collected from the effluent and upstream receiving water (Monitoring Locations EFF-001 and RSW-001) twice during the permit term and analyzed for the constituents listed in Table E-9, below. Monitoring shall be conducted twice during the third year of the permit term, evenly distributed throughout the year (e.g., once during 1st or 2nd quarter and once during the 3rd or 4th quarter), 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 receiving water samples shall be taken as grab samples. Effluent samples shall be taken as described in Table E-9, below.

TENTATIVE

Table E-9. Effluent and Receiving Water Characterization Monitoring

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
VOLATILE ORGANICS			
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
Methyl bromide (Bromomethane)	µg/L	Grab	1
Naphthalene	µg/L	Grab	10
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
1,1,2- 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	--
SEMI-VOLATILE ORGANICS			
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

TENTATIVE

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
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
Bis(2-chloroethyl) ether	µg/L	Grab	1
Bis(2-chloroisopropyl) ether	µg/L	Grab	10
Bis(2-ethylhexyl) phthalate[2]	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
INORGANICS			
Aluminum	µg/L	24-hr Composite[3]	--
Antimony	µg/L	24-hr Composite[3]	5
Arsenic	µg/L	24-hr Composite[3]	10
Asbestos	MFL	24-hr Composite[3]	--
Barium	µg/L	24-hr Composite[3]	--
Beryllium	µg/L	24-hr Composite[3]	2
Cadmium	µg/L	24-hr Composite[3]	0.5
Chromium (Total)	µg/L	24-hr Composite[3]	10
Chromium (VI)	µg/L	24-hr Composite[3]	10
Iron	µg/L	24-hr Composite[3]	--
Lead	µg/L	24-hr Composite[3]	2
Mercury[4]	µg/L	24-hr Composite[3]	0.5
Manganese	µg/L	24-hr Composite[3]	--
Molybdenum	µg/L	24-hr Composite[3]	--
Nickel	µg/L	24-hr Composite[3]	20
Selenium	µg/L	24-hr Composite[3]	5

TENTATIVE

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
Silver	µg/L	24-hr Composite[3]	2
Thallium	µg/L	24-hr Composite[3]	1
Zinc	µg/L	24-hr Composite[3]	20
NON-METALS/MINERALS			
Boron	µg/L	24-hr Composite[3]	--
Chloride	mg/L	24-hr Composite[3]	--
Cyanide	µg/L	24-hr Composite[3]	5
Fluoride	µg/L	24-hr Composite[3]	--
Phosphorus, Total (as P)	mg/L	24-hr Composite[3]	--
Sulfate	mg/L	24-hr Composite[3]	--
Sulfide (as S)	mg/L	24-hr Composite[3]	--
Sulfite (as SO_3)	mg/L	24-hr Composite[3]	--
PESTICIDES/PCBS/DIOXINS			
4,4'-DDD	µg/L	24-hr Composite[3]	0.05
4,4'-DDE	µg/L	24-hr Composite[3]	0.05
4,4'-DDT	µg/L	24-hr Composite[3]	0.01
alpha-Endosulfan	µg/L	24-hr Composite[3]	0.02
alpha-Hexachlorocyclohexane (BHC)	µg/L	24-hr Composite[3]	0.01
Aldrin	µg/L	24-hr Composite[3]	0.005
beta-Endosulfan	µg/L	24-hr Composite[3]	0.01
beta-Hexachlorocyclohexane	µg/L	24-hr Composite[3]	0.005
Chlordane	µg/L	24-hr Composite[3]	0.1
delta-Hexachlorocyclohexane	µg/L	24-hr Composite[3]	0.005
Dieldrin	µg/L	24-hr Composite[3]	0.01
Endosulfan sulfate	µg/L	24-hr Composite[3]	0.01
Endrin	µg/L	24-hr Composite[3]	0.01
Endrin Aldehyde	µg/L	24-hr Composite[3]	0.01
Heptachlor	µg/L	24-hr Composite[3]	0.01
Heptachlor Epoxide	µg/L	24-hr Composite[3]	0.02
Lindane (gamma-Hexachlorocyclohexane)	µg/L	24-hr Composite[3]	0.5
PCB-1016	µg/L	24-hr Composite[3]	0.5
PCB-1221	µg/L	24-hr Composite[3]	0.5
PCB-1232	µg/L	24-hr Composite[3]	0.5
PCB-1242	µg/L	24-hr Composite[3]	0.5
PCB-1248	µg/L	24-hr Composite[3]	0.5
PCB-1254	µg/L	24-hr Composite[3]	0.5
PCB-1260	µg/L	24-hr Composite[3]	0.5
Toxaphene	µg/L	24-hr Composite[3]	--
Atrazine	µg/L	24-hr Composite[3]	--
2,4-D	µg/L	24-hr Composite[3]	--
Simazine (Princep)	µg/L	24-hr Composite[3]	--
2,3,7,8-TCDD (Dioxin)	µg/L	24-hr Composite[3]	--
CONVENTIONAL PARAMETERS			
pH	Std Units	Grab	--
Temperature	ºF	Grab	--
NONCONVENTIONAL PARAMETERS			
Hardness (as CaCO3)	mg/L	Grab	--
Foaming Agents (methylene blue active substances)	µg/L	24-hr Composite[3]	--
Mercury, Methyl	ng/L	Grab	--
NUTRIENTS			
Ammonia (as N)	mg/L	24-hr Composite[3]	--
Nitrate (as N)	mg/L	24-hr Composite[3]	--
Nitrite (as N)	mg/L	24-hr Composite[3]	--

TENTATIVE

[1] 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.

[2] 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.

[3] 24-hour flow proportional composite.

VIII. 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. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Central Valley Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the compliance time schedule.
4. 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://www.waterboards.ca.gov/ciwqs/index.html). 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:

TENTATIVE

Table E-10. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with monthly SMR
1/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Month	Permit effective date	1st 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
1/Year	Permit effective date	1 January through 31 December	1 February of following year

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 (± 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, AWEL, 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:

TENTATIVE

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. **Mass Loading Limitations**. For BOD_5 and TSS, the Discharger shall calculate and report the mass loading (lbs/day) in the SMR's. The mass loading shall be calculated as follows:

Mass Loading (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34

When calculating daily mass loading, the daily average flow and constituent concentration shall be used. For monthly average mass loading, the monthly average flow and constituent concentration shall be used.

b. **Total Calendar Annual Mass Loading Mercury Effluent Limitations.** The Discharger shall calculate and report the total calendar annual mercury mass loading for the effluent in the December SMR. The total calendar year annual mass loading shall be calculated as specified in section VII.B of the Limitations and Discharge Requirements.

c. **Chlorpyrifos and Diazinon Effluent Limitations.** The Discharger shall calculate and report the value of S_{AMEL} and S_{AWEL} for the effluent, using the equation in Effluent Limitation IV.A.1.d and consistent with the Compliance Determination Language in Section VII.E of the Limitations and Discharge Requirements.

d. **Turbidity Receiving Water Limitations**. The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity

TENTATIVE

condition specified in Section V.A.17.a-e. of the Limitations and Discharge Requirements.

e. **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.

C. Discharge Monitoring Reports (DMR's)

1. The Discharger shall electronically submit DMR's together with SMR's using Electronic Self-Monitoring Reports module eSMR 2.5 or any upgraded version. Electronic submittal of DMR's will be in addition to electronic submittal of SMR's. Information about electronic submittal of DMR's is provided by the Discharge Monitoring Report website as follows: (http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/).

D. Other Reports

1. **Special Study Reports and Progress Reports**. As specified in the Special Provisions contained in section VI of the Order, special study and progress reports shall be submitted in accordance with the following reporting requirements. At minimum, the progress reports shall include a discussion of the status of final compliance, whether the Discharger is on schedule to meet the final compliance date, and the remaining tasks to meet the final compliance date.

Table E-11. Reporting Requirements for Special Provisions Reports

Special Provision	Reporting Requirements
Salinity Evaluation and Minimization Plan. Updated Plan (Special Provision VI.C.3.a)	**Within 9 months** of the effective date of this Order
Salinity Evaluation and Minimization Plan. Progress Report (Special Provision VI.C.3.a)	**365 days prior to this order's expiration date**
Compliance Schedule for Temperature Receiving Water Limitation. Scope and develop final plan for a temperature study (Special Provision VI.C.5.a).	**Within 1.5 years** of the effective date of this Order
Compliance Schedule for Temperature Receiving Water Limitation. Complete the temperature study and submit a final report (Special Provision VI.C.5.a).	**Within 1.5 years** of the approval of the work plan
Compliance Schedule for Temperature Receiving Water Limitation. Develop and analyze alternatives for achieving compliance and present the selected alternative (Special Provision VI.C.5.a).	**Within 6 months** after the Executive Officer's approval of site-specific implementation criteria
Compliance Schedule for Temperature Receiving Water Limitation. Progress Reports (Special Provision VI.C.5.a).	**1 February,** annually, following the effective date of this order

2. 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 report the progress in satisfaction of compliance schedule dates specified in Special Provisions VI.C.5. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date.

TENTATIVE

3. **Within 60 days of permit adoption**, 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-4, E-5, E-6, E-7, and E-8. In addition, no less than 6 months prior to conducting the effluent and receiving water characterization monitoring required in Section IX.A, the Discharger shall submit a report outlining RL's, MDL's, and analytical methods for the constituents listed in Table E-9. 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-9 provides required maximum reporting levels in accordance with the SIP.

4. **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, certificate grades, and general responsibilities of all persons employed at the Facility.

   a. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.

   b. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

   c. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

   d. 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.

TENTATIVE

ATTACHMENT F – FACT SHEET

TABLE OF CONTENTS

I. Permit Information F-3
II. Facility Description F-4
A. Description of Wastewater and Biosolids Treatment and Controls F-4
B. Discharge Points and Receiving Waters F-5
C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data F-5
7 Minimum percent survival F-6
D. Compliance Summary F-6
III. Applicable Plans, Policies, and Regulations F-6
A. Legal Authorities F-6
B. California Environmental Quality Act (CEQA) F-6
C. State and Federal Laws, Regulations, Policies, and Plans F-6
D. Impaired Water Bodies on CWA 303(d) List F-8
E. Other Plans, Policies and Regulations F-9
IV. Rationale For Effluent Limitations and Discharge Specifications F-10
A. Discharge Prohibitions F-11
B. Technology-Based Effluent Limitations F-11
1. Scope and Authority F-11
2. Applicable Technology-Based Effluent Limitations F-12
C. Water Quality-Based Effluent Limitations (WQBEL's) F-14
1. Scope and Authority F-14
2. Applicable Beneficial Uses and Water Quality Criteria and Objectives F-14
3. Determining the Need for WQBEL's F-23
4. WQBEL Calculations F-32
5. Whole Effluent Toxicity (WET) F-34
D. Final Effluent Limitation Considerations F-37
1. Mass-based Effluent Limitations F-37
2. Averaging Periods for Effluent Limitations F-37
3. Satisfaction of Anti-Backsliding Requirements F-37
4. Antidegradation Policies F-38
5. Stringency of Requirements for Individual Pollutants F-40
V. Rationale for Receiving Water Limitations F-41
A. Surface Water F-41
B. Groundwater F-42
VI. Rationale for Provisions F-42
A. Standard Provisions F-42
B. Special Provisions F-42
1. Reopener Provisions F-42
2. Special Studies and Additional Monitoring Requirements F-43
3. Best Management Practices and Pollution Prevention F-46
4. Construction, Operation, and Maintenance Specifications F-46
5. Compliance Schedules F-46
VII. Rationale for Monitoring and Reporting Requirements F-47
C. Effluent Monitoring F-47
D. Whole Effluent Toxicity Testing Requirements F-48
E. Receiving Water Monitoring F-48
1. Surface Water F-48

TENTATIVE

2. Groundwater F-48
F. Other Monitoring Requirements F-49
VIII. Public Participation F-50
A. Notification of Interested Parties F-50
B. Written Comments F-50
C. Public Hearing F-50
D. Reconsideration of Waste Discharge Requirements F-50
E. Information and Copying F-51
F. Register of Interested Persons F-51
G. Additional Information F-51

LIST OF TABLES

Table F-1. Facility Information F-3
Table F-2. Historic Effluent Limitations and Monitoring Data F-5
Table F-3. Basin Plan Beneficial Uses F-7
Table F-4. 303(d) List for the Sacramento River F-9
Table F-5. BPT Effluent Limitations for Secondary Fiber Non-Deink Facilities Where Molded Products from Wastepaper Are Produced Without Deinking F-13
Table F-6. BAT Effluent Limitations for Secondary Fiber Non-Deink Facilities Where Molded Products from Wastepaper Are Produced Without Deinking F-13
Table F-7. Summary of Technology-based Effluent Limitations F-14
Table F-8. Summary of CTR Criteria for Hardness-dependent Metals F-18
Table F-9. Verification of CTR Compliance for Copper F-22
Table F-10. Verification of CTR Compliance for Silver F-23
Table F-11. Salinity Water Quality Criteria/Objectives F-24
Table F-12. Summary of Water Quality-Based Effluent Limitations F-34
Table F-13. Whole Effluent Chronic Toxicity Testing Results F-36
Table F-14. Summary of Final Effluent Limitations F-40

TENTATIVE

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.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	5A522001004
CIWQS Facility Place ID	247342
Discharger	Pactiv LLC
Name of Facility	Molded Pulp Mill
Facility Address	1000 Diamond Avenue Red Bluff, CA 96080 Tehama County
Facility Contact, Title and Phone	Michael Chapman, Plant Manager, (530) 528-3333
Authorized Person to Sign and Submit Reports	Michael Chapman, Plant Manager, (530) 528-3333
Mailing Address	Same as Facility Address
Billing Address	Same as Facility Address
Type of Facility	Industrial (SIC code 2679 for converted paper)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	B
Pretreatment Program	Not Applicable
Recycling Requirements	Not Applicable
Facility Permitted Flow	2.7 million gallons per day (MGD)
Facility Design Flow	2.7 MGD
Watershed	Sacramento – Lower Thames
Receiving Water	Sacramento River
Receiving Water Type	Inland surface water

A. Pactiv LLC (hereinafter Discharger) is owner and operator of a Molded Pulp Mill (hereinafter 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 Sacramento River, a water of the United States, within the Sacramento – Lower Thames watershed. The Discharger was previously regulated by Order R5-2011-0036 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0004821 adopted on 10 June 2011 and expired on 1 June 2016. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

TENTATIVE

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 WDR's and NPDES permit on 10 November 2015. The ROWD provided administrative extension of the terms of WDR Order R5-2011-0036 (NPDES Permit No. CA0004821) until new WDRs were adopted pursuant to this order. A site visit was conducted on 14 April 2016 to observe operations and collect additional information necessary to develop permit limitations and requirements for waste discharge.

II. FACILITY DESCRIPTION

The Discharger owns and operates a molded pulp processing plant, process wastewater treatment system, and disposal conveyance lines. The plant employs approximately 95 people and operates 24 hours a day, except during holidays. The business has been in operation since 1957.

Historically, the plant produced paper plates, egg cartons, and other molded paper products (e.g., berry baskets). Production was reduced by 65 percent with the discontinuation of the latter two lines in May 2004 and September 2003, respectively. Currently, only paper plates are produced at the Facility. The Discharger does not plan to increase production during the term of this Order.

The plant currently uses approximately 33 tons per day of pulp fiber to manufacture approximately 30 tons per day of aqueous/fatty food grade paper plates. Roughly 65 percent of this fiber is from secondary sources. Paper plates manufacturing (also called Duplex manufacturing) is a two-part process consisting of a top liner and a back liner. The top liner is a blend of purchased virgin pulp, which is defibered, refined, and whitened with bluing agent, a blue liquid pigment. It is further modified with chemicals that provide oil and water holdout properties. The back liner consists of white blank news, the unprinted cuttings and sheets of white newsprint or other uncoated white groundwood paper. This fiber is mixed with hot water, defibered, and further modified with chemicals that provide water holdout properties. The top and back liners have separate molding drums, vats, and water systems. Plates are formed when a wire form enters each vat and vacuum is applied. The top liner and bottom liners subsequently are joined between dies and dried. Chemicals used in the manufacturing process include retention aids to retain fines and improve drainage, chemicals to provide water resistance (i.e., water hold-out properties), and pigments.

Process and domestic water is supplied by two water wells operated by the Discharger. The wells, designated No. 1 and No. 3, were installed in 1956 and 1960, respectively. Both are approximately 500 feet deep. Well No. 1 operates continuously and Well No. 3 provides makeup water. An additional well (Well No. 2) is also located on the Discharger's property, but is not used by the Facility.

The Facility is located on approximately 100 acres owned by the Discharger and approximately 4 acres leased from Meyers Motels located west of the Discharger's property. The leased property consists of parking and a 22,000 square foot building used for storing equipment. The site is bound on the north by the Sacramento River, on the south by a railroad spur and undeveloped property, on the east by Red Bank Creek, and on the west by industrial land where a natural gas-fired power plant and an abandoned sawmill are located. The Facility is located on the south bank of the Sacramento River approximately ½ mile upstream of the Red Bluff Diversion Dam.

A. Description of Wastewater and Biosolids Treatment and Controls

Process wastewater from the production of recyclable paper food service products and boiler blowdown wastewater is transported through a cascade aerator before entering two sump

TENTATIVE

basins. Process wastewater is then discharged into a primary settling pond (Pond 4A). A second settling pond (Pond 4B) is used only during emergency operations and maintenance. Supernatant from the settling pond flows by gravity to a 1.6 million gallon aeration basin (Pond 4C) before entering a 75-foot diameter clarifier. Sludge from the clarifier is returned to the primary settling pond. Clarified process wastewater is combined with non-contact cooling and sealing water and is subsequently discharged into the Sacramento River at Discharge Point 001.

The treatment system previously included three settling basins (Ponds 1, 2, and 3) and an aeration stabilization basin (Pond 5). The Discharger discontinued use of these units in 2013. The Discharger has removed all paper pulp solids from Pond 1, 3, and 5, and has filled Pond 1 with clean soil from the Fish Passage Improvement Project. Pond 2 contains wet paper pulp that is not ready for removal.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 33, T27N, R3W, MDB&M, as shown in Attachment B, a part of this Order.
2. Treated municipal wastewater is discharged at Discharge Point 001 to the Sacramento River, a water of the United States at a point latitude 40°09'10"N and longitude 122°12'20"W.

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

Effluent limitations contained in Order R5-2011-0036 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2011-0036 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (June 2011 – April 2016)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow	MGD	--	--	2.7[1]	--	--	2.3
Biochemical Oxygen Demand (5-Day @ 20°C)	mg/L	--	--	11.4[2]	--	--	4.0
	lbs/day	138	--	264	38.3	--	48.6
pH	standard units	--	--	6.5 – 8.5	--	--	6.8 – 8.5
Total Suspended Solids	mg/L	--	--	28.5[2]	--	--	18
	lbs/day	348	--	648	124	--	167
Copper, Total Recoverable	µg/L	3.1	--	6.1	4.85	--	5.2
Mercury, Total Recoverable	lbs/year	0.0065[3]	--	--	0.0019[4]	--	--
Zinc, Total Recoverable	µg/L	10	--	17	14.2	--	14.2
Settleable Solids	mL/L	0.1	--	0.2	<0.1	--	0.1
Acute Toxicity	% Survival	--	--	70[5]/90[6]	--	--	95[7]

ND – Non-Detectable
NR – Not Reported

TENTATIVE

[1] The maximum daily discharge flow shall not exceed 2.7 MGD.
[2] Concentration-based effluent limitation based on a maximum capacity of 2.7 MGD.
[3] The total annual mass discharge of mercury from the Facility shall not exceed 0.0065 lbs.
[4] Represents the maximum observed annual total mercury loading.
[5] Minimum for any one bioassay
[6] Median for any three or more consecutive bioassays
[7] Minimum percent survival

D. Compliance Summary

The Discharger was not subject to any enforcement actions during the 5-year term of WDR Order R5-2011-0036.

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.

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

1. **Water Quality Control Plan.** 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 July 2016), 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. 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. Beneficial uses applicable to the Sacramento River from Shasta Dam to the Colusa Basin Drain are as follows:

TENTATIVE

Table F-3. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Sacramento River	Existing: Municipal and domestic supply (MUN); agricultural supply, including irrigation and stock watering (AGR); industrial service supply (IND); hydropower generation (POW); contact recreation, including canoeing and rafting (REC-1); non-contact recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); warm and cold migration of aquatic organisms (MIGR); warm and cold spawning, reproduction, and/or early development (SPWN); wildlife habitat (WILD); and navigation (NAV).

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, that 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, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (State Anti-Degradation Policy). The State Anti-Degradation Policy is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. The State Anti-Degradation Policy 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 the State Anti-Degradation Policy. The Board finds this order is consistent with the Federal and State Water Board antidegradation regulations and policy.

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.

TENTATIVE

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.** A series of drainage ditches surround the plant and convey storm water runoff to Red Bank Creek at four storm water discharge locations, SW-1, SW-2, SW-3, and SW-4.

   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 manufacturing facilities with Standard Industrial Classifications (SIC's). Manufacturing facilities are applicable industries under the storm water program and are obligated to comply with the federal regulations. On 27 March 2015, the Discharger submitted a notice of intent (NOI) to be covered under the General Industrial Storm Water Permit.

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 listing for the Sacramento River from Red Bluff to Knights Landing includes DDT, dieldrin, mercury, polychlorinated biphenyls (PCB's), and unknown toxicity.

TENTATIVE

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. Table F-4, below, identifies the 303(d) listings and the status of each TMDL.

Table F-4. 303(d) List for the Sacramento River

Pollutant	Potential Sources	TMDL Completion[1]
DDT	Unknown	(2021)
Dieldrin	Unknown	(2021)
Mercury	Unknown	(2021)
PCB's	Unknown	(2021)
Unknown Toxicity	Unknown	(2019)

[1] Dates in parenthesis are proposed TMDL completion dates.

3. The 303(d) listings and TMDL's have been considered in the development of the Order. A pollutant-by-pollutant evaluation of each pollutant of concern is described in section IV.C.3 of this Fact Sheet.

E. Other Plans, Policies and Regulations

1. **Title 27, California Code of Regulations (CCR), section 20005 et seq. (hereafter Title 27).** Discharges of wastewater to land, including but not limited to evaporation ponds or percolation ponds, are exempt from the requirements of Title 27, CCR, based on section 20090 et seq. Title 27 CCR section 20090(b) contains an exemption for discharges of wastewater to land where the discharge is covered by WDRs, the discharge is in compliance with the Basin Plan, and the discharge does not need to be managed as a hazardous waste. This Order serves as WDR's for the discharge and the discharge does not need to be managed as hazardous waste. The Facility contains two settling basins (Ponds 4A and 4B) and an aeration basin (Pond 4C) where a determination has been made by the Regional Water Board whether the treatment basins meet the exemptions from Title 27.

   The treatment system previously included three settling basins (Ponds 1, 2, and 3) and an aeration stabilization basin (Pond 5). Order No. R5-2004-0124 required the Discharger to submit a Process Wastewater Evaluation and Treatment Report identifying the best practicable treatment or control (BPTC) to prevent infiltration to groundwater of pollutants that could impact groundwater. The Discharger conducted a pond liner assessment and determined that the ponds were constructed with a clay liner and were capped with gravel, presumably to provide a working surface for heavy equipment during removal of solids. Ponds 1 through 3 were utilized for several years and emptied many times. Due to the high quality of the liner of Pond 4, the Discharger concluded that providing treatment in Pond 4, modified to provide settling and aeration in three basins, and discontinuation of the use of Ponds 1 through 3 and the aeration stabilization basin would constitute BPTC. The Discharger completed modification to Pond 4 and discontinued the use of Ponds 1 through 3 and the aeration stabilization basin in 2013.

   In order to qualify for an exemption from Title 27 under section 20090(b), the Discharger must demonstrate compliance with the Basin Plan, which includes meeting BPTC and

TENTATIVE

complying with water quality objectives for groundwater. Based on groundwater monitoring conducted since 2013, increases in concentrations of electrical conductivity and total coliform organisms in down gradient wells have been observed. However, several environmental conditions have resulted in a change in aquifer dynamics, including: (1) movement of the pond treatment system to the current location in May 2013 and (2) gates at the Red Bluff Diversion Dam were permanently raised in 2013, which influenced the direction and magnitude of groundwater flow. Until the Discharger provides further information (e.g., groundwater monitoring data), the Regional Water Board cannot determine whether the process wastewater treated in Ponds 4A, 4B, and 4C, and the underlying groundwater, complies with the applicable water quality control plan, as required by the exemption at Title 27 section 20090(b). Therefore, this Order requires the Discharger to collect groundwater monitoring data to discern whether discharges to Ponds 4A, 4B, and 4C are degrading water quality.

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.

TENTATIVE

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 MCL's. 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 that 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 that 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 inclusion of pollutant free wastewater shall cause improper operation of the Facility's systems).** This prohibition is based on 40 C.F.R. section 122.41 et seq. that requires the proper design and operation of treatment facilities.

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 discharge authorized by this Order must meet minimum federal technology-based requirements based on Effluent Limitations

TENTATIVE

Guidelines and Standards (ELG's) for the Secondary Fiber Non-Deink Subcategory of the Pulp, Paper, and Paperboard Point Source Category at 40 C.F.R. part 430, subpart J, which is applicable to facilities where molded products from wastepaper are produced without deinking.

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 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. **BOD_5, TSS, and pH.** ELG's were established at 40 C.F.R. part 430, subpart J for the Secondary Fiber Non-Deink Subcategory of the Pulp, Paper, and Paperboard Point Source Category. The Discharger produces molded pulp products primarily from secondary fibers without deinking at the Facility, and thus the requirements of 40 C.F.R. part 430, subpart J are applicable to the discharge of process wastewater from the Facility. Discharge from the Facility is continuous, with few exceptions.

40 C.F.R. section 430.102(b) requires that existing point sources subject to subpart J achieve the effluent limitations representing the degree of effluent reduction attainable by the application of BPT for continuous dischargers as described in the table below.

TENTATIVE

Table F-5. BPT Effluent Limitations for Secondary Fiber Non-Deink Facilities Where Molded Products from Wastepaper Are Produced Without Deinking

Parameter	Units	Effluent Limitations	
		Maximum for any 1 day	Average of daily values for 30 consecutive days
Biochemical Oxygen Demand (5-Day @ 20°C)	lbs/1,000 lbs of product	4.4	2.3
Total Suspended Solids	lbs/1,000 lbs of product	10.8	5.8
pH	standard units	[1]	--

[1] Within the range of 5.0 to 9.0 at all times.

The Discharger produces approximately 900 tons (1.8 million pounds) of product per month and operates daily, resulting in an average daily production of 60,000 pounds. Effluent limitations for BOD_5 and TSS were calculated based on the applicable BPT effluent limitations described in Table F-5 above and using an average daily production of 60,000 pounds of product.

The effluent limitation guidelines at 40 C.F.R. part 430, subpart J do not require concentration-based effluent limitations for BOD_5 and TSS; however, Order R5-2011-0036 established a concentration-based maximum daily effluent limitation (MDEL). Consistent with Order R5-2011-0036, this Order includes a concentration-based MDEL for BOD_5 and TSS based on the maximum capacity of 2.7 MGD.

b. **Pentachlorophenol and Trichlorophenol.** 40 C.F.R. section 430.104 requires that existing point sources subject to subpart J and where chlorophenolic-containing biocides are used, achieve the effluent limitations representing the degree of effluent reduction attainable by the application of BAT as described in the table below.

Table F-6. BAT Effluent Limitations for Secondary Fiber Non-Deink Facilities Where Molded Products from Wastepaper Are Produced Without Deinking

Parameter	Units	Effluent Limitations
		Maximum for any 1 day[1]
Pentachlorophenol	lbs/1,000 lbs of product	0.00087
	mg/L	(0.029)(7.2)/y
Trichlorophenol	lbs/1,000 lbs of product	0.00030
	mg/L	(0.010)(7.2)/y

[1] y = wastewater discharged in kgal per ton of product.

Dischargers not using chlorophenolic-containing biocides are required to certify that they are not using these biocides. The Discharger submitted a letter dated 18 March 2004, and confirmed during a site visit on 25 May 2010, that chlorophenolic-containing biocides are not used at the Facility. Thus, effluent limitations for pentachlorophenol and trichlorophenol based on BAT are not included in this Order.

c. **Flow.** The design flow rate of the Facility is 2.7 MGD. Order R5-2011-0036 included effluent limitations for flow. Consistent with Order R5-2011-0036, this Order contains a maximum daily flow effluent limitation of 2.7 MGD.

TENTATIVE

Summary of Technology-based Effluent Limitations
Discharge Point 001

Table F-7. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	--	2.7	--	--
Conventional Pollutants					
Biochemical Oxygen Demand (5-Day @ 20°C)	mg/L[1]	--	11.4	--	--
	lbs/day	138	264	--	--
pH[2]	standard units	--	--	5.0	9.0
Total Suspended Solids	mg/L[1]	--	28.5	--	--
	lbs/day	348	648	--	--

[1] Concentration-based effluent limitation based on a maximum capacity of 2.7 MGD.
[2] Note that more stringent WQBEL's for pH are applicable and are established as final effluent limitations in this Order (see section IV.C.3 of this Fact Sheet).

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

TENTATIVE

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 Facility discharges to the Sacramento River via a 24-inch diameter steel pipe at Discharge Point 001. Discharge Point 001 is located just upstream of Red Bank Creek and approximately ¼ miles upstream of the Red Bluff Diversion Dam.

   The Sacramento River, downstream of Discharge Point 001, is an important migratory corridor for California Endangered Species Act and Federal Endangered Species Act listed adult and juvenile salmonids including: winter and spring-run Chinook salmon (*Oncorhynchus tshawytscha*) and Central Valley steelhead (*O. mykiss*). It is also a spawning and migratory area for fall and late fall-run Chinook salmon (*O. tshawytscha*), as well as home to numerous other native and non-native fish species. Listed species are actively migrating, spawning, and/or rearing in all months of the year in this area of the Sacramento River.

   Refer to section III.C.1. above for a complete description of the beneficial uses.

b. **Effluent and Ambient Background Data.** The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on data collected between April 2013 and March 2016, which includes effluent and ambient background data submitted in SMR's.

c. **Assimilative Capacity/Mixing Zone.** The Discharger submitted a *Mixing Zone Study for NPDES Permitted Discharges* (URS) in April 2004 requesting mixing zones for zinc and cadmium. The Discharger submitted an *Update of Mixing Zone Modeling Evaluation of Pactiv Corporation Red Bluff, CA Facility Discharge to the Sacramento River* (LimnoTech) dated March 2009 to verify that the mixing zones and dilution credits proposed in the 2004 study were still valid.

   The Discharger requested that mixing zones for copper, zinc, and chronic toxicity be allowed in Order R5-2011-0036; however, the Central Valley Water Board did not authorize mixing zones for these parameters because the 2004 Study and 2009 Update did not address mixing zones for copper or chronic toxicity and assimilative capacity for zinc was not available.

   The Discharger has not provided an updated mixing zone study or requested mixing zones be granted in this Order. This Order contains a reopener provision allowing

TENTATIVE

the Central Valley Water Board to consider granting dilution and modifying the final effluent limitations based on an approved mixing zone study. The worst-case dilution is assumed to be zero to provide protection for the receiving water beneficial uses. The impact of assuming zero dilution/assimilative capacity within the receiving water is that the discharge limitations are end-of-pipe limits with no allowance for dilution within the receiving water.

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.

The Discharger submitted a November 2015 *Copper and Zinc Translator Study Work Plan, Pactiv LLC Molded Pulp Mill (Facility), Red Bluff, California* (Work Plan) to conduct a metal translator study for copper and zinc, and is in the process of conducting sampling of the receiving water for copper and zinc to develop site-specific translators. This Order contains a reopener provision allowing the Central Valley Water Board to allow site-specific translators for copper and zinc and modify applicable effluent limitations based on an approved translator study.

e. **Hardness-Dependent CTR Metals Criteria.** The CTR and the NTR 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 hardness of the receiving water (actual ambient hardness) as required by the SIP[1] and the CTR[2]. The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. The CTR requires that the hardness values used shall be consistent with the design discharge conditions for design flows and mixing zones[3]. Where design flows for aquatic life criteria include the lowest 1-day flow with an average reoccurrence frequency of once in 10 years (1Q10) and the lowest average seven consecutive day flow with an average reoccurrence frequency of once in 10 years (7Q10).[4] This section of the CTR also indicates that the design conditions should be established such that the appropriate criteria are not exceeded more than once in a 3 year period on average.[5] The CTR 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.[6] The CTR does not define the term "ambient," as applied in the regulations. Therefore, the Central Valley Water Board has considerable discretion to consider upstream and downstream ambient conditions when establishing the appropriate water quality criteria that fully complies with the CTR and SIP.

[1] 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.
[2] The CTR requires that, for waters with a hardness of 400 mg/L (as $CaCO_3$), or less, the actual ambient hardness of the surface water must be used (40 C.F.R. § 131.38(c)(4)).
[3] 40 C.F.R. §131.3(c)(4)(ii)
[4] 40 C.F.R. §131.38(c)(2)(iii) Table 4
[5] 40 C.F.R. §131.38(c)(2)(iii) Table 4, notes 1 and 2
[6] 40 C.F.R. §131.38(c)(2)(i)

TENTATIVE

i. **Summary Findings**

The ambient hardness for the Sacramento River is represented by the data in Figure F-1, below, which shows ambient hardness ranging from 48 mg/L to 81 mg/L based on collected ambient data from April 2013 through March 2016 (note that a result of 91 mg/L, observed on 20 January 2015, was determined to be a statistical outlier using the Grubb's test). Given the high variability in ambient hardness values, there is no single hardness value that describes the ambient receiving water for all possible scenarios (e.g., minimum, maximum). Because of this variability, staff has determined that based on the ambient hardness concentrations measured in the receiving water, the Central Valley Water Board has discretion to select ambient hardness values within the range of 48 mg/L (minimum) up to 81 mg/L (maximum). Staff recommends that the Board use the ambient hardness values shown in Table F-8 for the following reasons.

(a) Using the ambient receiving water hardness values shown in Table F-8 will result in criteria and effluent limitations that ensure protection of beneficial uses under all ambient receiving water conditions.

(b) The Water Code mandates that the Central Valley Water Board establish permit terms that will ensure the reasonable protection of beneficial uses. In this case, using the lowest measured ambient hardness to calculate effluent limitations is not required to protect beneficial uses. Calculating effluent limitations based on the lowest measured ambient hardness is not required by the CTR or SIP, and is not reasonable as it would result in overly conservative limits that will impart substantial costs to the Discharger without providing any additional protection of beneficial uses. In compliance with applicable state and federal regulatory requirements, after considering the entire range of ambient hardness values, Board staff has used the ambient hardness values shown in Table F-8 to calculate the proposed effluent limitations for hardness-dependent metals. The proposed effluent limitations are protective of beneficial uses under all flow conditions.

(c) Using an ambient hardness that is higher than the minimum of 48 mg/L will result in limits that may allow increased metals to be discharged to the river, but such discharge is allowed under the antidegradation policy (State Water Board Resolution 68-16). The Central Valley Water Board finds that this degradation is consistent with the antidegradation policy (see antidegradation findings in Section IV.D.4 of the Fact Sheet). The Antidegradation policy requires the Discharger to meet waste discharge requirements, which will result in BPTC of the 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.

(d) Using the ambient hardness values shown in Table F-8 is consistent with the CTR and SIP's requirements for developing metals criteria.

TENTATIVE

Table F-8. Summary of CTR Criteria for Hardness-dependent Metals

CTR Metals	Ambient Hardness (mg/L)[2,3]	CTR Criteria (µg/L, total recoverable)[1]	
		Acute	Chronic
Copper	81	11	7.8
Chromium III	81	1,500	170
Cadmium	81	3.6	2.1
Lead	81	62	2.4
Nickel	81	390	44
Silver	81	2.8	--
Zinc	81	100	100

[1] Metal criteria rounded to two significant figures in accordance with the CTR (40 C.F.R. §131.38(b)(2)).
[2] The ambient hardness values in this table represent actual observed receiving water hardness measurements from the dataset shown in Figure F-1.
[3] The CTR's hardness dependent metals criteria equations vary differently depending on the metal, which results in differences in the range of ambient hardness values that may be used to develop effluent limitations that are protective of beneficial uses and comply with CTR criteria for all ambient flow conditions.

ii. **Background**

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 (Davis Order) and WQO 2004-0013 for the Yuba City Wastewater Treatment Plant (Yuba City Order). 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 so long as the selected value is protective of water quality criteria under the given flow conditions. (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, is as follows:

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

Where:

H = ambient hardness (as $CaCO_3$) [1]

WER = water-effect ratio

m, b = metal- and criterion-specific constants

The direction in the CTR regarding hardness selection is that it must be based on ambient hardness and consistent with design discharge conditions for design flows and mixing zones. Consistent with design discharge conditions and design flows means that the selected "design" hardness must result in effluent limitations under design discharge conditions that do not result in more

[1] For this discussion, all hardness values are expressed in mg/L as $CaCO_3$.

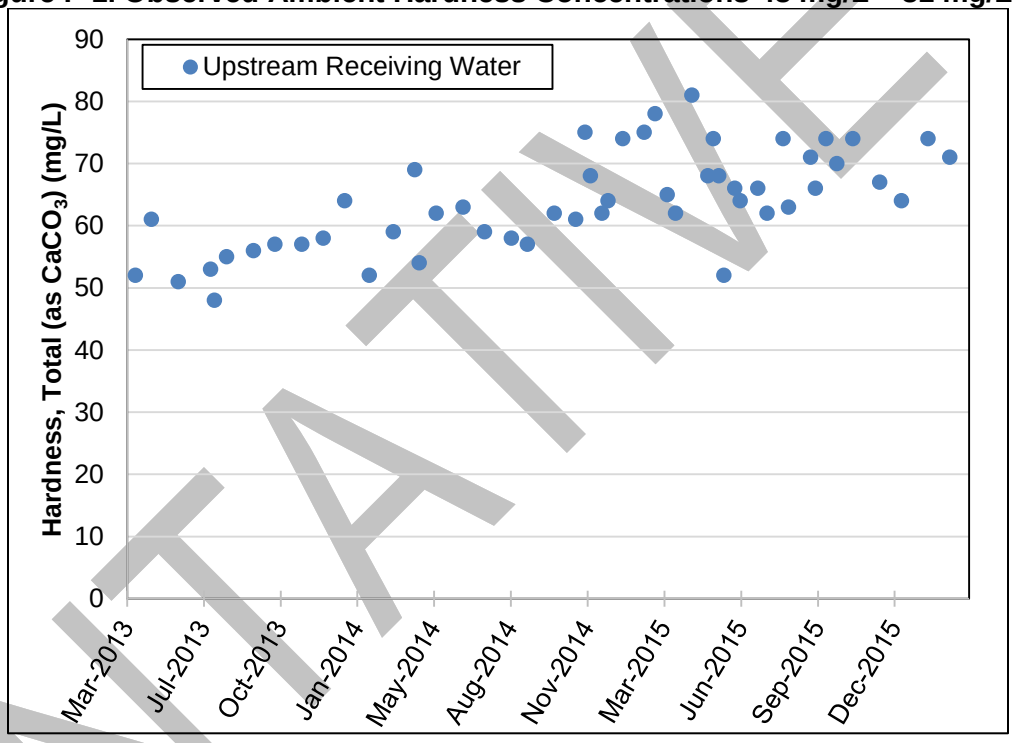
TENTATIVE

than one exceedance of the applicable criteria in a 3 year period.[1] Where design flows for aquatic life criteria include the lowest 1-day flow with an average reoccurrence frequency of once in 10 years (1Q10) and the lowest average seven consecutive day flow with an average reoccurrence frequency of once in 10 years (7Q10). The 1Q10 and 7Q10 Sacramento River flows are 3,730 cubic feet per second (cfs) and 3,764 cfs, respectively.

iii. **Ambient conditions**

The ambient receiving water hardness varied from 48 mg/L to 81 mg/L, based on 52 samples from April 2013 through March 2016 (see Figure F-1).

Figure F-1. Observed Ambient Hardness Concentrations 48 mg/L – 81 mg/L



In this analysis, the entire range of ambient hardness concentrations shown in Figure F-1 were considered to determine the appropriate ambient hardness to calculate the CTR criteria and effluent limitations that are protective under all discharge conditions.

iv. **Approach to Derivation of Criteria**

As shown above, ambient hardness varies substantially. Because of the variation, there is no single hardness value that describes the ambient receiving water for all possible scenarios (e.g., minimum, maximum, mid-point). While the hardness selected must be hardness of the ambient receiving water, selection of an ambient receiving water hardness that is too high would result in effluent limitations that do not protect beneficial uses. Also, the use of minimum ambient hardness would result in criteria that are protective of beneficial uses, but such criteria may not be representative considering the wide range of ambient conditions.

[1] 40 C.F.R. §131.38(c)(2)(iii) Table 4, notes 1 and 2

TENTATIVE

Reasonable worst-case ambient conditions. To determine whether a selected ambient hardness value results in effluent limitations that are fully protective while complying with federal regulations and state policy, staff have conducted an analysis considering varying ambient hardness and flow conditions. To do this, the Central Valley Water Board has ensured that the receiving water hardness and criteria selected for effluent limitations are protective under "reasonable-worst case ambient conditions." These conditions represent the receiving water conditions under which derived effluent limitations would ensure protection of beneficial uses under all ambient flow and hardness conditions.

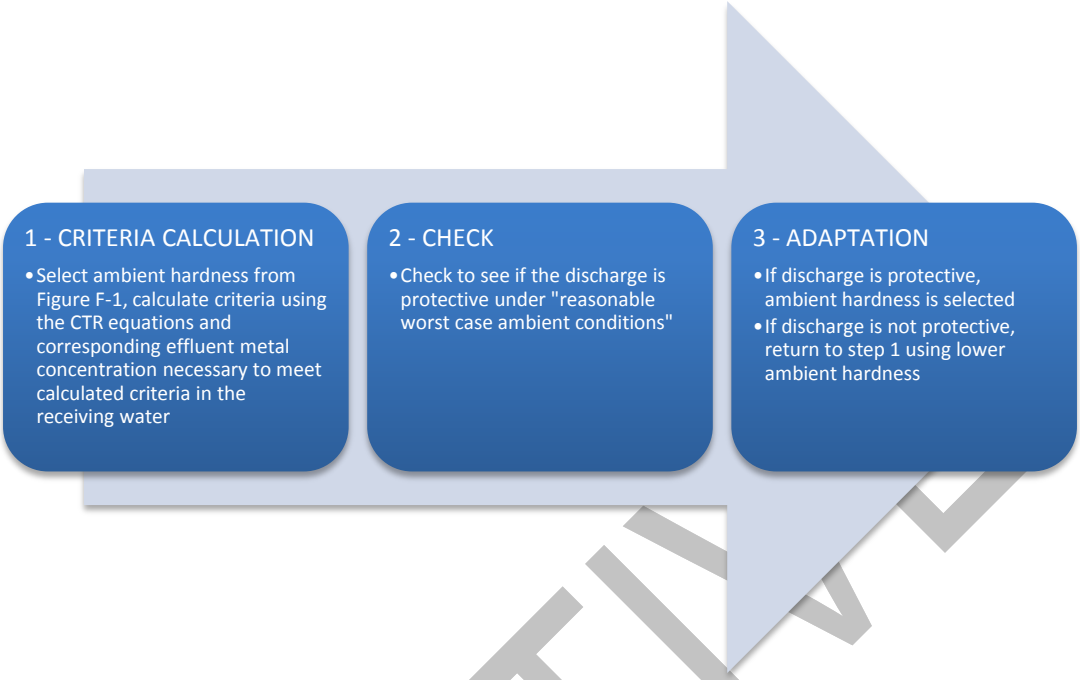
Reasonable worst-case ambient conditions:

- "Low receiving water flow." CTR design discharge conditions (1Q10 and 7Q10) have been selected to represent reasonable worst case receiving water flow conditions.
- "High receiving water flow (maximum receiving water flow)." This additional flow condition has been selected consistent with the Davis Order, which required that the hardness selected be protective of water quality criteria under all flow conditions.
- "Low receiving water hardness." The minimum receiving water hardness condition of 48 mg/L was selected to represent the reasonable worst case receiving water hardness.
- "Background ambient metal concentration at criteria." This condition assumes that the metal concentration in the background receiving water is equal to CTR criteria (upstream of the facility's discharge). Based on data in the record, this is a design condition that does not regularly occur in the receiving water and is used in this analysis to ensure that limits are protective of beneficial uses even in the situation where there is no assimilative capacity.

Iterative approach. An iterative analysis has been used to select the ambient hardness to calculate the criteria that will result in effluent limitations that protect beneficial uses under all flow conditions.

The iterative approach is summarized in the following algorithm and described below in more detail.

TENTATIVE



1. CRITERIA CALCULATION. CTR criteria are calculated using the CTR equations based on actual measured ambient hardness sample results, starting with the maximum observed ambient hardness of 81 mg/L. Effluent metal concentrations necessary to meet the above calculated CTR criteria in the receiving water are calculated in accordance with the SIP.[1] This should not be confused with an effluent limit. Rather, it is the Effluent Concentration Allowance (ECA), which is synonymous with the wasteload allocation defined by U.S. EPA as "*a definition of effluent water quality that is necessary to meet the water quality standards in the receiving water*."[2] If effluent limits are found to be needed, the limits are calculated to enforce the ECA considering effluent variability and the probability basis of the limit.
2. CHECK. U.S. EPA's simple mass balance equation[3] is used to evaluate if discharge at the computed ECA is protective. Resultant downstream metal concentrations are compared with downstream calculated CTR criteria under reasonable worst-case ambient conditions.
3. ADAPT. If step 2 results in:
   (A) receiving water metal concentration that complies with CTR criteria under reasonable worst-case ambient conditions, then the hardness value is selected.
   (B) receiving water metal concentration greater than CTR criteria, then return to bullet 1, selecting a lower ambient hardness value.

[1] SIP Section 1.4.B, Step 2, provides direction for calculating the Effluent Concentration Allowance.
[2] U.S. EPA Technical Support Document for Water Quality-based Toxics Control (TSD), pg. 96.
[3] U.S. EPA NPDES Permit Writers' Handbook (EPA 833-K-10-001 September 2010, pg. 6-24)

TENTATIVE

The CTR's hardness dependent metals criteria equations contain metal-specific constants, so the criteria vary depending on the metal. Therefore, steps 1 through 3 must be repeated separately for each metal until ambient hardness values are determined that will result in criteria and effluent limitations that comply with the CTR and protect beneficial uses for all metals.

v. **Results of Iterative Analysis**

The above iterative analysis for each CTR hardness-dependent metal results in the selected ambient hardness values shown in Table F-8, above. Using these hardness values to calculate criteria, which are actual sample results collected in the receiving water, will result in effluent limitations that are protective under all ambient flow conditions. Copper and silver are used as examples below to illustrate the results of the analysis. Tables F-9 and F-10 below summarize the numeric results of the three step iterative approach for copper and silver. As shown in the example tables, ambient hardness values of 81 mg/L (copper) and 81 mg/L (silver) are used in the CTR equations to derive criteria and effluent limitations. Then under the "check" step, worst-case ambient receiving water conditions are used to test whether discharge results in compliance with CTR criteria and protection of beneficial uses.

The results of the above analysis, summarized in the tables below, show that the ambient hardness values selected using the three-step iterative process results in protective effluent limitations that achieve CTR criteria under all flow conditions. Tables F-9 and F-10 below, summarize the critical flow conditions. However, the analysis evaluated all flow conditions to ensure compliance with the CTR criteria at all times.

Table F-9. Verification of CTR Compliance for Copper

Receiving water hardness used to compute effluent limitations				**81 mg/L**
Effluent Concentration Allowance (ECA) for Copper[2]				**7.8 µg/L**
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			
	Hardness	**CTR Criteria (µg/L)**	**Ambient Copper Concentration[1] (µg/L)**	**Complies with CTR Criteria?**
1Q10	48	5.0	5.0	**Yes**
7Q10	48	5.0	5.0	**Yes**
Max receiving water flow	48	5.0	5.0	**Yes**

[1] This concentration is derived using worst-case ambient conditions. These conservative assumptions will ensure that the receiving water always complies with CTR criteria.

[2] The ECA defines effluent quality necessary to meet the CTR criteria in the receiving water. This Order includes average monthly and maximum daily effluent limits for copper of 7.1 µg/L and 10 µg/L, respectively. The effluent limits were calculated per section 1.4 of the SIP, which ensures compliance with the ECA considering effluent variability and the probability basis of each effluent limit.

TENTATIVE

Table F-10. Verification of CTR Compliance for Silver

Receiving water hardness used to compute effluent limitations				81 mg/L
Effluent Concentration Allowance (ECA) for Silver[2]				2.8 µg/L
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			
	Hardness	CTR Criteria (µg/L)	Ambient Silver Concentration[1] (µg/L)	Complies with CTR Criteria?
1Q10	48	1.2	1.2	**Yes**
7Q10	48	1.2	1.2	**Yes**
Max receiving water flow	48	1.1	1.1	**Yes**

[1] This concentration is derived using worst-case ambient conditions. These conservative assumptions will ensure that the receiving water always complies with CTR criteria.
[2] The ECA defines effluent quality necessary to meet the CTR criteria in the receiving water. There is no effluent limitation for silver as it demonstrates no reasonable potential.

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. **Salinity**

(a) **WQO.** The Basin Plan contains a chemical constituent objective that incorporates state MCL's, 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

TENTATIVE

the narrative objective will be reviewed by and consistent with the efforts currently underway by CV-SALTS.

Table F-11. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Objective[1]	Secondary MCL[2]	U.S. EPA NAWQC	Effluent	
				Average[3]	Maximum
EC (µmhos/cm)	Varies[2]	900, 1600, 2200	N/A	347	548
TDS (mg/L)	Varies	500, 1000, 1500	N/A	209	309
Sulfate (mg/L)	Varies	250, 500, 600	N/A	<1	<1
Chloride (mg/L)	Varies	250, 500, 600	860 1-hr 230 4-day	16.8	16.8

1 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.

2 The Secondary MCL's are stated as a recommended level, upper level, and a short-term maximum level.

3 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.

(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. The Basin Plan contains a site-specific receiving water electrical conductivity limit not to exceed 230 µmhos/cm (50 percentile) or 235 µmhos/cm (90 percentile) in the Sacramento River (at Knights Landing above Colusa Basin Drain), based upon the previous 10 years of record. Knights Landing is located approximately 153 miles downstream of the discharge location.

(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.

(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.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Chloride, electrical conductivity, sulfate, and total dissolved solids are not priority pollutants. 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 these non-priority pollutant constituents. For conducting the RPA, the U.S. EPA recommends using a mass-balance

TENTATIVE

approach to determine the expected critical downstream receiving water concentration using a steady-state approach[1]. This downstream receiving water concentration is then compared to the applicable water quality objectives to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion. This approach allows assimilative capacity and dilution to be factored into the RPA. This U.S. EPA recommended approach has been used for chloride, electrical conductivity, sulfate, and total dissolved solids. The critical downstream receiving water concentration is calculated using equation 2 below:

$$C_r = \frac{Q_s C_s + Q_d C_d}{Q_s + Q_d} \quad \text{(Equation 2)}$$

Where:

Q_s = Critical stream flow

Q_d = Critical effluent flow from discharge flow data

C_s = Critical upstream pollutant concentration

C_d = Critical effluent pollutant concentration

C_r = Critical downstream receiving water pollutant concentration

The most stringent water quality objective for chloride is the NAWQC chronic criterion for protection of freshwater aquatic life. Therefore, for chloride, a critical stream flow (Qs) of 2,433 MGD (7Q10) was used, which represents the 7Q10, and a critical effluent flow (Qd) of 2.7 MGD (permitted maximum daily flow) was used for the RPA. The Basin Plan objective for electrical conductivity and the Secondary MCL for total dissolved solids are long-term objectives. Therefore, a critical stream flow (Qs) of 4,992 MGD (harmonic mean) and a critical effluent flow (Qd) of 2.7 MGD (permitted maximum daily flow) were used for electrical conductivity and total dissolved solids. Additionally, maximum observed annual average effluent and receiving water concentrations were used to represent the critical effluent pollutant concentration (C_d) and critical upstream receiving water pollutant concentrations (C_r), respectively, for electrical conductivity and total dissolved solids.

(1) **Chloride.** Chloride concentrations in the effluent ranged from 6.59 mg/L to 16.8 mg/L, with a maximum annual average of 16.8 mg/L, based on two samples collected between April 2013 and March 2016. Background concentrations in the Sacramento River ranged from 2.07 mg/L to 4.02 mg/L, with a maximum annual average of 4.02 mg/L, based on two samples collected between April 2013 and March 2016. Thus, the receiving water has been consistently in compliance with the NAWQC resulting in available assimilative capacity for consideration in the RPA.

[1] U.S. EPA NPDES Permit Writers' Handbook (EPA 833-K-10-001 September 2010)

TENTATIVE

Q_s = 2,433 MGD

Q_d = 2.7 MGD

C_s = 4.02 mg/L

C_d = 16.8 mg/L

$$C_r = \frac{\left(2{,}433\ MGD \times 4.02\frac{mg}{L}\right) + \left(2.7\ MGD \times 16.8\frac{mg}{L}\right)}{(2{,}433\ MGD + 2.7\ MGD)}$$

$$= 4.03\ mg/L$$

The critical downstream receiving water chloride concentration, C_r, is 4.03 mg/L, which does not exceed the NAWQC of 230 mg/L. Considering the large dilution and assimilative capacity in the receiving water, the small increase in chloride caused by the discharge does not result in a reasonable potential to cause or contribute to an exceedance of the objectives for chloride in the receiving water.

(2) **Electrical Conductivity.** Electrical conductivity concentrations in the effluent ranged from 225 µmhos/cm to 548 µmhos/cm, with a maximum annual average of 347 µmhos/cm, based on 159 samples collected between April 2013 and March 2016. Background concentrations in the Sacramento River ranged from 88 µmhos/cm to 174 µmhos/cm, with a maximum annual average of 141 µmhos/cm, based on 160 samples collected between April 2013 and March 2016. Thus, the receiving water has been consistently in compliance with the Basin Plan objective resulting in available assimilative capacity for consideration in the RPA.

Q_s = 4,992 MGD

Q_d = 2.7 MGD

C_s = 141 µmhos/cm

C_d = 347 µmhos/cm

$$C_r = \frac{\left(4{,}992\ MGD \times 141\ \mu\frac{mhos}{cm}\right) + \left(2.7\ MGD \times 347\ \mu\frac{mhos}{cm}\right)}{(4{,}992\ MGD + 2.7\ MGD)}$$

$$= 141\ \mu mhos/cm$$

The critical downstream receiving water electrical conductivity concentration, C_r, is 141 µmhos/cm, which does not exceed the Basin Plan objective of 230 µmhos/cm. Considering the large dilution and assimilative capacity in the receiving water, the small increase in electrical conductivity caused by the discharge does not result in a reasonable potential to cause or contribute to an exceedance of the objectives for electrical conductivity in the receiving water.

(3) **Sulfate.** Sulfate was not detected in the effluent or upstream receiving water based on two samples collected between April 2013 and March 2016. Therefore, the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the objectives for sulfate in the receiving water.

TENTATIVE

(4) **Total Dissolved Solids.** Total dissolved solids concentrations in the effluent ranged from 157 mg/L to 309 mg/L, with a maximum annual average of 209 mg/L, based on 39 samples collected between April 2013 and March 2016. Background concentrations in the Sacramento River ranged from 83 mg/L to 85 mg/L, with a maximum annual average of 85 mg/L, based on two samples collected between April 2013 and March 2016. Thus, the receiving water has been consistently in compliance with the Secondary MCL resulting in available assimilative capacity for consideration in the RPA.

Q_s = 4,992 MGD

Q_d = 2.7 MGD

C_s = 85 mg/L

C_d = 209 mg/L

$$C_r = \frac{(4{,}992\ MGD \times 85\ \text{mg/L}) + (2.7\ MGD \times 209\ \text{mg/L})}{(4{,}992\ MGD + 2.7\ MGD)} = 85\ mg/L$$

The critical downstream receiving water total dissolved solids concentration, C_r, is 85 mg/L, which does not exceed the Secondary MCL of 500 mg/L. Considering the large dilution and assimilative capacity in the receiving water, the small increase in total dissolved solids caused by the discharge does not result in a reasonable potential to cause or contribute to an exceedance of the objectives for total dissolved solids in the receiving water.

Based on the relatively low reported salinity, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, since the Discharger discharges to the Sacramento River and eventually the Sacramento-San Joaquin Delta, of additional concern is the salt contribution to Delta waters. Allowing the Discharger to increase its current salt loading may be contrary to the Region-wide effort to address salinity in the Central Valley. Therefore, in order to ensure that the Discharger will continue to control the discharge of salinity, this Order includes a requirement to update and continue to implement a salinity evaluation and minimization plan.

ii. **Zinc**

(a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. These criteria for zinc 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 translators 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 zinc in the effluent are 100 µg/L and 100 µg/L, respectively, as total recoverable.

The Basin Plan includes a hardness-dependent water quality objective for dissolved zinc for the Sacramento River and its tributaries above the State Highway 32 bridge at Hamilton City, which is applicable to the receiving water. Using the default U.S. EPA acute translator and a hardness of

TENTATIVE

81 mg/L (as $CaCO_3$), the applicable Basin Plan objective for zinc is 29 µg/L.

Order R5-2011-0036 included effluent limitations for zinc based on the Basin Plan objective.

(b) **RPA Results.** The maximum effluent concentration (MEC) for zinc was 14.2 µg/L (as total recoverable) based on 63 samples collected between April 2013 and March 2016. The maximum observed upstream receiving water concentration was 24 µg/L (as total recoverable) based on 74 samples collected between April 2013 and March 2016. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for zinc, and the effluent limitations for zinc have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

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 copper, diazinon and chlorpyrifos, mercury, pH, 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. **Copper**

(a) **WQO.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. These criteria for copper 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 translators 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 copper in the effluent are 11 µg/L and 7.8 µg/L, respectively, as total recoverable.

The Basin Plan includes a hardness-dependent water quality objective for dissolved copper for the Sacramento River and its tributaries above the State Highway 32 bridge at Hamilton City, which is applicable to the receiving water. Using the default U.S. EPA acute translator and a hardness of 81 mg/L (as $CaCO_3$), the applicable Basin Plan objective for copper is 11 µg/L.

(b) **RPA Results.** The MEC for copper was 5.2 µg/L (as total recoverable) based on 62 samples collected between April 2013 and March 2016. The maximum observed upstream receiving water concentration was 14.3 µg/L (as total recoverable) based on 73 samples collected between April 2013 and March 2016. Because the upstream receiving water copper concentration exceeds the CTR aquatic life criterion and Basin Plan objective and copper was detected in the effluent, copper in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for the protection of freshwater aquatic life and the Basin Plan objective.

TENTATIVE

(c) **WQBEL's.** This Order contains a final average monthly effluent limitation (AMEL) and maximum daily effluent limitation (MDEL) for copper of 7.1 µg/L and 10 µg/L, respectively, based on the CTR criterion for the protection of freshwater aquatic life.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 5.2 µg/L is less than the applicable WQBEL's. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

ii. **Diazinon and Chlorpyrifos**

(a) **WQO.** The Central Valley Water Board has completed a TMDL for diazinon and chlorpyrifos in the Sacramento and Feather Rivers and amended the Basin Plan to include diazinon and chlorpyrifos waste load allocations and water quality objectives. The Basin Plan Amendment for the Control of Diazinon and Chlorpyrifos was adopted by the Central Valley Water Board on 21 October 2005 and was approved by the State Water Board on 2 May 2006. The Basin Plan amendment was approved by the Office of Administrative Law on 30 June 2006 and is now State law. The amendment was approved by U.S. EPA and went into effect on 20 December 2006.

The amendment modifies the Basin Plan Chapter III (Water Quality Objectives) to establish site specific numeric objectives for chlorpyrifos and diazinon in the Sacramento and Feather Rivers. The amendment also "*…identifies the requirements to meet the additive formula already in Basin Plan Chapter IV (implementation), for the additive toxicity of diazinon and chlorpyrifos*."

The amendment provides that: "*The Waste Load Allocations (WLA) for all NPDES-permitted dischargers… shall not exceed the sum (S) of one (1) as defined below.*

$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$

where:

C_D = diazinon concentration in µg/L of the point source discharge…

C_C = chlorpyrifos concentration in µg/L of the point source discharge…

WQO_D = acute or chronic diazinon water quality objective in µg/L.

WQO_C = acute or chronic chlorpyrifos water quality objective in µg/L.

Available samples collected within the applicable averaging period for the water quality objective will be used to determine compliance with the allocations and loading capacity. For purposes of calculating the sum (S) above, analytical results that are reported as 'non detectable' concentrations are considered to be zero."

(b) **RPA Results.** Diazinon and chlorpyrifos were not detected in the effluent based on two samples collected between April 2013 and March 2016. Diazinon and chlorpyrifos were not detected in the upstream receiving water based on two samples collected between April 2013 and March 2016. However, due to the TMDL for diazinon and chlorpyrifos in

TENTATIVE

the Sacramento River, WQBEL's for these constituents are required. The TMDL waste load allocation applies to all NPDES dischargers to the Sacramento and Feather Rivers and will serve as the basis for WQBEL's.

(c) **WQBEL's.** WQBEL's for diazinon and chlorpyrifos are required based on the TMDL for diazinon and chlorpyrifos for the Sacramento River. Therefore, this Order includes effluent limits calculated based on the waste load allocations contained in the TMDL, as follows:

(1) Average Monthly Effluent Limitation (AMEL)

$$S_{AMEL} = \frac{C_{D\ AVG}}{0.079} + \frac{C_{C\ AVG}}{0.012} \leq 1.0$$

$C_{D\text{-}avg}$ = average monthly diazinon effluent concentration in µg/L

$C_{C\text{-}avg}$ = average monthly chlorpyrifos effluent concentration in µg/L

(2) Average Weekly Effluent Limitation (AWEL)

$$S_{AWEL} = \frac{C_{D\ AVG}}{0.14} + \frac{C_{C\ AVG}}{0.021} \leq 1.0$$

$C_{D\text{-}avg}$ = average weekly diazinon effluent concentration in µg/L

$C_{C\text{-}avg}$ = average weekly chlorpyrifos effluent concentration in µg/L

(d) **Plant Performance and Attainability.** Diazinon and chlorpyrifos were not detected in the effluent. It is unlikely that chlorpyrifos and diazinon will be detected at concentrations exceeding applicable water quality objectives as sales of all non-agricultural uses of diazinon were banned on 31 December 2004 and sales of the majority of non-agricultural uses of chlorpyrifos were banned in December 2001. The Discharger does not add chlorpyrifos or diazinon to the treatment process.

iii. **Mercury**

(a) **WQO.** The current NAWQC for protection of freshwater aquatic life, continuous concentration, for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion (based on a threshold dose level causing neurological effects in infants) of 0.050 µg/L for waters from which both water and aquatic organisms are consumed. Both values are controversial and subject to change. In 40 C.F.R. part 131, U.S. EPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that "…*more stringent mercury limits may be determined and implemented through use of the State's narrative criterion.*" In the CTR, U.S. EPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

(b) **RPA Results.** The MEC for mercury was 0.00111 µg/L based on 41 samples collected between April 2013 and March 2016. The maximum observed upstream receiving water concentration of mercury was 0.00103 µg/L based on two samples collected between April 2013 and March 2016. Mercury bioaccumulates in fish tissue and, therefore, the discharge of mercury to the receiving water may contribute to exceedances of the narrative toxicity objective and impact beneficial uses. The Sacramento River has been listed as an impaired water body pursuant to CWA section 303(d) because of mercury and the discharge must not cause or contribute to increased mercury levels. Additionally,

TENTATIVE

the discharge of mercury to surface waters in the Central Valley draining to the Sacramento San Joaquin Delta are being limited in order to protect the beneficial uses of the Delta.

(c) **WQBEL's.** Order R5-2011-0036 contained an annual mercury mass-loading effluent limitation of 0.0065 lbs/year based on the 303(d) listing of the Sacramento River. The mass-loading effluent limitation of 0.0065 lbs/year is retained in this Order. This limitation ensures the mercury loading is maintained at the current level until a TMDL can be established and U.S. EPA develops mercury standards that are protective of human health and is not less stringent than the previous limit. If U.S. EPA develops new water quality standards for mercury, this permit may be reopened and the effluent limitations adjusted.

(d) **Plant Performance and Attainability.** The maximum observed annual mercury loading was 0.0019 lbs/year, which is less than the applicable effluent limitation. The Central Valley Water Board concludes, therefore, that immediate compliance with this effluent limitation is feasible.

iv. **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.** Process wastewater and non-contact cooling and sealing water inherently has variable pH. Additionally, some wastewater treatment processes can increase or decrease wastewater pH which if not properly controlled, would violate the Basin Plan's numeric objective for pH in the receiving water. Therefore, reasonable potential exists for pH and WQBEL's are required.

Federal regulations at 40 C.F.R. section 122.44(d)(1)(i) require 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. pH 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 professional 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

TENTATIVE

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*." (TSD, p. 50)

The Facility is a molded pulp mill that produces process wastewater and non-contact cooling and sealing water. Based on 159 samples collected between April 2013 and March 2016, the maximum pH reported was 8.4 and the minimum was 6.8. The pH for the Facility's effluent varies due to the nature of process wastewater and non-contact cooling and sealing water, which provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's numeric objective for pH in the receiving water. Therefore, WQBEL's for pH are required in this Order.

(c) **WQBEL's.** Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.5 as an instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH.

(d) **Plant Performance and Attainability.** The effluent pH was within the instantaneous minimum and maximum effluent limitations based on 159 samples. The Central Valley Water Board concludes, therefore, that immediate compliance with this effluent limitation is feasible.

v. **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 process wastewater and non-contact cooling and sealing water has a reasonable potential to cause or contribute to an excursion above the Basin Plan's narrative objective for settleable solids.

(c) **WQBEL's.** This Order contains average monthly and average daily effluent limitations 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 once in the effluent at a concentration of 0.1 ml/L based on 157 samples collected between April 2013 and March 2014. The Central Valley Water Board concludes, therefore, that immediate compliance with this effluent limitation is feasible.

4. WQBEL Calculations

a. This Order includes WQBEL's for copper, diazinon and chlorpyrifos, mercury, 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.

TENTATIVE

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) *where C>B, and*
ECA = C *where C≤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 ECA's 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 $LTA_{chronic}$

TENTATIVE

Summary of Water Quality-Based Effluent Limitations
Discharge Point 001

Table F-12. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations					
		Average Weekly	Average Monthly	Maximum Daily	Maximum Yearly	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants							
pH	standard units	--	--	--	--	6.5	8.5
Priority Pollutants							
Copper, Total Recoverable	µg/L	--	7.1	10	--	--	--
Mercury, Total Recoverable	lbs/year	--	--	--	0.0065[1]	--	--
Non-Conventional Pollutants							
Diazinon and Chlorpyrifos	µg/L	[2]	[3]	--	--	--	--
Settleable Solids	mL/L	--	0.1	0.2	--	--	--

[1] For a calendar year, the total annual mass discharge of total mercury shall not exceed 0.0065 lbs.

[2] Maximum Daily Effluent Limitation

$$S_{AWEL} = \frac{C_{D\ avg}}{0.14} + \frac{C_{C\ avg}}{0.021} \leq 1.0$$

$C_{D\ avg}$ = average weekly diazinon effluent concentration in µg/L.
$C_{C\ avg}$ = average weekly chlorpyrifos effluent concentration in µg/L.

[3] Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D\ avg}}{0.079} + \frac{C_{C\ avg}}{0.012} \leq 1.0$$

$C_{D\ avg}$ = average monthly diazinon effluent concentration in µg/L.
$C_{C\ avg}$ = average monthly chlorpyrifos effluent concentration in µg/L.

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 best management practices 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…*".

TENTATIVE

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).*" Although the discharge has been consistently in compliance with the acute effluent limitations, the Facility discharges process wastewater and cooling and sealing water containing metals and other acutely toxic pollutants. 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* [chronic toxicity unit] *TUc.*" Consistent with Order R5-2011-0036, 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.) As shown in the table below, based on chronic WET testing performed by the Discharger during the term of Order R5-2011-0036, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

TENTATIVE

Table F-13. Whole Effluent Chronic Toxicity Testing Results

Date	Fathead Minnow *Pimephales promelas*		Water Flea *Ceriodaphnia dubia*		Green Algae *Selenastrum capricornutum*
	Survival (TUc)	Growth (TUc)	Survival (TUc)	Reproduction (TUc)	Growth (TUc)
2011	1	1	1	1	1
2012	1	1	1	1	1
2013	1	1	1	1	1
2014	1	1	1	1	1
2015	1	1	1	1	1

The Monitoring and Reporting Program of this Order requires chronic WET monitoring once during the term of this Order 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[1] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, "*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 best management practices 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

[1] 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)

TENTATIVE

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.

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 includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CF.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.

Mass-based effluent limitations for BOD_5 and TSS were calculated by multiplying the applicable ELG's from 40 C.F.R. part 430, subpart J, which are expressed in terms of pounds per 1,000 pounds of product, by the Facility's level of production of 60,000 pounds per day.

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. The rationale for using alternative averaging periods for pH and mercury 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 zinc. The effluent limitations for zinc are less stringent than those in Order R5-2011-0036. 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 water quality-based effluent limits "*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 WLAs will assure the attainment of such water quality standards.

TENTATIVE

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 Sacramento River is considered an attainment water for zinc because the receiving water is not listed as impaired on the 303(d) list for this constituent.[1] As discussed in section IV.D.4, below, removal of the effluent limits complies with federal and state antidegradation requirements. Thus, removal of the effluent limitations for zinc from Order R5-2011-0036 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.a of this Fact Sheet, updated information that was not available at the time Order R5-2011-0036 was issued indicates that zinc does not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. The updated information that supports the relaxation of effluent limitations for these constituents includes effluent and receiving water monitoring data collected between April 2013 and March 2016 for zinc that indicates that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR aquatic life criteria or the Basin Plan objective.

Thus, removal of the effluent limitations for zinc from Order R5-2011-0036 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 zinc based on updated information, as described further in sections IV.C.3.a and IV.D.3 of this Fact Sheet. The removal of WQBEL's for zinc will not result in a decrease in the level of treatment or control or a reduction of water quality. Therefore, the Central Valley Water Board finds that the relaxation of the effluent limitations does not result in an allowed increase in pollutants or any additional degradation of the receiving water. Thus, the relaxation

[1] "*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.

TENTATIVE

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 two settling basins (Ponds 4A and 4B) and an aeration basin (4C). Process wastewater from the molded pulp process contains constituents such as total dissolved solids, electrical conductivity, general minerals, and oxygen demanding substances such as BOD and chemical oxygen demand (COD). Percolation from the settling basins and aeration basin may result in an increase in the concentration of these constituents in groundwater. The State Anti-Degradation Policy generally prohibits the Central Valley Water Board from authorizing activities that will result in the degradation of high-quality waters unless it has been shown that:

i. The degradation will not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives;

ii. The degradation will not unreasonably affect present and anticipated future beneficial uses;

iii. The discharger will employ Best Practicable Treatment or Control (BPTC) to minimize degradation; and

iv. The degradation is consistent with the maximum benefit to the people of the state.

Some degradation of groundwater may be consistent with the State Anti-Degradation Policy if the Discharger is implementing best practicable treatment or control (BPTC) measures. Order R5-2004-0124 included groundwater limitations, and required the Discharger to submit a Process Wastewater Evaluation and Treatment Report identifying BPTC to prevent infiltration to groundwater from the treatment ponds. The Discharger submitted a *Process Wastewater Evaluation and Treatment Report for Pactiv Corporation's Molded Fiber Plant, Red Bluff, California* (Pactiv Corporation) in September 2006 that outlined several projects to provide BPTC, including the Duplex Clean Water Sump project and the Groundwood Cleaners project. The Duplex Clean Water Sump project decreased the volume of water treated by the wastewater treatment system by approximately 65 percent. The Groundwood Cleaners project was put in place to reuse fiber that was previously directed to the wastewater treatment system and reduced the average solids loading to the wastewater treatment system from 2,600 lbs/day to less than 500 lbs/day. The Discharger's treatment constitutes best practicable treatment or control and complies with the State Anti-Degradation Policy.

The Discharger completed modification to Pond 4 and discontinued the use of Ponds 1 through 3 and the aeration stabilization basin in 2013. Based on groundwater monitoring conducted since 2013, increases in concentrations of electrical conductivity and total coliform organisms in down gradient wells have been observed. However, since 2013, several environmental conditions have resulted in a change in aquifer dynamics, including: (1) movement of the pond treatment system to the current location in May 2013 and (2) gates at the Red Bluff Diversion Dam were permanently raised in 2013, which influenced the direction and magnitude of groundwater flow. The limited degradation that may occur under this Order inheres to the maximum benefit of the people of the State because it will occur due to the operation of an industrial facility that is a sizeable employer for the region.

TENTATIVE

This Order requires the Discharger to conduct groundwater monitoring in order to ensure groundwater limitations are not exceeded. Groundwater limitations have been included in this order (at or below) the water quality objective for protection of the domestic or municipal supply (MUN) beneficial use of groundwater.

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, BOD_5, and TSS. Restrictions on these pollutants are discussed in section IV.B of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. These limitations are not more stringent than required by the CWA.

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 water quality-based effluent limitations 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-14. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations						Basis[1]
		Average Weekly	Average Monthly	Maximum Daily	Maximum Yearly	Instantaneous Minimum	Instantaneous Maximum	
Flow	MGD	--	--	2.7	--	--	--	DC
Conventional Pollutants								
Biochemical Oxygen Demand (5-Day @ 20°C)	mg/L[2]	--	--	11.4	--	--	--	ELG
	lbs/day	--	138	264	--	--	--	
pH	standard units	--	--	--	--	6.5	8.5	BP
Total Suspended Solids	mg/L[2]	--	--	28.5	--	--	--	ELG
	lbs/day	--	348	648	--	--	--	
Priority Pollutants								
Copper, Total Recoverable	µg/L	--	7.1	10	--	--	--	CTR, BP
Mercury, Total Recoverable	lbs/year	--	--	--	0.0065[3]	--	--	PB
Non-Conventional Pollutants								
Diazinon and Chlorpyrifos	µg/L	[4]	[5]	--	--	--	--	TMDL

TENTATIVE

Settleable Solids	mL/L	--	0.1	0.2	--	--	--	BP

[1] DC – Based on the design capacity of the Facility.
ELG – Based on Effluent Limitations Guidelines and Standards established at 40 C.F.R. part 430, subpart J for the Secondary Fiber Non-Deink Subcategory of the Pulp, Paper, and Paperboard Point Source Category.
BP – Based on water quality objectives contained in the Basin Plan.
CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
PB – Based on Facility performance.
TMDL – Based on the TMDL for the Sacramento and Feather Rivers.

[2] Concentration-based effluent limitations based on a maximum capacity of 2.7 MGD.

[3] For a calendar year, the total annual mass discharge of total mercury shall not exceed 0.0065 lbs.

[4] Average Weekly Effluent Limitation

$$S_{AWEL} = \frac{C_{D\,avg}}{0.14} + \frac{C_{C\,avg}}{0.021} \leq 1.0$$

$C_{D\,avg}$ = average weekly diazinon effluent concentration in µg/L.
$C_{C\,avg}$ = average weekly chlorpyrifos effluent concentration in µg/L.

[5] Average Monthly Effluent Limitation

$$S_{AMEL} = \frac{C_{D\,avg}}{0.079} + \frac{C_{C\,avg}}{0.012} \leq 1.0$$

$C_{D\,avg}$ = average monthly diazinon effluent concentration in µg/L.
$C_{C\,avg}$ = average monthly chlorpyrifos effluent concentration in µg/L.

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. **Dissolved Oxygen.** Table III-2 of the Basin Plan includes specific dissolved oxygen water quality objectives for the Sacramento River from Keswick Dam to Hamilton City which are applicable to the discharge and requires that dissolved oxygen concentrations not be reduced below 9 mg/L between 1 June and 31 August. When natural conditions lower dissolved oxygen below this level, concentrations shall be maintained at or above 95 percent of saturation. This Order requires receiving water limitations based on the water quality objectives in Table III-2 of the Basin Plan which are applicable from 1 June to 31 August. This Order also includes water quality objectives applicable to surface waters outside the legal boundaries of the Delta applicable from 1 September to 31 May.

   b. **Temperature.** The Basin Plan requires that the temperature of COLD or WARM intrastate waters shall not be increased more than 5°F above natural receiving water temperature. Table III-4 of the Basin Plan includes specific temperature water quality objectives for the Sacramento River from Keswick Dam to Hamilton City which are applicable to the discharge and requires that the temperature not be elevated above 56°F during periods when temperature increases will be detrimental to the fishery. The Basin Plan specifies that the more stringent objective shall apply

TENTATIVE

to the extent of any conflict with these objectives. Consistent with the Basin Plan and Order No. R5-2004-0124, this Order requires that the discharge shall not cause the normal ambient temperature to be increased more than 5°F, or higher than 56°F when such an increase will be detrimental to the fishery, whichever is more restrictive.

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 MCL's 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

TENTATIVE

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 when developing effluent limitations for copper. The Discharger is conducting a site-specific translator study for copper and zinc. 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 applicable effluent limitations.

d. **Dilution Credits/Mixing Zones.** If the Discharger conducts a dilution/mixing zone study demonstrating that dilution credits and mixing zones for human health and/or aquatic life criteria comply with the requirements of Section 1.4.2 of the SIP, this Order may be reopened to adjust effluent limitations based on allowable dilution credits/mixing zones.

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.) Based on whole effluent chronic toxicity testing performed by the Discharger during the term of Order R5-2011-0036, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, this provision includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation if toxicity is demonstrated.

Monitoring Trigger. A numeric toxicity monitoring trigger of **> 1** chronic toxicity unit (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.

TENTATIVE

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-2), 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.

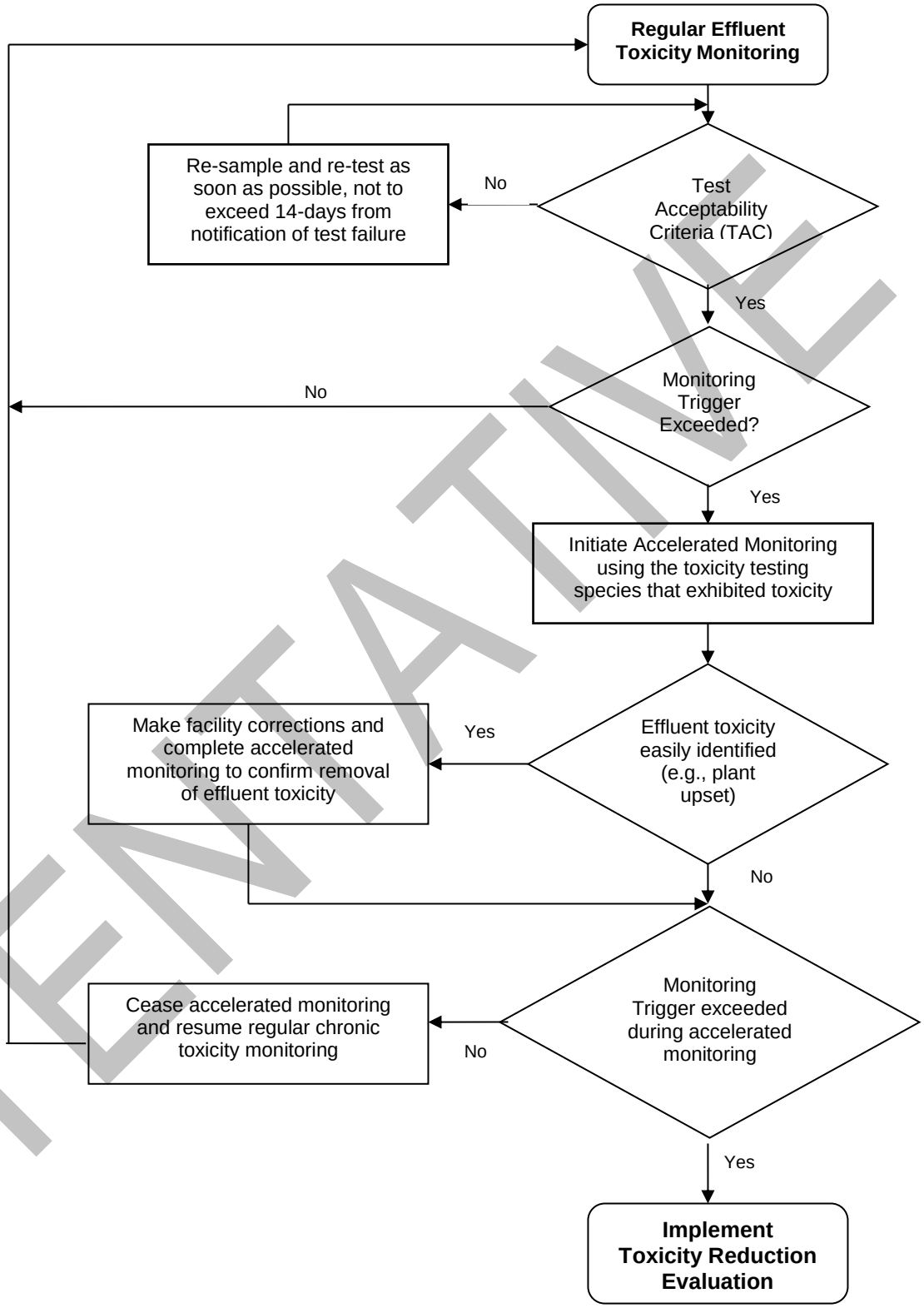
vii. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition*, EPA-821-R-02-012, October 2002.

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.

TENTATIVE

Figure F-2
WET Accelerated Monitoring Flow Chart



TENTATIVE

3. Best Management Practices and Pollution Prevention

a. **Salinity Evaluation and Minimization Plan.** An Evaluation and Minimization Plan for salinity is required to be maintained in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to the Sacramento River.

4. Construction, Operation, and Maintenance Specifications

a. **Treatment Pond Operating Requirements.** The operation and maintenance specifications for the settling basins and aeration basin are necessary to protect the beneficial uses of the groundwater. The specifications included in this Order are retained from Order R5-2011-0036. In addition, reporting requirements related to use of the settling basins and aeration basin are required to monitor their use and the potential impact on groundwater.

5. Compliance Schedules

a. **Compliance Schedule for Receiving Water Limitation for Temperature.** Table III-4 of the Basin Plan includes specific temperature water quality objectives for the Sacramento River from Keswick Dam to Hamilton City, which are applicable to the discharge, and requires that the temperature not be elevated above 56°F during periods when temperature increases will be detrimental to the fishery. This Order requires that the discharge shall not cause the normal ambient temperature to be higher than 56°F when such an increase will be detrimental to the fishery.

The temperature of the Sacramento River typically exceeds the Basin Plan objective of 56°F during the summer months. Effluent temperatures ranged from 50°F to 98°F between April 2013 and June 2016 and can be significantly higher than receiving water temperatures at times when no assimilative capacity is available (i.e., when upstream receiving water temperatures are greater than 56°F). The Sacramento River, downstream of Discharge Point 001, is an important migratory corridor for California Endangered Species Act and Federal Endangered Species Act listed adult and juvenile salmonids including: winter and spring-run Chinook salmon (*O. tshawytscha*) and Central Valley steelhead (*O. mykiss*). It is also a spawning and migratory area for fall and late fall-run Chinook salmon (*O. tshawytscha*), as well as home to numerous other native and non-native fish species. Listed species are actively migrating, spawning, and/or rearing in all months of the year in this area of the Sacramento River. Compliance with the Basin Plan objective is necessary to protect these sensitive aquatic life species. Therefore, this Order includes a compliance schedule requiring the Discharger to conduct a temperature study to collect sufficient information to quantify impact from thermal discharge and determine the level of improvement needed in order to meet basin plan objectives and comply with receiving water limits. The temperature study will include recommendations for site-specific implementation criteria for receiving water temperature objectives, including in part the period of applicability, and appropriate average periods. These recommendations, and the selected alternative(s) for achieving compliance with the approved receiving water limits considering the site-specific implementation criteria, will be subject to approval by the Executive Officer of the Central Valley Water Board. The Discharger will perform the selected alternative(s) within the timeline requested by the Discharger and approved by the Executive Officer of the Central Valley Water Board.

TENTATIVE

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.

C. 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. Effluent monitoring frequencies and sample types for flow (continuous), BOD_5 (weekly), pH (weekly), TSS (weekly), copper (monthly), mercury (monthly), electrical conductivity (weekly), hardness (monthly), settleable solids (weekly), temperature (continuous), and total dissolved solids (monthly) have been retained from Order R5-2011-0036 to determine compliance with effluent limitations, where applicable, and characterize the effluent for these parameters.

3. Monitoring data collected over the previous permit term for pentachlorophenol, zinc, and TCDD-equivalents did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order R5-2011-0036.

4. This Order establishes effluent limitations for diazinon and chlorpyrifos based on the TMDL for the control of diazinon and chlorpyrifos runoff into the Sacramento and Feather Rivers. Therefore, this order establishes annual effluent monitoring requirements for diazinon and chlorpyrifos to determine compliance with the applicable effluent limitations.

5. Based on groundwater monitoring conducted since 2013, increases in concentrations of total coliform organisms in down gradient groundwater monitoring wells have been observed. However, several environmental conditions have resulted in a change in aquifer dynamics, including movement of the pond treatment system to the current location in May 2013 and the Red Bluff Diversion Dam gates in the Sacramento River were permanently raised in 2013, influencing the direction and magnitude of groundwater flows. In order to determine whether process wastewater in Ponds 4A, 4B, and 4C, is the source of the elevated groundwater concentrations, this Order requires the Discharger to collect effluent monitoring data for total coliform and fecal coliform organisms.

6. In accordance with Section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. This Order requires effluent monitoring for priority pollutants and other constituents of concern twice during the third year of the permit term. See section VIII.A of the Monitoring and Reporting Program (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.

7. 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)*

TENTATIVE

of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code." The 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.

D. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Order R5-2011-0036 required acute toxicity testing twice per month. The discharge has been in consistent compliance with the applicable acute toxicity effluent limitations, with a minimum observed percent survival of 95 percent based on 89 samples collected during the term of Order R5-2011-0036. Therefore, this Order reduces the frequency for 96-hour bioassay testing from twice per month to quarterly.

2. **Chronic Toxicity.** Order R5-2011-0036 required chronic toxicity testing annually. Based on whole effluent chronic toxicity testing performed by the Discharger during the term of Order R5-2011-0036, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Therefore, this Order reduces the frequency for chronic whole effluent toxicity testing from annually to once during the permit term in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

E. 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. Receiving water monitoring frequencies and sample types for pH (weekly), copper (monthly), electrical conductivity (weekly), hardness (monthly), temperature (weekly), and turbidity (weekly) have been retained from Order R5-2011-0036 to determine compliance with applicable receiving water limitations and characterize the receiving water for these parameters.

c. Order R5-2011-0036 required monthly receiving water monitoring for zinc. Monitoring data collected over the previous permit term for zinc did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific receiving water monitoring requirements for zinc have not been retained from Order R5-2011-0036.

d. 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 twice during the third year of the permit term in order to collect data to conduct an RPA for the next permit renewal. See section IX.A of the Monitoring and Reporting Program (Attachment E) for more detailed requirements related to performing priority pollutant monitoring.

2. Groundwater

TENTATIVE

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 increase in constituent concentrations, when compared to background. 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 background, this permit may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened and specific numeric limitations established consistent with Resolution No. 68-16 and the Basin Plan.

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. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

F. Other Monitoring Requirements

1. **Land Discharge Monitoring.** Land discharge monitoring is required to ensure that the use of the settling basins (Ponds 4A and 4B) and aeration basin (Pond 4C) complies with the Treatment Pond Operating Requirements in section VI.C.4.a of this Order. Monitoring frequencies and sample types for freeboard (weekly), pH (weekly), electrical conductivity (weekly), odors (weekly), and dissolved oxygen (weekly) have been

TENTATIVE

retained from Order R5-2011-0036. This Order establishes monitoring for total coliform and fecal coliform organisms in discharges to Pond 4A at Monitoring Location LND-001A and within Pond 4A at Monitoring Location LND-001B in order to determine if the ponds are the source of increasing coliform organisms in the underlying groundwater.

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board has considered the issuance of WDR's that will serve as an NPDES permit for the Pactiv LLC, Molded Pulp Mill. As a step in the WDR adoption process, 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 the following <**Describe Notification Process (e.g., newspaper name and date)**>

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/

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDR's as provided through the notification process. Comments were due either in person or by mail to the Executive Office at the Central Valley Water Board at the address on the cover page of this Order.

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 <**DATE**>.

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:	23/24 February 2017
Time:	8:30 a.m.
Location:	Regional Water Quality Control Board, Central Valley Region 11020 Sun Center Dr., Suite #200 Rancho Cordova, CA 95670

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

TENTATIVE

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

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 Jeremy Pagan at (530) 224-4850.

TENTATIVE

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Chloride	mg/L	16.8	4.02	230	860[1]	230[2]	--	--	--	250	No
Chlorpyrifos	µg/L	<0.006	<0.006	0.015	--	--	--	--	0.015	--	Yes[3]
Copper, Total Recoverable	µg/L	5.2	14.7	7.8	12	7.8	1,300	--	11	1,000	Yes
Diazinon	µg/L	<0.006	<0.006	0.10	--	--	--	--	0.10	--	Yes[3]
Electrical Conductivity @ 25°C	µmhos/cm	347[4]	141[4]	230	--	--	--	--	230	900	No[3]
Mercury, Total Recoverable	µg/L	0.00111	0.00103	0.050	--	--	0.050	0.051	--	2	Yes[3]
Sulfate	mg/L	<1	<1	250	--	--	--	--	--	250	No
Total Dissolved Solids	mg/L	209[4]	85[4]	500	--	--	--	--	--	500	No
Zinc, Total Recoverable	µg/L	14.2	23.4	29	100	100	7,400	26,000	29	5,000	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

Footnotes:
(1) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour average.
(2) U.S. EPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 4-day average.
(3) See section IV.C.3 of the Fact Sheet (Attachment F) for a discussion of the RPA results.
(4) Represents the maximum observed average annual concentration for comparison with the Secondary MCL or Basin Plan objective.

TENTATIVE

ATTACHMENT H – CALCULATION OF WQBEL'S

Aquatic Life WQBEL's Calculations															
Parameter	Units	Criteria		Dilution Factors		Aquatic Life Calculations							Final Effluent Limitations		
		CMC	CCC	CMC	CCC	ECA Multiplier$_{acute}$	LTA$_{acute}$	ECA Multiplier$_{chronic}$	LTA$_{chronic}$	AMEL Multiplier$_{95}$	AWEL Multiplier	MDEL Multiplier$_{99}$	AMEL[1]	AWEL[2]	MDEL[3]
Copper, Total Recoverable	µg/L	11[4]	7.8	--	--	0.54	5.9	0.72	5.6	1.25	--	1.86	7.1	--	10
Chlorpyrifos	µg/L	0.025	0.015	--	--	0.32	0.0080	0.53	0.0079	1.55	--	3.11	0.012	0.021	--
Diazinon	µg/L	0.16	0.10	--	--	0.32	0.051	0.53	0.053	1.55	--	3.11	0.079	0.14	--

1 Average Monthly Effluent Limitations are calculated according to Section 1.4 of the SIP using a 95th percentile occurrence probability.
2 Average Weekly Effluent Limitations are calculated according to Section 1.4 of the SIP using a 98th percentile occurrence probability.
3 Maximum Daily Effluent Limitations are calculated according to Section 1.4 of the SIP using a 99th percentile occurrence probability.
4 Basin Plan water quality objective evaluated using an ambient hardness of 81 mg/L (as $CaCO_3$) and default U.S. EPA acute conversion factor.

TENTATIVE