CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

11020 Sun Center Drive, #200 Rancho Cordova, California 95670-6114
Phone (916) 464-3291 Ÿ Fax (916) 464-4645
http://www.waterboards.ca.gov/centralvalley

ORDER R5-2016-0026-01

NPDES NO. CA0085197

WASTE DISCHARGE REQUIREMENTS
STERLING CAVIAR LLC
STERLING CAVIAR LLC, ELVERTA
SACRAMENTO COUNTY

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

Table 1. Discharger Information

Discharger	Sterling Caviar LLC
Name of Facility	Sterling Caviar LLC, Elverta
Facility Address	9149 E. Levee Road
	Elverta, CA 95626
	Sacramento County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	**Aquaculture Wastewater**	38.735 º	- 121.490556 º	BKS Preserve Wetlands

Table 3. Administrative Information

This Order was adopted on:	**21 April 2016**
This Order shall become effective on:	**1 June 2016**
This Order shall expire on:	**31 May 2021**
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:	**2 December 2020**
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Central Valley Region have classified this discharge as follows:	**Minor**

I, Pamela 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 **21 April 2016** and amended by Order R5-2017-0122 on **8 December 2017**.

Original Signed By

PAMELA C. CREEDON, Executive Officer

CONTENTS

I. Facility Information 3
II. Findings 3
III. Discharge Prohibitions 4
IV. Effluent Limitations and Discharge Specifications 4
A. Effluent Limitations – Discharge Point 001 4
1. Final Effluent Limitations – Discharge Point 001 4
2. Interim Effluent Limitations – Not Applicable 5
B. Land Discharge Specifications – Not Applicable 5
C. Recycling Specifications – Not Applicable 5
V. Receiving Water Limitations 5
A. Surface Water Limitations 5
B. Groundwater Limitations – Not Applicable 6
VI. Provisions 7
A. Standard Provisions 7
B. Monitoring and Reporting Program (MRP) Requirements 10
C. Special Provisions 10
1. Reopener Provisions 10
2. Special Studies, Technical Reports and Additional Monitoring Requirements – Not Applicable 11
3. Best Management Practices and Pollution Prevention 11
4. Construction, Operation and Maintenance Specifications 12
5. Special Provisions for Municipal Facilities (POTW's Only) – Not Applicable 13
6. Other Special Provisions 13
7. Compliance Schedules – Not Applicable 13
VII. Compliance Determination 13

TABLES

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

ATTACHMENTS

Attachment A – Definitions A-1
Attachment B – 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
Attachment I – Monthly Chemical Use Reports I-1

I. FACILITY INFORMATION

Information describing the Sterling Caviar LLC, Elverta (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, V.B, and Special Provisions VI.C are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

D. Monitoring and Reporting. 40 C.F.R. section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment E.

The technical and monitoring reports in this Order are required in accordance with Water Code section 13267, which states the following in subsection (b)(1), *"In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."*

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

E. Notification of Interested Parties. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

F. Consideration of Public Comment. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED that Order R5-2007-0012 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.

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
pH	standard units	--	--	6.5	8.0
Arsenic	µg/L	14	19	--	--

b. The Discharger shall minimize the discharge of Total Suspended Solids and Biochemical Oxygen Demand through the implementation of the best management practices established in Special Provision VI.C.3.a of this Order.

c. **Average Daily Discharge Flow.** The Average Daily Discharge Flow shall not exceed 3.67 million gallons per day (mgd).

2. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The discharge shall not cause the following in the BKS Preserve Wetlands.

1. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.
2. **Biostimulatory Substances.** Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.
3. **Chemical Constituents.** Chemical constituents to be present in concentrations that adversely affect beneficial uses.
4. **Color.** Discoloration that causes nuisance or adversely affects beneficial uses.
5. **Dissolved Oxygen:**
   a. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass**;**
   b. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor
   c. The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.
6. **Floating Material.** Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.
7. **Oil and Grease.** Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
8. **pH.** The pH to be depressed below 6.5 nor raised above 8.0.
9. **Pesticides:**
   a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
   b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
   c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by U.S. EPA or the Executive Officer;
   d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR 131.12;

e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;

f. 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.

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;

    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 – Not Applicable

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 CFR section 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

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

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

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

d. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

   i. Contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or

   ii. Controls any pollutant limited in the Order.

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

e. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

f. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.

g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by USEPA under section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.

h. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

i. Safeguard to electric power failure:

   i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.

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

   iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Central Valley Water Board not approve the existing safeguards, the Discharger shall, within 90 days of having been advised in writing by the Central Valley Water Board that the existing safeguards are inadequate, provide to the Central Valley Water Board and USEPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Central Valley Water Board, become a condition of this Order.

j. The Discharger, upon written request of the Central Valley Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under the Central Valley Water Board Standard Provision contained in section VI.A.2.i of this Order.

The technical report shall:

i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

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

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

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

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

n. For publicly owned treatment works, prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a permanent decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (Water Code section 1211).

o. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

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

p. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

q. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Central Valley Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Central Valley Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

a. Conditions that necessitate a major modification of a permit are described in 40 CFR 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.

2. Special Studies, Technical Reports and Additional Monitoring Requirements – Not Applicable

3. Best Management Practices and Pollution Prevention

a. **Best Management Practices and Pollution Prevention as Required in 40 CFR §451.11**

The Discharger must certify in writing by **1 September 2016** that a BMP Plan has been developed and is being implemented as required by 40 C.F.R. Part 451. An existing BMP plan may be modified for use under this section. The Discharger shall develop and implement the BMP Plan to prevent or minimize the generation and discharge of wastes and pollutants to waters of the United States and waters of the State and ensure disposal or land application of wastes is in compliance with applicable solid waste disposal regulations. The BMP Plan shall include a salinity evaluation and minimization plan to address salt treatments at the Facility. The Discharger shall review the BMP Plan annually and must amend the BMP Plan whenever there is a change in the facility or in the operation of the facility which materially increases the generation of pollutants or their release or potential release to surface waters.. The Discharger shall develop and implement a BMP plan consistent with the following objectives:

The BMP plan must include, at a minimum, the following BMPs:

i. Operational requirements for solids control. The Discharger shall:

a) Feed management and feeding strategies must minimize the discharge of unconsumed food.

b) Raceways and ponds must be cleaned at such frequency and in such a manner to minimize the discharge of accumulated solids discharged to waters of the U.S.

c) Fish grading, harvesting and other activities within tanks or ponds must be conducted in such a manner to minimize the discharge of accumulated solids.

d) Fish mortalities must be removed and properly disposed of on a regular basis to prevent discharge to waters of the U.S., except in cases where the discharge to surface waters is determined to benefit the aquatic environment. Procedures must be identified and implemented to collect, store, and dispose of fish and other solid wastes.

e) Water used in the rearing or holding units or hauling trucks that is disinfected with chlorine or other chemicals must meet effluent limitations in this Order before it is discharged to waters of the U.S.

f) All drugs and pesticides must be used in accordance with applicable label directions (FIFRA or FDA), except under the following conditions, both of which must be reported to the Executive Officer

1) Participation in Investigational New Animal Drug (INAD) studies, using established protocols; or

2) Extra label drug use, as prescribed by a veterinarian.

ii. Materials storage. The Discharger shall:

a) Ensure proper storage of drugs, chemicals, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides or feed to waters of the United States.

b) Implement procedures for properly containing, cleaning, and disposing of any spilled material.

iii. Structural maintenance. The Discharger shall:

a) Inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.

b) Conduct regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.

iv. Recordkeeping. The Discharger shall:

a) In order to calculate representative feed conversion ratios, maintain records for aquatic animal rearing units documenting the feed amounts and estimates of the numbers and weight of aquatic animals.

b) Keep records documenting the frequency of cleaning, inspections, maintenance and repairs.

v. Training. The Discharger shall:

a) Train all relevant facility personnel in spill prevention and how to respond in the event of a spill in order to ensure the proper clean-up and disposal of spilled material.

b) Train personnel on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment.

The Discharger shall ensure that its operations staff are familiar with the BMP Plan and have been adequately trained in the specific procedures it requires.

4. Construction, Operation and Maintenance Specifications

a. **Solids disposal specifications.** Collected screenings, sludge, and other solids, including fish carcasses, shall be disposed of in a manner approved by the Executive Officer and consistent with Consolidated Regulations for Treatment,

Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq.

b. **Aquaculture drugs and chemicals disposal**. All aquaculture drugs and chemicals not discharged to receiving waters in accordance with the provisions of this Order shall be disposed of in an environmentally safe manner, according to label guidelines, Material Safety Data Sheet guidelines, and the facility's BMP Plan. Any other form of disposal requires approval from the Executive Officer.

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

6. Other Special Provisions

a. **Aquaculture Chemicals and Drugs.** This permit authorizes the discharge of sodium chloride, hydrogen peroxide, chloramine-T, and oxytetracycline in accordance with the effluent limitations, BMP plan requirements, Monitoring and Reporting requirements and other conditions of this permit. Other aquaculture chemicals or drugs that may enter the wastewater discharge can only be authorized if the Discharger submits a Report of Waste Discharge (ROWD) to the Regional Water Board that contains the following supplemental information, and the Regional Water Board has issued waste discharge requirements or this Order has been reopened and revised:

i. The common name(s) and active ingredient(s) of the drug or chemical proposed for use and discharge.

ii. The purpose for the proposed use of the drug or chemical (i.e. list the specific disease for treatment and specific species for treatment).

iii. The amount proposed for use and the resulting calculated concentration in the discharge.

iv. The duration and frequency of the proposed use.

v. Material Safety Data Sheets and available toxicity information.

vi. Any related Investigational New Animal Drug (INAD), New Animal Drug Application (NADA) information, extra-label use requirements and/or veterinarian prescriptions.

The Discharger shall also submit acute toxicity test information on any new chemical or drug in accordance with methods specified in EPA600/4-90/027, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, using *Ceriodaphnia dubia* to determine the NOAEL, and LOAEL.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

A. 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.

B. Arsenic Effluent Limitations. Intake water credits have been allowed for arsenic. Therefore, if the average monthly and/or maximum daily effluent limitation for arsenic required in Table 4 is exceeded, the discharge will be deemed to be in compliance with the effluent limitation(s) if the total recoverable arsenic concentration and mass measured in the effluent does not exceed the respective total recoverable arsenic concentration and mass of the intake water, calculated per MRP Sections X.B.7.a. and X.B.7.b.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (m)
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 = $m = Sx / n$ where: Sx 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.

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

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

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

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

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

Detected, but Not Quantified (DNQ)
DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

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

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

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

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

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

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

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

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

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

Median
The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of

measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the n/2 and n/2+1).

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

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

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

Not Detected (ND)
Sample results which are less than the laboratory's MDL.

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

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

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

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

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

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

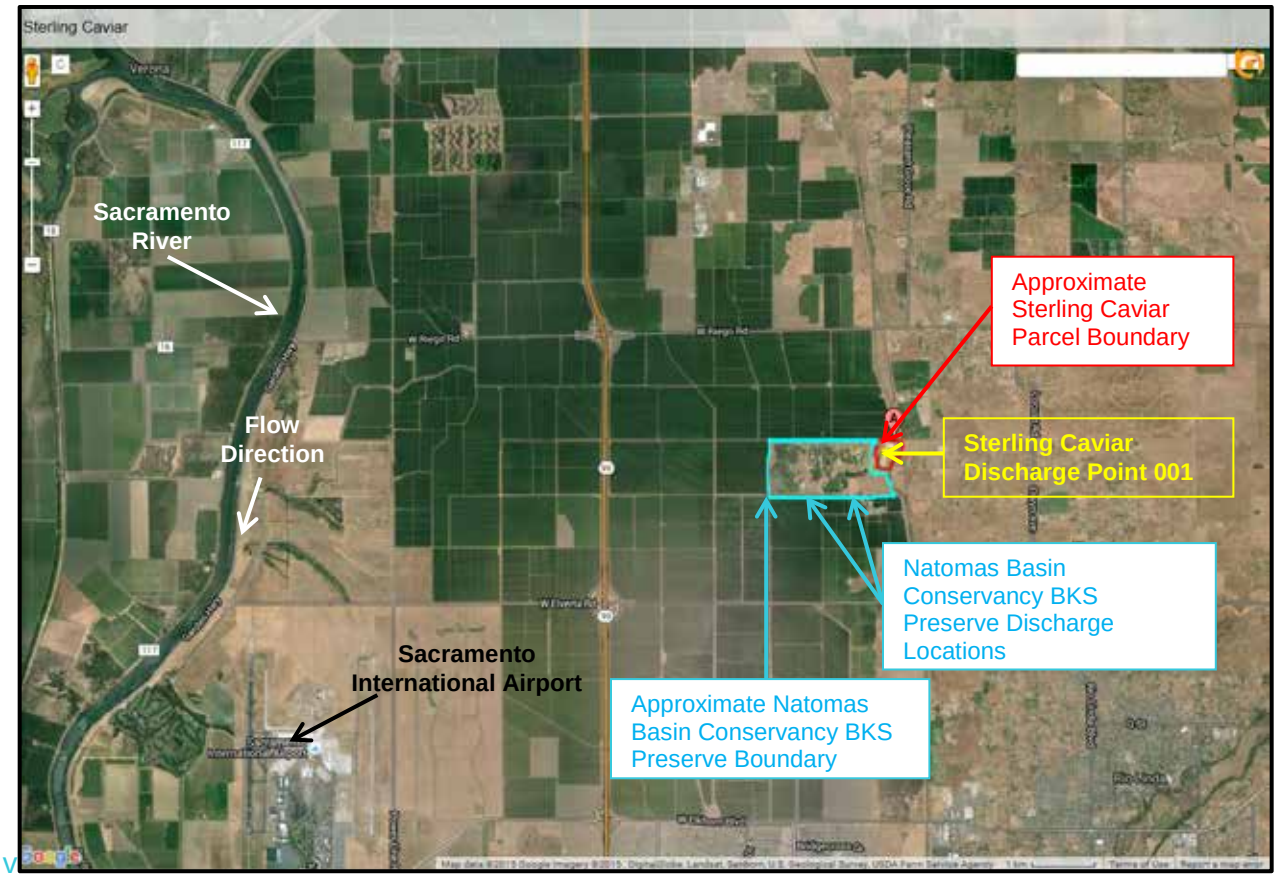
Standard Deviation (s)
Standard Deviation is a measure of variability that is calculated as follows:

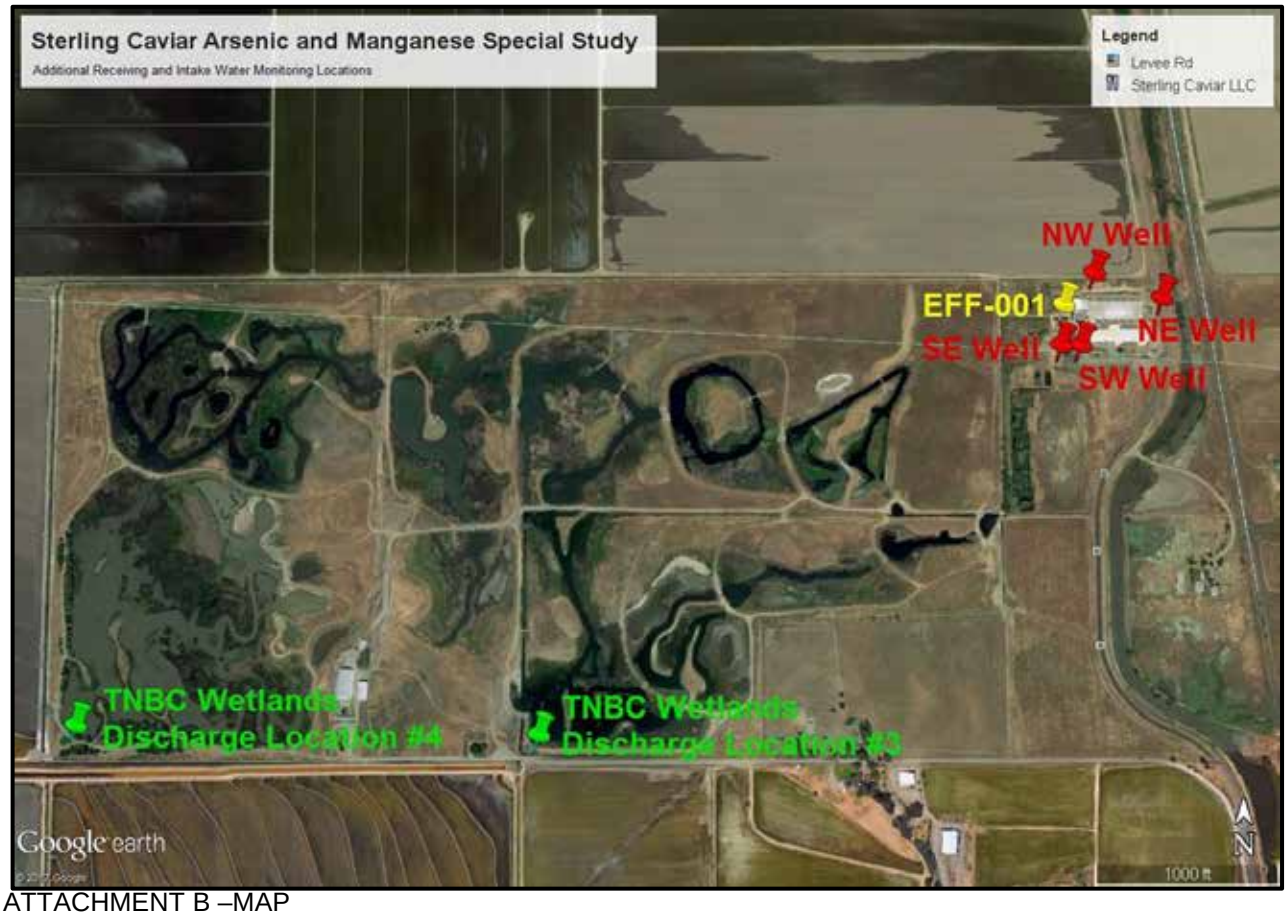
$$s = (å[(x - m)^2]/(n - 1))^{0.5}$$

where:

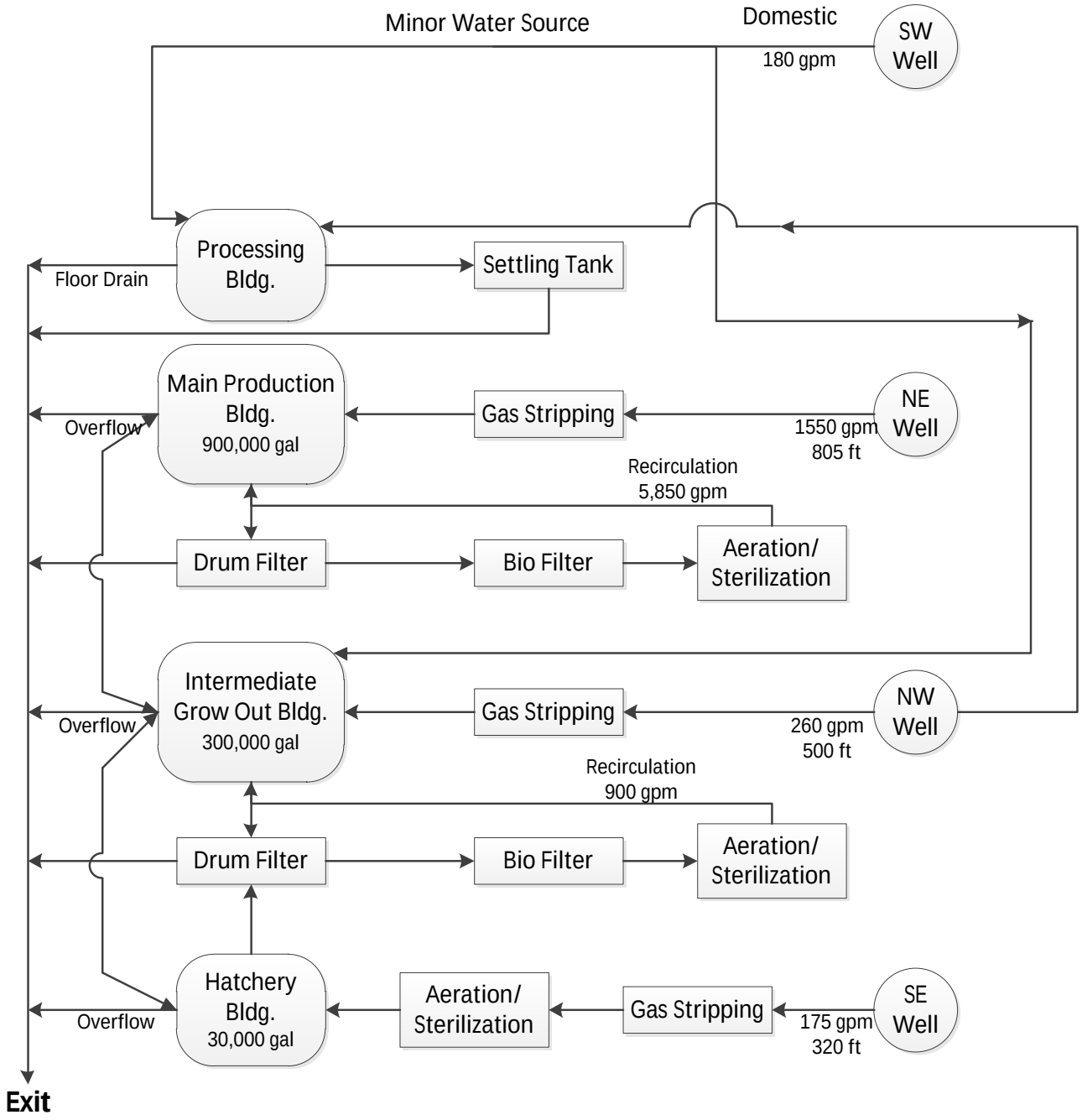
x is the observed value;
m is the arithmetic mean of the observed values; and
n is the number of samples.

ATTACHMENT B – MAP

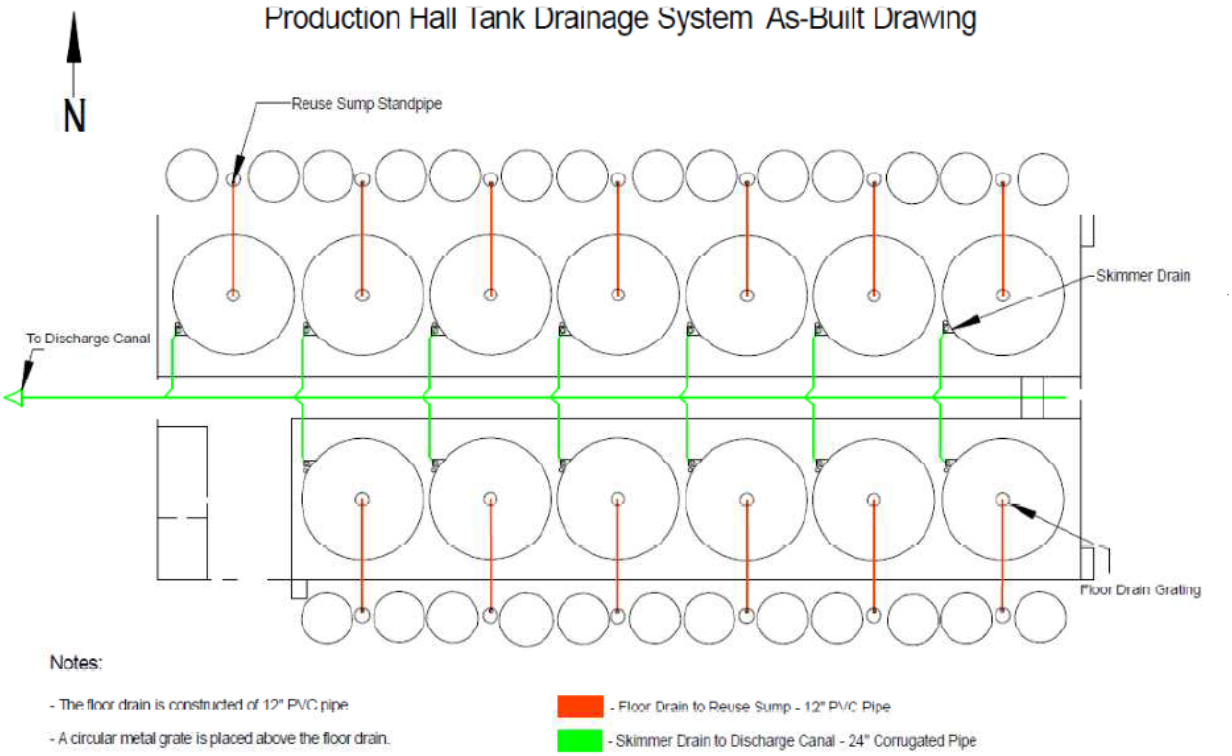




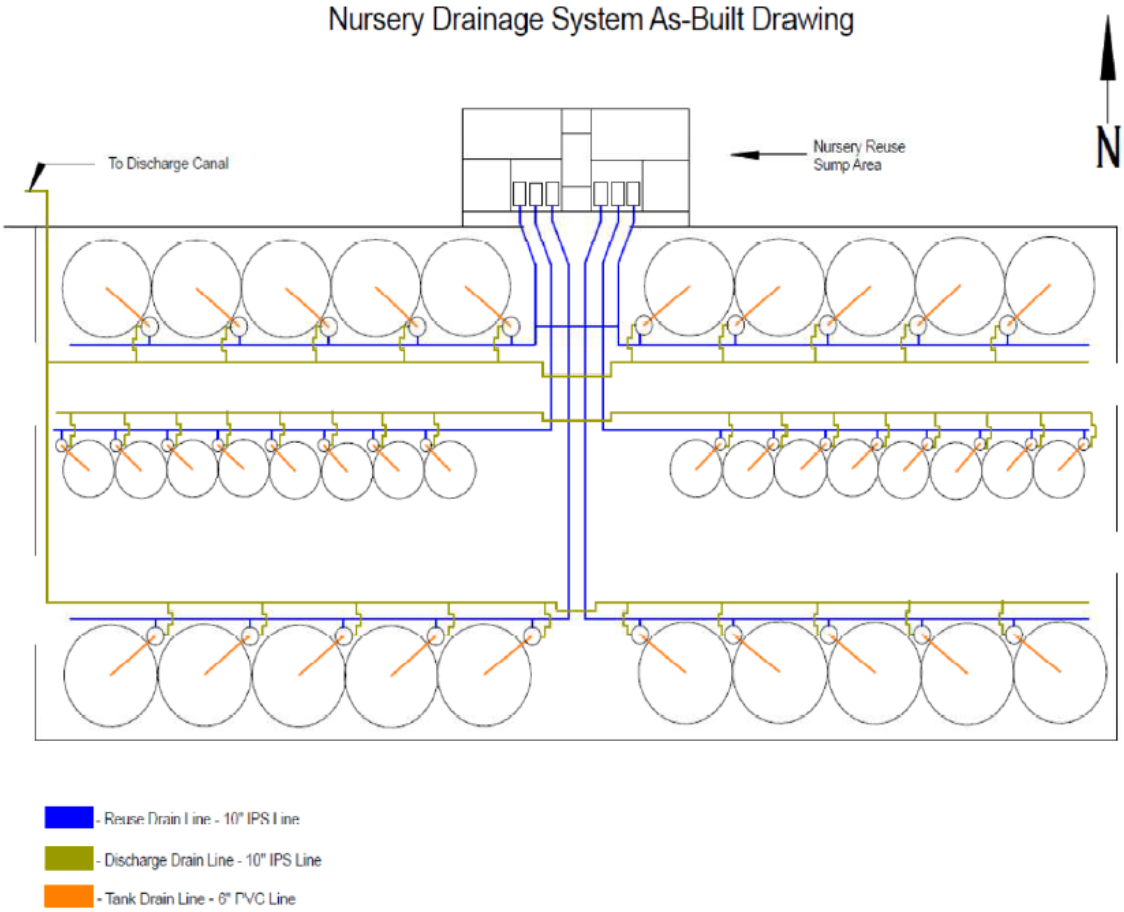
ATTACHMENT C – FLOW SCHEMATIC



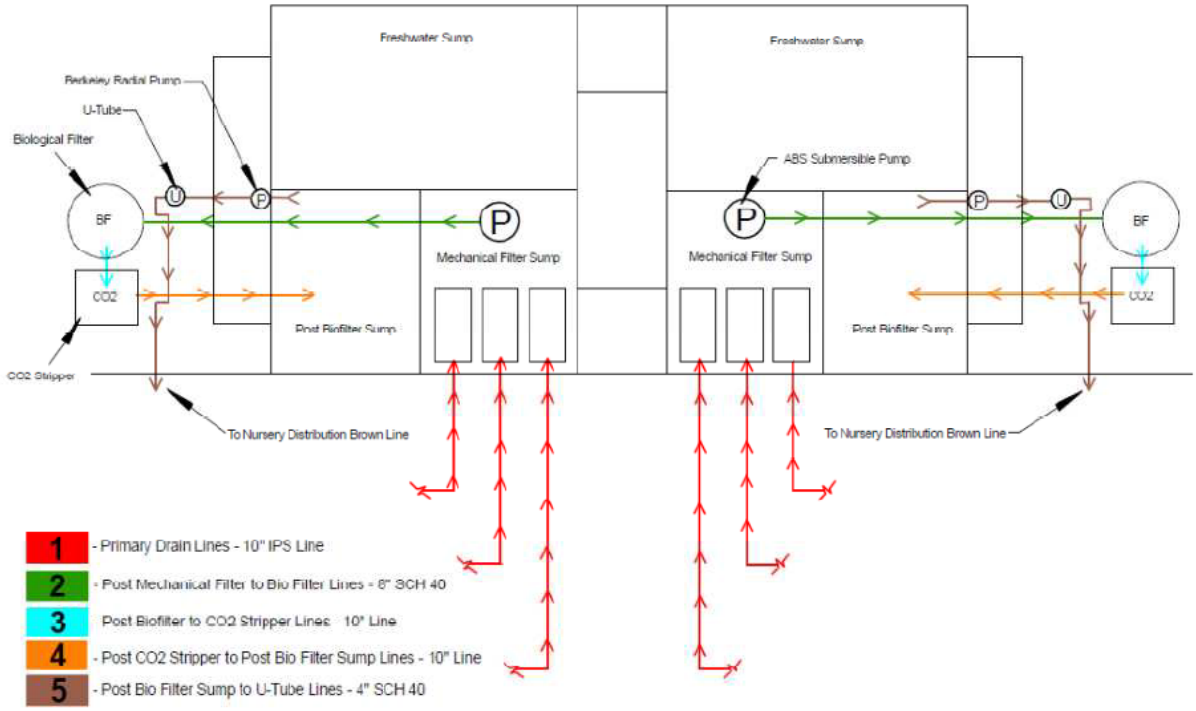
ATTACHMENT C-1 – FLOW SCHEMATIC- PRODUCTION HALL TANK DRAINAGE SYSTEM



ATTACHMENT C-2 – FLOW SCHEMATIC- NURSERY TANK DRAINAGE SYSTEM



ATTACHMENT C-3 – FLOW SCHEMATIC- NURSERY REUSE WATER TREATMENT SYSTEM



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)

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

F. Inspection and Entry

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

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, § 13267, 13383); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C § 1318(a)(4)(B); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

G. Bypass

1. Definitions

   a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)

   b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Central Valley Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):

   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));

   b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and

   c. The Discharger submitted notice to the Central Valley Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)

4. The Central Valley Water Board may approve an anticipated bypass, after considering its adverse effects, if the Central Valley Water Board determines that it will meet the

three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)

5. Notice

   a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)

   b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

   b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));

   c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)

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

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Central Valley Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Central Valley Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Central Valley Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, §§ 13267, 13383.)

B. Signatory and Certification Requirements

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

Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. § 122.22(d).)

C. Monitoring Reports

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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

b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)

3. The Central Valley Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 C.F.R. § 122.41(l)(1)(ii).)

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R.§ 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

J. Non-Municipal Facilities

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

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 C.F.R. § 122.42(a)(1)):

   a. 100 micrograms per liter (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).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Contents

I. General Monitoring Provisions E-2
II. Monitoring Locations E-3
III. Influent Monitoring Requirements – Not Applicable E-3
IV. Effluent Monitoring Requirements E-4
  A. Monitoring Location EFF-001 ..... E-4
V. Whole Effluent Toxicity Testing Requirements E-5
VI. Land Discharge Monitoring Requirements – Not Applicable E-5
VII. Recycling Monitoring Requirements – Not Applicable E-5
VIII. Receving water Monitoring Requirements E-5
IX. Other Monitoring Requirements E-6
  A. Monthly Drug and Chemical Use Report E-6
  B. Effluent Characterization Monitoring E-7
X. Reporting Requirements E-12
  A. General Monitoring and Reporting Requirements E-12
  B. Self-Monitoring Reports (SMRs) E-12
  C. Other Reports E-16

Tables

Table E-1. Monitoring Station Locations E-3
Table E-2. Influent Monitoring E-4
Table E-3. Effluent Monitoring E-4
Table E-4. Effluent Characterization Monitoring E-7
Table E-5. Monitoring Periods and Reporting Schedule E-13
Table E-6 Reporting Requirements for Special Provisions Reports E-16

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

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

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Central Valley Water Board.

B. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

C. Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory certified for such analyses by the State Water Resources Control Board (State Water Board), Division of Drinking Water (DDW; formerly the Department of Public Health). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board. In the event a certified laboratory is not available to the Discharger for any onsite field measurements such as pH, dissolved oxygen (DO), turbidity, temperature, and residual chlorine, such analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any onsite field measurements such as pH, DO, turbidity, temperature, and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Central Valley Water Board.

D. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

F. Laboratories analyzing monitoring samples shall be certified by DDW, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.

G. The Discharger shall 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 daily maximum discharge flows.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
001	**EFF-001**	Location where a representative sample of the effluent prior to discharge at Discharge Point 001 can be collected Latitude: 38.735670° Longitude: -121.492583°
--	**NE Well**	Location where a representative sample of the intake water from the North East on-site well can be collected Latitude: 38. 73583° Longitude: -121. 4906°
--	**NW Well**	Location where a representative sample of the intake water from the North West on site well can be collected Latitude: 38. 73611° Longitude: -121. 4919
--	**SE Well**	Location where a representative sample of the intake water from the South East on site well can be collected Latitude: 38. 735° Longitude: -121.492583
--	**SW Well**	Location where a representative sample of the intake water from the South West on site well can be collected Latitude: 38. 735° Longitude: -121. 4922
--	**TNBC #3**	Location where a representative sample of water flowing from the wetlands can be collected Latitude: 38. 72916667° Longitude: -121. 50277778°
--	**TNBC #4**	Location where a representative sample of water flowing from the wetlands can be collected Latitude: 38. 72833333° Longitude: -121. 51166667°

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

III. INFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor the intake water at all four on-site water supply wells, monitoring locations NE Well, NW Well, SE Well, and SW Well, as described above in Table E-1 and as shown in attachment B. If more than one analytical test method is listed for a given parameter, the Discharger must select methods and corresponding Minimum Level listed in Table E-4. 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. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Priority Pollutants				
Arsenic, Total Recoverable	µg/L	Grab	1/Quarter	[1, 2, 3]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[2] For priority pollutant constituents the reporting level shall be consistent with Sections 2.4.2 and 2.4.3 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (See Attachment E, Table E-4).
[3] Sampling shall occur on the same day as the sampling of effluent for arsenic required in Table E-3.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor the effluent at 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-3. 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	Grab	1/Month	[1]
Total Suspended Solids	mg/L	Grab	1/month	[1]
pH	standard units	Grab	1/Week [2, 3]	[1]
Priority Pollutants				
Arsenic, Total Recoverable	µg/L	Grab	1/Quarter	[1, 4, 5]
Non-Conventional Pollutants				
Antimony	µg/L	Grab	2/Year	[1]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Month [2]	[1]
Chloride	mg/L	Grab	1/Month	[1]
Dissolved Oxygen	mg/L	Grab	1/Month	[1]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Quarter	[1]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Quarter	[1]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Quarter	[1]
Settleable Solids	ml/L	Grab	1/Quarter	[1]
Temperature	°C	Grab	1/Week [2, 3]	[1]
Total Dissolved Solids	mg/L	Grab	1/Quarter	[1]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[2] pH and temperature shall be recorded at the time of ammonia sample collection.
[3] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

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.

[4] For priority pollutant constituents the reporting level shall be consistent with Sections 2.4.2 and 2.4.3 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (See Attachment E, Table E-4).

[5] Sampling shall occur on the same day as the sampling of intake water for arsenic required in Table E-2.

2. If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above, except for priority pollutants, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

Not Applicable - See Attachment F, Fact Sheet, Section VII.C.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEVING WATER MONITORING REQUIREMENTS

Not Applicable - See Attachment F, Fact Sheet, Section VII.D.

IX. OTHER MONITORING REQUIREMENTS

A. Monthly Drug and Chemical Use Report

The Discharger shall develop a monthly report describing all aquaculture drugs or chemicals used at the Facility using Attachment I – Chemical Use Report. The report shall be submitted with the quarterly self-monitoring reports. The information that shall be provided includes:

1. The name(s) and active ingredient(s) of the drug or chemical.

2. The date(s) of application.

3. The purpose(s) for the application.

4. The method of application (e.g. immersion bath, administered in feed), duration of treatment, whether the treatment was static or flush (for drugs or chemicals applied directly to water), amount in gallons or pounds used, treatment concentration(s), and the flow measured in cubic feet per second (cfs) in the treatment units.

5. The total flow through the facility measured in cfs to the discharge point after mixing with the treated water.

6. For drugs and chemicals applied directly to water (i.e., immersion bath, flush treatment) and for which effluent monitoring is not otherwise required, the estimated concentration in the effluent at the point of discharge.

7. The method of disposal for drugs or chemicals used but not discharged in the effluent.

Calculation of Concentration

For drugs or chemicals used in an immersion bath, “drip” treatment, or in other direct application to waters at the Facility, use the following formula to calculate concentration (C) at the point of discharge.

C = concentration of chemical or drug at the point of discharge

C = (treatment concentration) x (flow in treatment area) ÷ (flow at point of discharge)

Example: Potassium permanganate ($KMNO_4$) concentration

C = 2.0 mg/L ($KMNO_4$) x (0.45 mgd (flow through treatment area)
5.0 mgd (flow at point of discharge)

C = 2.0 mg/L x 0.09

C = 0.18 mg/L potassium permanganate at the point of discharge.

This information shall be submitted with the quarterly self-monitoring reports. If the analysis of this chemical use compared with any toxicity testing results or other available information for the therapeutic agent, chemical or anesthetic indicates that the discharge may cause, have the reasonable potential to cause, or contribute to an excursion of a numeric or narrative water quality criterion or objective, the Executive Officer may require site-specific whole effluent toxicity (WET) tests using *Ceriodaphnia dubia.*

B. Effluent Characterization Monitoring

1. The Discharger shall monitor the effluent and analyze the samples for priority pollutants and other constituents of concern listed in Table E-4 **once during the term of this Order. Unless modified through written approval by the Executive Officer, the monitoring shall occur after 1 January 2020, but no later than 1 July 2020**. The monitoring data shall be submitted to the Central Valley Water Board within **60 days of the final sampling event**. Sections 2.4.1 through 2.4.4 of the SIP provide minimum standards for analyses and reporting. (Copies of the SIP may be obtained from the State Water Resources Control Board, or downloaded from http://www.waterboards.ca.gov/iswp/index.html.)

2. **Manganese Characterization Monitoring**. To provide sufficient data to conduct the reasonable potential analysis for manganese for the next permit renewal, the Discharger shall collect total recoverable and dissolved manganese samples quarterly for one year, at monitoring locations EFF-001 and TNBC # 4 (if there is no flow at TNBC #4 the Discharger shall sample at TNBC #3). **Unless modified through written approval by the Executive Officer, the quarterly sampling shall occur during the year 2020**. When analyzing for dissolved metals, the sample must be filtered in the field (prior to acidification with nitric acid) within 15 minutes of sample collection as required in 40 CFR 136.3. The sample is filtered through a 0.45-µm filter at the time of collection and the liquid phase is then acidified at the time of collection with nitric acid. The monitoring data shall be submitted to the Central Valley Water Board with the quarterly SMRs.

Table E-4. Effluent Characterization Monitoring

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
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

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
Naphthalene	µg/L	Grab	10
3-Methyl-4-Chlorophenol	µg/L	Grab	
Tetrachloroethene	µg/L	Grab	0.5
Toluene	µg/L	Grab	2
trans-1,2-Dichloroethylene	µg/L	Grab	1
Trichloroethene	µg/L	Grab	2
Vinyl chloride	µg/L	Grab	0.5
Methyl-tert-butyl ether (MTBE)	µg/L	Grab	
Trichlorofluoromethane	µg/L	Grab	
1,1,1-Trichloroethane	µg/L	Grab	0.5
1,1,2- 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	
1,2-Benzanthracene	µg/L	Grab	5
1,2-Diphenylhydrazine	µg/L	Grab	1
2-Chlorophenol	µg/L	Grab	5
2,4-Dichlorophenol	µg/L	Grab	5
2,4-Dimethylphenol	µg/L	Grab	2
2,4-Dinitrophenol	µg/L	Grab	5
2,4-Dinitrotoluene	µg/L	Grab	5
2,4,6-Trichlorophenol	µg/L	Grab	10
2,6-Dinitrotoluene	µg/L	Grab	5
2-Nitrophenol	µg/L	Grab	10
2-Chloronaphthalene	µg/L	Grab	10
3,3'-Dichlorobenzidine	µg/L	Grab	5
3,4-Benzofluoranthene	µg/L	Grab	10
4-Chloro-3-methylphenol	µg/L	Grab	5
4,6-Dinitro-2-methylphenol	µg/L	Grab	10
4-Nitrophenol	µg/L	Grab	10
4-Bromophenyl phenyl ether	µg/L	Grab	10
4-Chlorophenyl phenyl ether	µg/L	Grab	5
Acenaphthene	µg/L	Grab	1
Acenaphthylene	µg/L	Grab	10
Anthracene	µg/L	Grab	10
Benzidine	µg/L	Grab	5
Benzo(a)pyrene (3,4-Benzopyrene)	µg/L	Grab	2
Benzo(g,h,i)perylene	µg/L	Grab	5
Benzo(k)fluoranthene	µg/L	Grab	2
Bis(2-chloroethoxy) methane	µg/L	Grab	5
Bis(2-chloroethyl) ether	µg/L	Grab	1
Bis(2-chloroisopropyl) ether	µg/L	Grab	10

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
Bis(2-ethylhexyl) phthalate	µg/L	Grab	5
Butyl benzyl phthalate	µg/L	Grab	10
Chrysene	µg/L	Grab	5
Di-n-butylphthalate	µg/L	Grab	10
Di-n-octylphthalate	µg/L	Grab	10
Dibenzo(a,h)-anthracene	µg/L	Grab	0.1
Diethyl phthalate	µg/L	Grab	10
Dimethyl phthalate	µg/L	Grab	10
Fluoranthene	µg/L	Grab	10
Fluorene	µg/L	Grab	10
Hexachlorocyclopentadiene	µg/L	Grab	5
Indeno(1,2,3-c,d)pyrene	µg/L	Grab	0.05
Isophorone	µg/L	Grab	1
N-Nitrosodiphenylamine	µg/L	Grab	1
N-Nitrosodimethylamine	µg/L	Grab	5
N-Nitrosodi-n-propylamine	µg/L	Grab	5
Nitrobenzene	µg/L	Grab	10
Pentachlorophenol	µg/L	Grab	1
Phenanthrene	µg/L	Grab	5
Phenol	µg/L	Grab	1
Pyrene	µg/L	Grab	10
Aluminum	µg/L	Grab	
Antimony	µg/L	Grab	5
Arsenic	µg/L	Grab	10
Asbestos	MFL	Grab	
Barium	µg/L	Grab	
Beryllium	µg/L	Grab	2
Cadmium	µg/L	Grab	0.5
Chromium (Total)	µg/L	Grab	10
Chromium (VI)	µg/L	Grab	10
Copper	µg/L	Grab	0.5
Cyanide	µg/L	Grab	5
Fluoride	µg/L	Grab	
Iron	µg/L	Grab	
Lead	µg/L	Grab	0.5
Mercury	µg/L	Grab	0.5
Manganese	µg/L	Grab	
Molybdenum	µg/L	Grab	
Nickel	µg/L	Grab	20
Selenium	µg/L	Grab	5
Silver	µg/L	Grab	0.25
Thallium	µg/L	Grab	1
Tributyltin	µg/L	Grab	
Zinc	µg/L	Grab	20
4,4'-DDD	µg/L	Grab	0.05
4,4'-DDE	µg/L	Grab	0.05
4,4'-DDT	µg/L	Grab	0.01
alpha-Endosulfan	µg/L	Grab	0.02
alpha-Hexachlorocyclohexane (BHC)	µg/L	Grab	0.01
Alachlor	µg/L	Grab	
Aldrin	µg/L	Grab	0.005

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
beta-Endosulfan	µg/L	Grab	0.01
beta-Hexachlorocyclohexane	µg/L	Grab	0.005
Chlordane	µg/L	Grab	0.1
delta-Hexachlorocyclohexane	µg/L	Grab	0.005
Dieldrin	µg/L	Grab	0.01
Endosulfan sulfate	µg/L	Grab	0.01
Endrin	µg/L	Grab	0.01
Endrin Aldehyde	µg/L	Grab	0.01
Heptachlor	µg/L	Grab	0.01
Heptachlor Epoxide	µg/L	Grab	0.02
Lindane (gamma-Hexachlorocyclohexane)	µg/L	Grab	0.5
PCB-1016	µg/L	Grab	0.5
PCB-1221	µg/L	Grab	0.5
PCB-1232	µg/L	Grab	0.5
PCB-1242	µg/L	Grab	0.5
PCB-1248	µg/L	Grab	0.5
PCB-1254	µg/L	Grab	0.5
PCB-1260	µg/L	Grab	0.5
Toxaphene	µg/L	Grab	
Atrazine	µg/L	Grab	
Bentazon	µg/L	Grab	
Carbofuran	µg/L	Grab	
2,4-D	µg/L	Grab	
Dalapon	µg/L	Grab	
1,2-Dibromo-3-chloropropane (DBCP)	µg/L	Grab	
Di(2-ethylhexyl)adipate	µg/L	Grab	
Dinoseb	µg/L	Grab	
Diquat	µg/L	Grab	
Endothal	µg/L	Grab	
Ethylene Dibromide	µg/L	Grab	
Methoxychlor	µg/L	Grab	
Molinate (Ordram)	µg/L	Grab	
Oxamyl	µg/L	Grab	
Picloram	µg/L	Grab	
Simazine (Princep)	µg/L	Grab	
Thiobencarb	µg/L	Grab	
2,3,7,8-TCDD (Dioxin)	µg/L	Grab	
2,4,5-TP (Silvex)	µg/L	Grab	
Diazinon	µg/L	Grab	
Chlorpyrifos	µg/L	Grab	
Ammonia (as N)	mg/L	Grab	
Boron	µg/L	Grab	
Chloride	mg/L	Grab	
Flow	MGD	Calculated	
Hardness (as $CaCO_3$)	mg/L	Grab	
Foaming Agents (MBAS)	µg/L	Grab	
Mercury, Methyl	ng/L	Grab	
Nitrate (as N)	mg/L	Grab	
Nitrite (as N)	mg/L	Grab	
pH	Std Units	Grab	

Parameter	Units	Effluent Sample Type	Maximum Reporting Level[1]
Phosphorus, Total (as P)	mg/L	Grab	
Specific conductance (EC)	µmhos/cm	Grab	
Sulfate	mg/L	Grab	
Sulfide (as S)	mg/L	Grab	
Sulfite (as SO_3)	mg/L	Grab	
Temperature	^oC	Grab	
Total Dissolved Solids (TDS)	mg/L	Grab	

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

C. Feeding and Production

The Discharger shall develop an annual report describing the feeding and production for the Facility for the previous calendar year. The annual report shall be submitted on **28 February, annually**, and include the following information:

1. Monthly food usage in pounds for each calendar month for the previous year.
2. Annual production of aquatic animals in pounds per year for the previous year.

D. Best Management Practices (BMP) Plan

On 12 January 2015, the Discharger submitted a Best Management Practices (BMP) Plan. The Discharger included in the BMP Plan a description of how they will prevent or minimize the generation and discharge of wastes and pollutants to waters of the United States and waters of the State and ensure disposal or land application of wastes is in compliance with applicable solid waste disposal regulations. The Discharger shall review the BMP Plan annually and must amend the BMP Plan whenever there is a change in the Facility or in the operation of the Facility which materially increases the generation of pollutants or their release or potential release to surface waters. The Discharger shall report in the last quarterly self-monitoring report each year the outcome of the BMP Plan annual review.

E. Fish Mortality and Disposal Report

To demonstrate compliance with Section VI.C.4.a of the Limitations and Discharge Requirements, the Discharger shall summarize in the monthly self-monitoring report the solids disposal activities during the month. This shall include a description of the solids (e.g., collected screenings, sludge, and other solids, including fish carcasses) and method of disposal. The report shall include the following information:

1. Volume (e.g. weight) of solids disposed;
2. Description of solids disposed; and
3. Method of disposal (e.g. Sacramento Rendering Company)

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. Upon written request of the Central Valley Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).
3. **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 (SMRs)

1. The Discharger shall electronically submit SMRs 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, quarterly, and, annual** SMRs including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-5. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
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
2/Year	Permit effective date	1 January through 30 June 1 July through 31 December	1 August 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 or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

6. The Discharger shall submit SMRs 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 SMRs for which sample analyses were performed.

7. The Discharger shall submit in the SMRs the calculations and reports in accordance with the following requirements:

a. **Arsenic Intake Water Concentration**. The Discharger shall calculate and report the maximum daily and average monthly flow-weighted intake water total recoverable arsenic concentrations on a quarterly basis using Equation (1), below:

<u>Equation (1)</u>

$$Flow\ Weighted\ Arsenic\ \left(\frac{\mu g}{L}\right) = \frac{[As]_{NE} * Q_{NE} + [As]_{NW} * Q_{NW} + [As]_{SE} * Q_{SE} + [As]_{SW} * Q_{SW}}{Q_{NE} + Q_{NW} + Q_{SE} + Q_{SW}}$$

Where:

$[As]_{NE}$ = Maximum daily arsenic concentration for north east monitoring well in micrograms per liter

$[Q]_{NE}$ = Daily average flow rate for north east monitoring well in million gallons per day

$[As]_{NW}$ = Maximum daily arsenic concentration for north west monitoring well in micrograms per liter

$[Q]_{NW}$ = Daily average flow rate for north west monitoring well in million gallons per day

$[As]_{SE}$ = Maximum daily arsenic concentration for south east monitoring well in micrograms per liter

$[Q]_{SE}$ = Daily average flow rate for south east monitoring well in million gallons per day

$[As]_{SW}$ = Maximum daily arsenic concentration for south west monitoring well in micrograms per liter

$[Q]_{SW}$ = Daily average flow rate for south west monitoring well in million gallons per day

For monthly average flow weighted intake water concentration, the monthly average flow and monthly average constituent concentrations for each water supply well shall be used in the above equation.

b. **Arsenic Intake Water Loading**. The Discharger shall calculate and report the maximum daily and monthly average total recoverable arsenic loading of the intake water on a quarterly basis using the Equation (2), below:

<u>Equation (2)</u>

$$Intake\ Water\ Loading\ \left(\frac{Lbs}{day}\right) = Flow\ Weighted\ Arsenic\ \left(\frac{\mu g}{L}\right) * (Q_{NE} + Q_{NW} + Q_{SE} + Q_{SW}) * \left(\frac{8.34}{1{,}000}\right)$$

For monthly average intake water loading, the monthly average flow for each water supply well and monthly average flow weighted arsenic concentration shall be used in the above equation.

Arsenic Effluent Loading. The Discharger shall calculate and report the maximum daily and monthly average total recoverable arsenic loading of the effluent on a quarterly basis using Equation (3), below:

<u>Equation (3)</u>

$$Effluent\ \ Loading\ \left(\frac{Lbs}{day}\right) = \{[As]_{EFF} * Q_{EFF}\} * \left(\frac{8.34}{1{,}000}\right)$$

Where:

$[As]_{EFF}$ = <u>Maximum daily arsenic</u> concentration for the effluent, at monitoring location EFF-001, in micrograms per liter

$[Q]_{EFF}$ = <u>Daily average flow</u> rate for the effluent, at monitoring location EFF-001, in million gallons per day

For monthly average effluent loading, the monthly average effluent flow and monthly average effluent total recoverable arsenic concentration shall be used in the above equation.

C. Other Reports

1. 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 table E-3. In addition, no less than 6 months prior to conducting the effluent characterization monitoring required in Section VIII. B, the Discharger shall submit a report outlining RL's, MDL's, and analytical methods for the constituents listed in Table E-4. 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-4 provides required maximum reporting levels in accordance with the SIP. These maximum reporting levels are also applicable to the routine monitoring described in Table E-3.

2. **Special Study Technical Reports and Progress Reports**. Special Provisions contained in section VI of the Waste Discharge Requirements include requirements to submit special study technical reports and progress reports. Table E-6 summarizes the technical reports required by the Special Provisions and due dates for report submittal. All special study technical reports and progress reports shall be submitted electronically via CIWQS submittal. Reports should be uploaded as a PDF, Microsoft Word, or Microsoft Excel file attachment. If there are any discrepancies between the information presented in Table E-6 and the Special Provisions (Section VI of the Waste Discharge Requirements), the information in the Special Provisions shall supersede the information in Table E-6.

Table E-6 Reporting Requirements for Special Provisions Reports

Special Provision	Reporting Requirements	CIWQS Reference
Report of Waste Discharge	**2 December 2020**	**ROWD**
Analytical Methods Report for the constituents listed in Table E-4 (MRP section IX.B.1.)	**1 July 2019**	**MRP IX.B.1**
Feeding and Production Annual Report (MRP section IX.C.)	**28 February 2018** **28 February 2019** **28 February 2020** **28 February 2021**	**MRP IX.C**

ATTACHMENT F – FACT SHEET

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-6
  D. Compliance Summary – Not Applicable F-6
  E. Planned Changes – Not Applicable 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, Polices and Regulations F-8
IV. Rationale For Effluent Limitations and Discharge Specifications F-12
  A. Discharge Prohibitions F-13
  B. Technology-Based Effluent Limitations F-13
    1. Scope and Authority F-13
    2. Applicable Technology-Based Effluent Limitations F-15
  C. Water Quality-Based Effluent Limitations (WQBEL's) F-16
    1. Scope and Authority F-16
    2. Applicable Beneficial Uses and Water Quality Criteria and Objectives F-16
    3. Determining the Need for WQBEL's F-23
    4. WQBEL Calculations F-39
    5. Whole Effluent Toxicity (WET) F-40
  D. Final Effluent Limitation Considerations F-41
    1. Mass-based Effluent Limitations F-41
    2. Averaging Periods for Effluent Limitations F-41
    3. Satisfaction of Anti-Backsliding Requirements F-42
    4. Antidegradation Policies F-44
    5. Stringency of Requirements for Individual Pollutants F-45
  E. Interim Effluent Limitations – Not Applicable F-46
V. Rationale for Receiving Water Limitations F-46
  A. Surface Water F-46
  B. Groundwater – Not Applicable F-46
VI. Rationale for Provisions F-46
  A. Standard Provisions F-46
  B. Special Provisions F-46
    1. Reopener Provisions F-46
    2. Special Studies and Additional Monitoring Requirements – Not Applicable F-46
    3. Best Management Practices and Pollution Prevention F-46
    4. Construction, Operation, and Maintenance Specifications – Not Applicable F-47
    5. Special Provisions for Municipal Facilities (POTW's Only) – Not Applicable F-47
    6. Compliance Schedules– Not Applicable F-47
VII. Rationale for Monitoring and Reporting Requirements F-47
  A. Influent Monitoring – Not Applicable F-47
  B. Effluent Monitoring F-47
  C. Whole Effluent Toxicity Testing Requirements F-48
  D. Receiving Water Monitoring F-48

1. Surface Water F-48
2. Groundwater – Not Applicable F-48
E. Other Monitoring Requirements F-48
1. Chemical and Aquaculture Drug Reporting Requirements. F-48
VIII. Public Participation F-49
A. Notification of Interested Parties F-49
B. Written Comments F-49
C. Public Hearing F-49
D. Reconsideration of Waste Discharge Requirements F-50
E. Information and Copying F-50
F. Register of Interested Persons F-50
G. Additional Information F-50

Tables

Table F-1. Facility Information F-3
Table F-2. Historic Effluent Limitations and Monitoring Data F-6
Table F-3. Summary of Technology-based Effluent Limitations F-15
Table F-4. Summary of CTR Criteria for Hardness-dependent Metals F-18
Table F-5. Verification of CTR Compliance for Copper F-23
Table F-6. Verification of CTR Compliance for Silver F-23
Table F-7.Salinity Water Quality Criteria/Objectives F-26
Table F-8. Summary of Water Quality-Based Effluent Limitations F-40
Table F-9. Summary of Final Effluent Limitations F-45

ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	5A34NP00043
CIWQS Facility Place ID	651461
Discharger	Sterling Caviar LLC
Name of Facility	Sterling Caviar LLC, Elverta
Facility Address	9149 E. Levee Road
	Elverta, CA 95626
	Sacramento County
Facility Contact, Title and Phone	Camron King, President, 916-239-8732, Camron.king@sterlingcaviar.com
Authorized Person to Sign and Submit Reports	Camron King, President, 916-239-8732 Camron.king@sterlingcaviar.com and Bobby Renschler, Vice President Operations, 916-991-4420, Bobby.Renschler@sterlingcaviar.com
Mailing Address	SAME
Billing Address	SAME
Type of Facility	Concentrated Aquatic Animal Production/ Fish Hatchery (CAAP Facility)
Major or Minor Facility	Minor
Threat to Water Quality	3
Complexity	C
Pretreatment Program	Not Applicable
Recycling Requirements	Not Applicable
Facility Permitted Flow	3.67 (in million gallons per day)
Facility Design Flow	3.67 (in million gallons per day)
Watershed	Sacramento River Basin
Receiving Water	BKS preserve wetlands
Receiving Water Type	Wetlands

A. Sterling Caviar LLC (hereinafter Discharger) is the owner and operator of Sterling Caviar LLC, Elverta (hereinafter Facility), a fish farm. The Discharger owns the property at 9149 E. Levee Road, Elverta, on which the Facility is located.

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 BKS preserve wetlands. The BKS preserve includes constructed wetlands that were developed by The Natomas Basin Conservancy to provide habitat for the giant garter snake and the Swainson's hawk and are located within Reclamation District No. 1000 (District). The District operates and maintains a drainage system that collects storm water and agricultural drainage that is delivered to pumping plants for disposal in the Sacramento River, a water of the United States.

C. The Discharger submitted a Report of Waste Discharge (ROWD) and applied for a National Pollutant Discharge Elimination System (NPDES) permit on 11 November 2005. Staff has completed several site visits to the Facility since July 2013, to observe operations, evaluate proposed compliance alternatives for arsenic and manganese, and collect additional data to develop permit limitations and requirements for waste discharge.

D. Order R5-2016-0026 was adopted on 21 April 2016 and has been subsequently amended on 8 December 2017 by Order R5-2017-0122 to remove effluent limits for manganese and modify the effluent limits for arsenic based on the allowance of intake water credits.

II. FACILITY DESCRIPTION

The Facility is located at 9149 E. Levee Road, Elverta, Sacramento County, within Assessor's Parcel Numbers (APNs) 35-280-013, as shown in Attachment B. The design daily average flow capacity of the Facility is 3.67 million gallons per day (MGD).

A. Description of Wastewater and Biosolids Treatment and Controls

The Facility reports a total annual harvestable weight of 313,000 pounds of white sturgeon (*Acipenser transmontanus*) and a maximum harvestable weight of 800,000 pounds for sale as meat. The total weight of food fed during the calendar month of maximum feeding (September) is 99,000 pounds. Under the NPDES program, the Facility is considered a concentrated aquatic animal production (CAAP) facility.

Wastes generated at the Facility include fish fecal material, unconsumed fish food, nutrients, algae, silt, chemicals and therapeutic agents used to treat fish and control disease. Chemicals currently used at the Facility include sodium chloride (salt), hydrogen peroxide and oxytetracycline (Terramycin®) as needed. In addition, the Discharger has indicated the potential future use of Chloramine-T at the Facility.

Process supply water is obtained from four wells located near the Facility. The combined capacity of the supply wells is 2165 gpm.

The Facility is composed of main production tanks, intermediate grow-out tanks, and nursery tanks. In the main production and grow-out tanks, source water after gas stripping mixes with re-circulated wastewater. Water from each tank, containing fish excrement and unused food is discharged to a drainage canal that conveys the wastewater to five drum filters to remove particulates and residual ammonia and dissolved organics are removed by a fluidized bed system. Additionally, since Order R5-2007-0012 was adopted the Discharger converted 14 of 15 existing fluidized bed sand biofilters to moving media biofiltration, installed an automated feeder in the production building, and installed stripping/aeration towers. Wastewater may be re-circulated up to 5 times before being discharged. For the nursery tanks, the process supply water receives gas stripping, aeration, and sterilization before entering the tanks. The wastewater from the nursery tanks is used as makeup water for the intermediate grow-out tanks.

The solid waste removed by the drum filters is reintroduced into the wastewater flow prior to discharge. Due to the use of a high quality feed the solid waste accumulation is minimal resulting in low levels of total suspended solids in the effluent (~8 mg/L on average). Any dead fish are sent to the Sacramento Rendering Co. for disposal.

B. Discharge Points and Receiving Waters

1. The Facility is located at 9149 E. Levee Road, Elverta, Sacramento County, within Assessor's Parcel Numbers (APNs) 35-280-013, as shown in Attachment B (Figure B-1), a part of this Order.

2. Treated wastewater is discharged at Discharge Point No. 001 to the Betts-Kismat-Silva (BKS) Preserve wetlands, operated by the Natomas Basin Conservancy (Conservancy) within Reclamation District 1000 for the preservation and enhancement of endangered species and groundwater recharge. The BKS Preserve has a deeded right to the discharge from the Facility since 1990 and the Facility discharge was identified as a source of water for the BKS Preserve in the Final Natomas Basin Habitat Conservation Plan dated 2003. The Conservancy receives 100 percent of the Facility's discharge with excess water overflowing to the agricultural drainage and conveyance system of the Natomas Basin controlled by the Natomas Mutual Water Company (Natomas Mutual) via one of two discharge locations. The BKS Preserve retains approximately 80 percent of the Facility's discharge in the summer months, and retains about 20 percent during the winter months.

3. Natomas Mutual has a water right (licensed dated 1971) to all tailwater generated within the Natomas Basin, including the discharge from BKS Preserve. Natomas Mutual supplies water to agricultural entities within the Natomas Basin and imports approximately 80,000 acre feet of water to the Natomas Basin from the Sacramento River for agriculture use. Natomas Mutual recycles 100 percent of the tailwater generated within the Natomas Basin for agricultural purposes, including discharge coming off of the BKS Preserve (discharge from the Facility),during most of the year. In January, February, March, and October, however, some water is not used for irrigation and is pumped to the Sacramento River. Tailwater is still used for agriculture during this period including rice decomposition, irrigation for upland agriculture (such as winter wheat and onions), and flooding of fields for wildlife habitat; however, the volume used for these activities varies.

   From the Reclamation District 1000, wastewater flows to the Natomas Cross Canal and Natomas East Main Drainage Canal, and ultimately discharges to the Sacramento River, a water of the United States. District 1000 operates and maintains a drainage system that collects storm water and agricultural runoff within the Natomas Basin and the District 1000 boundaries, which are the same. The boundary is represented by the confining levees that isolate the Basin. District 1000 discharges water from the Natomas Basin at seven locations (pump stations). One pump station discharges into the Natomas Cross Canal; four discharge into the Sacramento River and two discharge into the Natomas East Main Drain Canal. NPDES permits are not required for these pumping activities because they discharge irrigation return water that is exempt from NPDES regulations. District 1000 normally only pumps water during the flood season, for example October to April; however, they may discharge outside this period depending on rainfall or when rice fields are drained (typically August and September). Natomas Mutual uses water in the District 1000 canals to provide irrigation water to farmers during the spring and summer which is the reason District 1000 does not normally need to pump water during that time.

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

Effluent limitations contained in Order R5-2007-0012 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order R5-2007-0012 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (August 2010 – June 2015)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
pH	standard units	--	--	6.5-8.0 [1]	--	--	6.32-7.56 [2]
Arsenic	µg/L	10	--	--	14	--	14
Chloride	mg/L	106		--	40.7	--	40.7
Manganese	µg/L	50		--	139	--	139
Nitrate (as N)	mg/L	10		--	3.6		3.6
Formaldehyde	mg/L	0.6		--	[3]	[3]	[3]

[1] Instantaneous minimum and maximum effluent limitations
[2] Range of monitoring results for minimum and maximum daily readings
[3] Not applied during this permit term. The Discharger is no longer applying Formaldehyde.

D. Compliance Summary – Not Applicable

E. Planned Changes – Not Applicable

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 for the adopted a Water Quality Control Plan, Fourth Edition (Revised October 2011), for the Sacramento and San Joaquin River Basins (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. In addition, State Water Board Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the

municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. The beneficial uses of the Reclamation District 1000 are not specifically mentioned in the Basin Plan, but the Basin Plan does identify present and potential uses for the Sacramento River, to which the Reclamation District 1000, via the Natomas Cross Canal and Natomas East Main Drainage, is tributary. These beneficial uses are as follows: municipal and domestic supply; agricultural supply; water contact recreation, including canoeing and rafting; non-contact water recreation, including aesthetic enjoyment; warm freshwater habitat; cold freshwater habitat; warm migration of aquatic organisms; cold migration of aquatic organisms; warm spawning, reproduction, and/or early development; cold spawning, reproduction, and /or early development; navigation; and wildlife habitat.

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 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California"). Resolution 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Central Valley Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.

5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

6. **Domestic Water Quality.** In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum

contaminant levels designed to protect human health and ensure that water is safe for domestic use.

7. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

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 USEPA 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 (WQLSs), 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*."

2. **Total Maximum Daily Loads (TMDL's).** USEPA requires the Central Valley Water Board to develop TMDL's for each 303(d) listed pollutant and water body combination.

E. Other Plans, Polices and Regulations

CAAP facilities produce fish and other aquatic animals in greater numbers than natural stream conditions would allow; therefore, system management is important to ensure that fish do not become overly stressed, making them more susceptible to disease outbreaks. The periodic use of various aquaculture drugs and chemicals is needed to ensure the health and productivity of cultured aquatic stocks and to maintain production efficiency. It is the responsibility of those using, prescribing, or recommending the use of these products to know which aquaculture drugs and chemicals may be used in CAAP facilities under all applicable federal, State, and local regulations and which aquaculture drugs and chemicals may be discharged to waters of the United States and waters of the State in accordance with this Order.

Drugs and chemicals used in aquaculture are strictly regulated by the U.S. Food and Drug Administration (FDA) through the Federal Food, Drug, and Cosmetic Act (FFDCA; 21 U.S.C 301-392). FFDCA, the basic food and drug law of the United States, includes provisions for regulating the manufacture, distribution, and the use of, among other things, new animal drugs and animal feed. FDA's Center for Veterinary Medicine (CVM) regulates the manufacture, distribution, and use of animal drugs. CVM is responsible for ensuring that drugs used in food-producing animals are safe and effective and that food products derived from treated animals are free from potentially harmful residues. CVM approves the use of new animal drugs based on data provided by a sponsor (usually a drug company). To be approved by CVM, an animal drug must be effective for the claim on the label, and safe when used as directed for (1) treated animals; (2) persons administering the treatment; (3) the environment, including non-target organisms; and (4) consumers. CVM establishes tolerances and animal withdrawal periods as needed for all drugs approved for use in food-producing animals. CVM

has the authority to grant investigational new animal drug (INAD) exemptions so that data can be generated to support the approval of a new animal drug.

CAAP facilities may legally obtain and use aquaculture drugs in one of several ways. Some aquaculture drugs and chemicals used at CAAP facilities in the Central Valley Region are approved by the FDA for certain aquaculture uses on certain aquatic species. Others have an exemption from this approval process when used under certain specified conditions. Others are not approved for use in aquaculture, but are considered to be of "low regulatory priority" by FDA (hereafter "LRP drug"). FDA is unlikely to take regulatory action related to the use of a LRP drug if an appropriate grade of the chemical or drug is used, good management practices are followed, and local environmental requirements are met (including NPDES permit requirements). Finally, some drugs and chemicals may be used for purposes, or in a manner not listed on their label (i.e., "extra-label" use), under the direction of licensed veterinarians for the treatment of specific fish diseases diagnosed by fish pathologists. It is assumed that veterinarian-prescribed aquaculture drugs are used only for short periods of duration during acute disease outbreaks. Each of these methods of obtaining and using aquaculture drugs is discussed in further detail below.

FDA-approved Aquaculture Drugs

Approved aquaculture drugs have been screened by the FDA to determine whether they cause significant adverse public health or environmental impacts when used in accordance with label instructions. Currently, there are nine aquaculture drugs approved by FDA for use in food-producing aquatic species. These nine FDA-approved aquaculture drugs include the following:

1. Chorionic gonadotropin (Chlorulun®), used for spawning;
2. Oxytetracycline hydrochloride (TERRAMYCIN 343 (oxytetracycline HCl) Soluble Powder, PENNOX 343, Oxymarine™, xytetracycline HCl Soluble Powder-343, and TETROXY Aquatic), an antibiotic;
3. Sulfadimethoxine/ormetoprim (Sulfamerazine and Romet-30®), an antibiotic;
4. Tricaine methanesulfonate (Tricaine-S), an anesthetic;
5. Formaldehyde (Formalin-F®, Formacide-B, and PARASITE-S®), used as a fungus and parasite treatment;
6. Chloramine-T (HALAMID® Aqua), an antibiotic;
7. Florfenicol (AquaflorÒ), an antibiotic;
8. Hydrogen peroxide (35% PEROX-AID®), used to control fungal and bacterial infections.
9. Oxytetracycline dehydrate (Terramycin® 200 for Fish), antibiotic and bacteriostat.

Each aquaculture drug in this category is approved by the FDA for use on specific fish species, for specific disease conditions, at specific dosages, and with specific withdrawal times. Product withdrawal times must be observed to ensure that any product used on aquatic animals at a CAAP facility does not exceed legal tolerance levels in the animal tissue. Observance of the proper withdrawal time helps ensure that products reaching consumers are safe and wholesome.

FDA-approved aquaculture drugs that are added to aquaculture feed must be specifically approved for use in aquaculture feed. Drugs approved by FDA for use in feed must be found safe and effective. Approved aquaculture drugs may be mixed in feed for uses and at levels that are specified in FDA medicated-feed regulations only. It is unlawful to add drugs to feed unless the drugs are approved for such feed use. For example, producers may not top-dress

feed with water-soluble, over-the-counter antibiotic product. Feed manufacturers must be 21 C.F.R. 558.4 compliant and registered with the FDA as a medicated feed mill.

FDA Investigational New Aquaculture Drugs (INAD)

Aquaculture drugs in this category can only be used under an investigational new animal drug or "INAD" exemption. INAD exemptions are granted by FDA CVM to permit the purchase, shipment and use of an unapproved new animal drug for investigational purposes. INAD exemptions are granted by FDA CVM with the expectation that meaningful data will be generated to support the approval of a new animal drug by FDA in the future. Numerous FDA requirements must be met for the establishment and maintenance of aquaculture INADs.

There are two types of INADs: standard and compassionate. Aquaculture INADs, most of which are compassionate, consist of two types: routine and emergency. A compassionate INAD exemption is used in cases in which the aquatic animal's health is of primary concern. In certain situations, producers can use unapproved drugs for clinical investigations (under a compassionate INAD exemption) subject to FDA approval. In these cases, CAAP facilities are used to conduct closely monitored clinical field trials. FDA reviews test protocols, authorizes specific conditions of use, and closely monitors any drug use under an INAD exemption. An application to renew an INAD exemption is required each year. Data recording and reporting are required under the INAD exemption in order to support the approval of a new animal drug or an extension of approval for new uses of the drug.

FDA Unapproved New Aquaculture Drugs Of Low Regulatory Priority (LRP drugs)

LRP drugs do not require a new animal drug application (NADA) or INAD exemptions from FDA. Further regulatory action is unlikely to be taken by FDA on LRP drugs as long as an appropriate grade of the drug or chemical is used, good management practices are followed, and local environmental requirements are met (such as NPDES permit requirements contained in this Order). LRP drugs commonly used at CAAP facilities in the Central Valley Region include the following:

1. Acetic acid, used as a dip at a concentration of 1,000-2,000 mg/L for 1-10 minutes as a parasiticide.
2. Carbon dioxide gas, used for anesthetic purposes.
3. Povidone iodine (PVP) compounds, used as a fish egg disinfectant at rates of 50 mg/L for 30 minutes during egg hardening and 100 mg/L solution for 10 minutes after water hardening.
4. Sodium bicarbonate (baking soda), used at 142-642 mg/L for 5 minutes as a means of introducing carbon dioxide into the water to anesthetize fish.
5. Sodium chloride (salt), used at 0.5-1% solution for an indefinite period as an osmoregulatory aid for the relief of stress and prevention of shock. Used as 3% solution for 10-30 minutes as a parasiticide.
6. Calcium chloride, used to increase water calcium concentration to ensure egg hardening. Dosages used would be those necessary to raise calcium concentration to 10 to 20 ppm $CaCO_3$. Used up to 150 mg/L indefinitely to increase the hardness of water for holding and transporting fish in order to enable fish to maintain osmotic balance.
7. Calcium oxide, used as an external protozoacide for fingerlings to adult fish at a concentration of 2,000 mg/L for 5 seconds.
8. Fuller's earth, used to reduce the adhesiveness of fish eggs to improve hatchability.

9. Garlic (whole form), used for control of helminth and sea lice infestations in marine salmonids at all life stages.
10. Ice, used to reduce metabolic rate of fish during transport.
11. Magnesium sulfate, used to treat external monogenic trematode infestations and external crustacean infestations in freshwater fish species at all life stages. Fish are immersed in a 30,000 mg MgSO4/L and 7,000 mg NaCl/L solution for 5 to 10 minutes.
12. Onion (whole form), used to treat external crustacean parasites and to deter sea lice from infesting the external surface of salmonids at all life stages.
13. Papain, used in a 0.2% solution to remove the gelatinous matrix of fish egg masses in order to improve hatchability and decrease the incidence of disease.
14. Potassium chloride, used as an aid in osmoregulation; relieves stress and prevents shock. Dosages used would be those necessary to increase chloride ion concentration to 10 to 2,000 mg/L.
15. Sodium sulfite, used in a 1.5% solution for 5 to 8 minutes to treat eggs in order to improve their hatchability.
16. Thiamine hydrochloride, used to prevent or treat thiamine deficiency in salmonids. Eggs are immersed in an aqueous solution of up to 100 ppm for up to 4 hours during water hardening. Sac fry are immersed in an aqueous solution of up to 1,000 ppm for up to 1 hour.
17. Urea and tannic acid, used to denature the adhesive component of fish eggs at concentrations of 15g urea and 20g NaCl/5 liters of water for approximately 6 minutes, followed by a separate solution of 0.75 g tannic acid/5 liters of water for an additional 6 minutes. These amounts will treat approximately 400,000 eggs.

FDA is unlikely to object at present to the use of these LRP drugs if the following conditions are met:

1. The aquaculture drugs are used for the prescribed indications, including species and life stages where specified.
2. The aquaculture drugs are used at the prescribed dosages (as listed above).
3. The aquaculture drugs are used according to good management practices.
4. The product is of an appropriate grade for use in food animals.
5. An adverse effect on the environment is unlikely.

FDA's enforcement position on the use of these substances should be considered neither an approval nor an affirmation of their safety and effectiveness. Based on information available in the future, FDA may take a different position on their use. In addition, FDA notes that classification of substances as new animal drugs of LRP does not exempt CAAP facilities from complying with all other federal, state and local environmental requirements, including compliance with this Order.

Extra-Label Use Of An Approved New Aquaculture Drug

Extra-label drug use is the actual or intended use of an approved new animal drug in a manner that is not in accordance with the approved label directions. This includes, but is not limited to, use on species or for indications not listed on the label. Only a licensed veterinarian may prescribe extra-label drugs under FDA CVM's extra-label drug use policy. CVM's extra-label use drug policy (CVM Compliance Policy Guide 7125.06) states that

licensed veterinarians may consider extra-label drug use in treating food-producing animals if the health of the animals is immediately threatened and if further suffering or death would result from failure to treat the affected animals. CVM's extra-label drug use policy does not allow the use of drugs to prevent diseases (prophylactic use), improve growth rates, or enhance reproduction or fertility. Spawning hormones cannot be used under the extra-label policy. In addition, the veterinarian assumes the responsibility for drug safety and efficacy and for potential residues in the aquatic animals.

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 Plans contain 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) USEPA's published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board's "Policy for Application of Water Quality Objectives")(40 C.F.R. § 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.00) The Basin Plan states that material and relevant information, including numeric

criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, "…*water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)*" in Title 22 of CCR. The Basin Plan further states that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCLs. The narrative tastes and odors objective states: "*Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.*"

A. Discharge Prohibitions

1. **Prohibition III.A (No discharge or application of waste other than that described in this Order).** This prohibition is based on Water Code section 13260 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 CFR section122.41(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

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 ELGs for the Concentrated Aquatic Animal Production Point Source Category in 40 C.F.R. Part 451.

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.

A concentrated aquatic animal production (CAAP) facility is defined in Title 40 of the Code of Federal Regulations (40 CFR 122.24) as a fish hatchery, fish farm, or other facility that contains, grows, or holds cold- or warm-water fish species or other cold- or warm-water aquatic animals in ponds, raceways, or other similar structures, which discharge at least 30 days per year, produce at least 20,000 pounds harvest weight of aquatic animals per year for cold-water species or at least 100,000 pounds harvest weight of aquatic animals per year for warm-water species, and for cold-water species, only, it must also feed at least 5,000 pounds of food during the calendar month of maximum feeding.

Facilities that do not meet the above criteria may also be designated a CAAP facility upon a determination that the facilities are a significant contributor of pollution to waters of the United States [40 CFR 122.24(c)].

Recirculating CAAP facilities are designed to minimize water requirements, which leads to small-volume, concentrated waste streams as well as makeup water overflow. Waste streams from recirculating systems are typically a small but continuous flowing effluent. Flows from CAAP facilities ultimately are discharged to waters of the United States and of the State. 40 CFR 122.24 specifies that CAAP facilities are point sources subject to the National Pollutant Discharge Elimination System (NPDES) program. The Discharger's facility meets the NPDES definition of a recirculating CAAP facility.

The operation of CAAP facilities may introduce a variety of pollutants into receiving waters. USEPA identifies three classes of pollutants: (1) conventional pollutants (i.e., total suspended solids (TSS), oil and grease (O&G), biochemical oxygen demand (BOD), fecal coliform, and pH); (2) toxic pollutants (e.g., metals such as copper, lead, nickel, and zinc and other toxic pollutants; and (3) non-conventional pollutants (e.g., ammonia-N, Formalin, and phosphorus). Some of the most significant pollutants discharged from CAAP facilities are solids from uneaten feed and fish feces that settle to the bottom of the raceways. Both of these types of solids are primarily composed of organic matter including BOD, organic nitrogen, and organic phosphorus.

The CWA requires U.S. EPA to develop effluent limitations, guidelines and standards (ELGs) 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 ELGs 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.

On 23 August 2004 USEPA published ELGs for the Concentrated Aquatic Animal Production Point Source Category (40 C.F.R. Part 451). The ELG became effective on 22 September 2004. The ELG regulation establishes national technology-based effluent discharge requirements for flow-through and recirculation systems and for net pens based on BPT, BCT, BAT and NSPS.

In the process of developing the ELGs, USEPA identified an extensive list of pollutants of concern in discharges from the aquaculture industry, including several metals, nutrients, solids, BOD, bacteria, drugs, and residuals of federally registered pesticides. USEPA did not include specific numerical limitations in the ELG for any pollutants on this list, believing that best management practices would provide acceptable control of these pollutants. USEPA did conclude during the development of the ELG that control of suspended solids would also effectively control concentrations of other pollutants of concern, such as BOD, metals and nutrients, because other pollutants are either bound to the solids or are incorporated into them. And, although certain bacteria are found at high levels in effluents from settling basins, USEPA concluded that disinfection is not economically achievable. USEPA also allowed permitting authorities to apply technology-based limits for other pollutants and water quality-based numeric effluent limits for pollutants considered in the ELG in order to comply with applicable water quality standards.

2. Applicable Technology-Based Effluent Limitations

a. **BOD_5 and TSS.** USEPA's final ELG for the aquaculture industry does not include numeric effluent limitations on any conventional, non-conventional, or toxic constituents. Rather, USEPA promulgated qualitative limitations in the form of BMP requirements. Technology-based requirements in this Order are based on the ELG. To comply with the ELG, this Order includes a narrative effluent limitation that requires the Discharger to minimize the discharge of total suspended solids to the BAT/BCT through implementing best management practices established in the Special Provision contained in section VI.C.3 of this Order.

b. **Flow.** This Order contains a maximum daily effluent discharge flow limitation of 3.67 mgd based on the maximum daily effluent flow of 3.67 mgd reported in the Discharger's ROWD.

Summary of Technology-based Effluent Limitations
Discharge Point 001

Table F-3. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	--	--	3.67	--	--
Biochemical Oxygen Demand	mg/L	Narrative[1]	--	--	--	--
Total Suspended Solids	mg/L	Narrative[1]	--	--	--	--

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum

[1] The Discharger shall minimize the discharge of Biochemical Oxygen Demand and Total Suspended Solids through the implementation of the best management practices established in Special Provision VI.C.3 of this Order.

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 Plans state: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…*" and with respect to disposal of wastewaters states that "...disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses."

The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*" Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 CFR 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 beneficial uses of the BKS Preserve wetlands are not specifically identified with the MUN designation in the Basin Plan. However, this Order interprets the beneficial uses of the receiving waters to include the beneficial use of MUN through implementation of State Water Board Resolution No. 88-63.

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 from 23 August 2010 through 15 June 2015, which includes effluent data submitted in SMRs**.**

c. **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. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default USEPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.

d. **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 one-day flow with an average reoccurrence frequency of once in ten years (1Q10) and the lowest average seven consecutive day flow with an average reoccurrence frequency of once in ten years (7Q10). [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 three 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.

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[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)

Summary findings

Under all discharge conditions the wetlands within Betts-Kismat-Silva preserve is effluent dominated. Under these regularly occurring critical conditions the effluent is the receiving water that is used to define the ambient receiving water conditions to define the appropriate water quality criteria in accordance with the CTR and SIP. The ambient hardness for the wetlands within Betts-Kismat-Silva preserve is represented by the data in Figure F-1, below, which shows ambient hardness ranging from 106 mg/L to 142 mg/L based on all collected ambient data from 23 August 2010 through 13 May 2015. 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 106 mg/L (minimum) up to 142mg/L (maximum). Staff recommends that the Board use the ambient hardness values shown in Table F 4 for the following reasons.

i. Using the ambient receiving water hardness values shown in Table F-4 will result in criteria and effluent limitations that ensure protection of beneficial uses under all ambient receiving water conditions.

ii. The Water Code mandates that the Central Valley Water Board establish permit terms that will ensure the reasonable 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-4 to calculate the proposed effluent limitations for hardness-dependent metals. The proposed effluent limitations are protective of beneficial uses under all flow conditions.

iii. Using the ambient hardness values shown in Table F-4 is consistent with the CTR and SIP's requirements for developing metals criteria.

Table F-4. Summary of CTR Criteria for Hardness-dependent Metals

CTR Metals	Ambient Hardness (mg/L)[2]	CTR Criteria (µg/L, total recoverable)[1]	
		acute	chronic
Copper	106	15	9.8
Chromium III	106	1800	220
Cadmium	106 (acute) 106 (chronic)	4.8	2.6
Lead	106	88	3.4
Nickel	106	490	55
Silver	106	4.5	--
Zinc	106	126	126

[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 effluent water hardness measurements from the dataset shown in Figure F-1.

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 106 mg/L 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 $CaCO_3$) [7]

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 than one exceedance of the applicable criteria in a three year period.[8] Where design flows for aquatic life criteria include the lowest one-day flow with an average reoccurrence frequency of once in ten years (1Q10) and the lowest average seven consecutive day flow with an average reoccurrence frequency of once in ten years (7Q10). Since the wetlands within Betts-Kismat-Silva preserve contains no upstream flow, the critical design flow is zero.

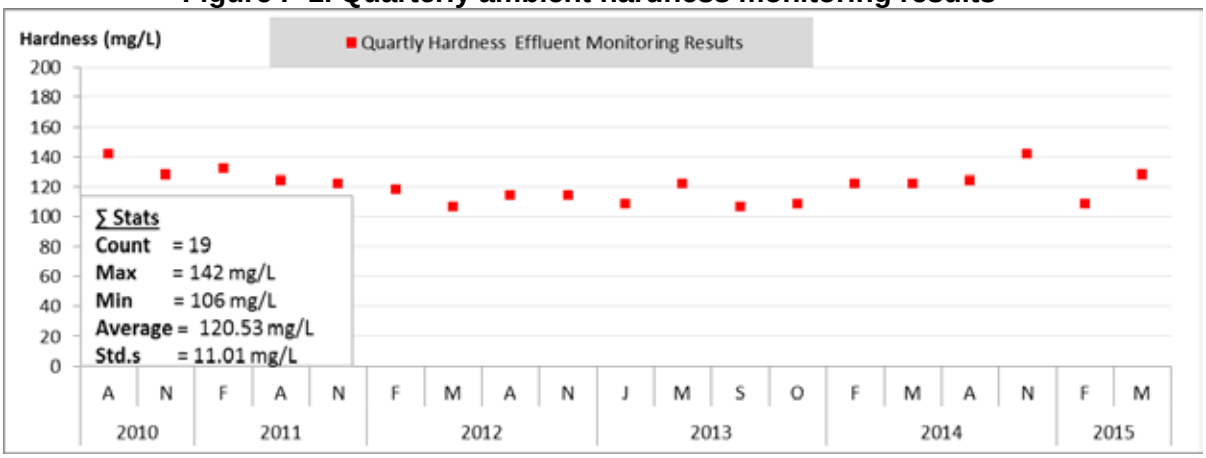
Ambient conditions

The ambient receiving water hardness varied from 106 mg/L to 142 mg/L, based on 19 samples from 23 August 210 through 13 May 2015 (see Figure F-1).

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

[8] 40 C.F.R. §131.38(c)(2)(iii) Table 4, notes 1 and 2

Figure F-1. Quarterly ambient hardness monitoring results



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.

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.

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.

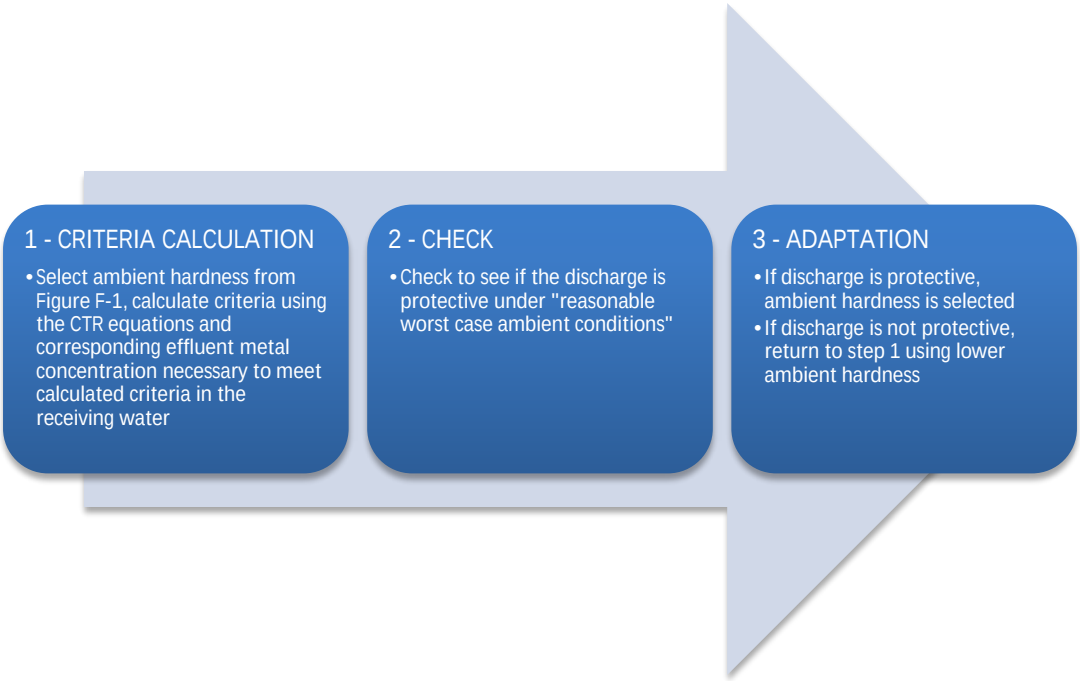
- "High receiving water flow (maximum receiving water flow)." This additional flow condition has been selected consistent with the Davis Order, which required that the hardness selected be protective of water quality criteria under all flow conditions.

- "Low receiving water hardness." The minimum receiving water hardness condition of 34 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). This is a design condition 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.



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 142 mg/L. Effluent metal concentrations necessary to meet the above calculated CTR criteria in the receiving water are calculated in accordance with the SIP.[9] 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 USEPA as "a definition of effluent water quality that is necessary to meet the water quality standards in the receiving water."[10] 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.

[9] SIP Section 1.4.B, Step 2, provides direction for calculating the Effluent Concentration Allowance.
[10] U.S. EPA Technical Support Document for Water Quality-based Toxics Control (TSD), pg. 96.

2. CHECK. USEPA's simple mass balance equation[11] 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.

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.

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-4, 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-5 and F-6 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 106 mg/L (copper) and 106 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-5 and F-6 below, summarize the critical flow conditions. However, the analysis evaluated all flow conditions to ensure compliance with the CTR criteria at all times.

[11] U.S. EPA NPDES Permit Writers' Handbook (EPA 833-K-10-001 September 2010, pg. 6-24)

Table F-5. Verification of CTR Compliance for Copper

Receiving water hardness used to compute effluent limitations				**106 mg/L**
Effluent Concentration Allowance (ECA) for Copper[2]				**9.8 µg/L**
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			**Complies with CTR Criteria?**
	Hardness	**CTR Criteria (µg/L)**	**Ambient Copper Concentration[1] (µg/L)**	
1Q10[3]	106	9.8	9.8	**Yes**
7Q10[3]	106	9.8	9.8	**Yes**
Max receiving water flow[3]	106	9.8	9.8	**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 copper as it demonstrates no reasonable potential.
3 The discharge to the BKS preserve wetlands is always effluent dominated (i.e., 100 percent effluent) because there is no upstream receiving water flow.

Table F-6. Verification of CTR Compliance for Silver

Receiving water hardness used to compute effluent limitations				**106 mg/L**
Effluent Concentration Allowance (ECA) for Silver[2]				**4.5 µg/L**
	Downstream Ambient Concentrations Under Worst-Case Ambient Receiving Water Conditions			**Complies with CTR Criteria?**
	Hardness	**CTR Criteria (µg/L)**	**Ambient Silver Concentration[1] (µg/L)**	
1Q10[3]	106	4.5	4.5	**Yes**
7Q10[3]	106	4.5	4.5	**Yes**
Max receiving water flow[3]	106	4.5	4.5	**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 The discharge to the BKS preserve wetlands is always effluent dominated (i.e., 100 percent effluent) because there is no upstream receiving water flow.

3. Determining the Need for WQBEL's

The reasonable potential analysis (RPA) evaluation was completed with effluent data from September 2010 through June 2015. Additional data from an arsenic and manganese special study collected between January and June 2017 was used for the arsenic and manganese RPA evaluation. However, since background receiving surface water monitoring is not feasible and, therefore, not required in this Order (See attachment F, Section VI.D) receiving surface water monitoring data was not available to complete the RPA.

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. **Ammonia**

(a) **WQO.** The 1999 USEPA National Ambient Water Quality Criteria (NAWQC) for the protection of freshwater aquatic life for total ammonia (the "1999 Criteria"), recommends acute (1-hour average; criteria maximum concentration or CMC) standards based on pH and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. USEPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC.

The USEPA recently published national recommended water quality criteria for the protection of aquatic life from the toxic effects of ammonia in freshwater (the "2013 Criteria")[12]. The 2013 Criteria is an update to USEPA's 1999 Criteria, and varies based on pH and temperature. Although the 2013 Criteria reflects the latest scientific knowledge on the toxicity of ammonia to certain freshwater aquatic life, including new toxicity data on sensitive freshwater mussels in the Family Unionidae, the species tested for development of the 2013 Criteria may not be present in some Central Valley waterways. The 2013 Criteria document therefore states that, "*unionid mussel species are not prevalent in some waters, such as the arid west …*" and provides that, "*In the case of ammonia, where a state demonstrates that mussels are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site.*"

Studies are currently underway to determine how the latest scientific knowledge on the toxicity of ammonia reflected in the 2013 Criteria can be implemented in the Central Valley Region as part of a Basin Planning effort to adopt nutrient and ammonia objectives. Until the Basin Planning process is completed, the Central Valley Water Board will continue to implement the 1999 Criteria to interpret the Basin Plan's narrative toxicity objective. The 1999 NAWQC for the protection of freshwater aquatic life for total ammonia, recommends acute (1-hour average; criteria maximum concentration or CMC) standards based on pH and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. USEPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. USEPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not

[12] *Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater*, published August 2013 [EPA 822-R-13-001]

influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature.

The maximum observed effluent pH was 7.6. To protect against the worst-case short-term exposure of an organism, a pH value of 7.6 was used to derive the acute criterion. Salmonids are not present in the receiving water, so the CMC was calculated with salmonids absent. The resulting acute criterion for ammonia is 18.3 mg/L (as N).

Based on paired effluent pH and temperature data a worst-case 30-day CCC for ammonia was calculated as 3.1 mg/L (as N) considering the presence of fishes early life stages. The 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 3.1 mg/L (as N), the 4-day average concentration that should not be exceeded is 7.8 mg/L (as N).

(b) **RPA Results.** The maximum effluent concentration (MEC) for ammonia was 2.27 mg/L. The ammonia concentration in the discharge does not exceeds the criteria, therefore the effluent does not have a reasonable potential to cause or contribute to an in-stream excursion above the narrative toxicity objective.

ii. **Nitrate.**

WQO. DPH has adopted Primary MCLs for the protection of human health for nitrate that is equal to 10 mg/L (measured as nitrogen). DPH has also adopted a Primary MCL of 10 mg/L for the sum of nitrate and nitrite, measured as nitrogen. The previous order contains a final AMEL for nitrate plus nitrite of 10 mg/L (total as N), based on the Primary MCL.

(a) **RPA Results.** The maximum effluent concentration (MEC) for nitrate was 3.6 mg/L. Therefore, nitrate in the discharge does not demonstrate a reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL. Since Order R5-2007-0012 was adopted the Discharger has implemented several operational changes such as:

- Converted 14 of 15 existing fluidized bed sand biofilters to moving media biofiltration
- Installed an automated feeder in the production building
- Installed stripping/aeration towers.

These operational changes and facility upgrades have resulted in compliance with the final nitrate limits. Thus, there is no need for a nitrate effluent limitation in this Order.

iii. **Formaldehyde**

(a) **WQO.** See description under Aquaculture Drugs and Chemicals (Section d. ii).

(b) **RPA Results.** The Discharger has not applied formaldehyde since 12 January 2007 and does not plan to use it. Additionally, this order does not allow the use of it. Therefore, the discharge does not exhibit reasonable potential to cause or contribute to an excursion of the applicable water quality objectives. The effluent limitations for formalin included in previous Order R5-2007-0012 have been removed in this

Order. The removal of the effluent limitations complies with the federal antibacksliding regulations as discussed in Section IV.D.3.

iv. **Salinity**

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

Table F-7.Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Objective[1]	Secondary MCL[2]	USEPA NAWQC	Effluent	
				Average[3]	Maximum
EC (µmhos/cm)	Varies[2]	900, 1600, 2200	N/A	472	479
TDS (mg/L)	Varies	500, 1000, 1500	N/A	300	325
Chloride (mg/L)	Varies	250, 500, 600	860 1-hr 230 4-day	38	41

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 MCLs 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. The Basin Plan contains a narrative objective for chemical constituents that state, in part, “Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.” Agricultural irrigation, municipal and domestic

supply are beneficial uses of the receiving water. The Agricultural Water Quality Goal for chloride is 106 mg/L.

(2) **Electrical Conductivity.** The Secondary MCL for EC is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum

(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 TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum

(b) **RPA Results.**

(1) **Chloride.** Chloride concentrations in the effluent ranged from 30.2 mg/L to 40.7 mg/L, with an average of 36.0 mg/L for 54 samples collected by the Discharger from 21 September 2010 through 15 June 2015. These levels do not exceed the agricultural Water Quality Goal for chloride of 106 mg/L.

(2) **Electrical Conductivity.** A review of the Discharger's monitoring reports shows an average effluent EC of 444.7 µmhos/cm, with a range from 364 µmhos/cm to 479 µmhos/cm. These levels do not exceed the Secondary MCL for EC of 900 µmhos/cm.

(3) **Sulfate.** Sulfate monitoring was not required in the previous order.

(4) **Total Dissolved Solids.** The average TDS effluent concentration was 279.7 mg/L with concentrations ranging from 244 mg/L to 325 mg/L. These levels do not exceed the Secondary MCL for TDS of 500mg/L.

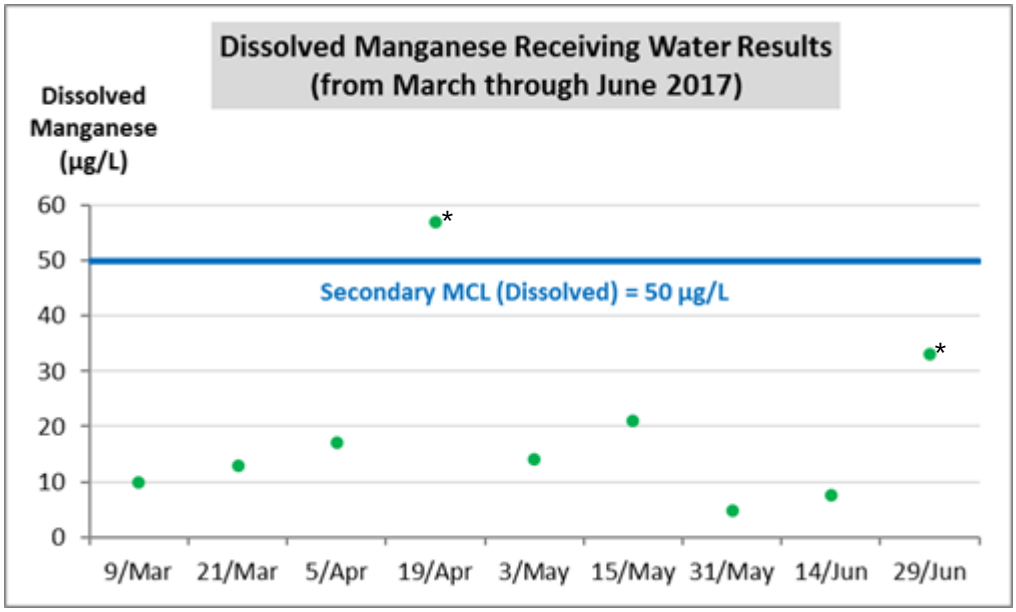
v. **Manganese**

(a) **WQO.** The Secondary MCL - Consumer Acceptance Limit for manganese is 50 µg/L (dissolved). The Secondary MCL is derived from human welfare considerations (e.g., taste, odor, laundry staining), not for toxicity. Secondary MCL's are drinking water standards contained in Title 22 of the CCR that were developed by the State Water Board Division of Drinking Water (DDW). DDW has advised that compliance with the dissolved fraction of MCLs in source waters is fully protective of the MUN beneficial use. Furthermore, manganese is not a toxic contaminant, therefore, short-term exceedances do not result in any health consequence and DDW recommends compliance with the Secondary MCL based on annual average concentrations.

(b) **RPA Results.** For priority pollutants, the SIP dictates the procedures for conducting the RPA. Manganese is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgement in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent. As part of the compliance efforts regarding arsenic and manganese, the Discharger conducted a special study in which dissolved metals and total recoverable metals monitoring was conducted from January through June 2017 in the effluent and downstream receiving water.

Based on 10 samples the average effluent dissolved manganese was 63.6 µg/L, which exceeds the Secondary MCL. However, to evaluate whether the discharge was causing or contributing to exceedances of the Secondary MCL in the receiving water the Discharger conducted dissolved manganese sampling of the water flowing out of the BKS preserve wetlands. Based on 11 samples the average receiving water dissolved manganese was 18.1 µg/L. Figure F-2, below, shows the receiving water monitoring data consistently complies with the Secondary MCL. Therefore, the Central Valley Water Board finds the discharge does not have reasonable potential to cause or contribute to an exceedance of the Secondary MCL in the receiving water.

Figure F-2. Bi-monthly manganese receiving water monitoring results from March through June 2017



* The Discharger reported the receiving water was turbid at the time the samples were collected on 19 April and 29 June 2017, due to maintenance activities in the wetlands.

b. **Constituents with No Data or Insufficient Data.** Reasonable potential cannot be determined for the following constituents because effluent data are limited or ambient background concentrations are not available. The Discharger is required to continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further analysis will be conducted to determine whether to add numeric effluent limitations or to continue monitoring.

i. **Antimony**

(a) **WQO.** The California Department of Public Health has adopted a Primary MCL for antimony of 6 µg/L, which implements the Basin Plan's chemical constituents objective.

(b) **RPA Results.** The MEC for antimony was 21.7 µg/L based on a sample collected on 20 August 2007. Samples collected on 16 March 2006 and 14 October 2015 were non detect. (see results below).

Sample Date	Result (µg/L)	Reporting Level µg/L	Analytical Method
3/16/2006	ND	2	EPA 200.8
8/20/2007	21	10	EPA 200.7
10/14/2015	ND	10	EPA 6010B

The Central Valley Water Board finds there is insufficient information to conduct the reasonable potential analysis. Section 1.3, Step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Instead of limitations, additional monitoring has been established for antimony. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.

c. **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 arsenic. WQBEL's for arsenic are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for arsenic is provided below.

i. **Arsenic**

(a) **WQO.** The USEPA and California DDW Primary Maximum Contaminant Level (MCL) is 10 µg/L for arsenic. Primary MCLs are established to protect public health from acute and chronic effects of bacteriological, chemical and radiological constituents in drinking water.

(b) **RPA Results.** The maximum effluent concentration (MEC) for total recoverable arsenic was 14 µg/L, based on 22 samples between May 2016 and January 2017. As part of the compliance efforts regarding arsenic and manganese, the Discharger conducted a special study in which dissolved metals and total recoverable metals monitoring was conducted from January through June 2017 in the effluent and downstream receiving water. Based on the monitoring results of this study the MEC for dissolved arsenic was 11 µg/L and the average downstream receiving water dissolved arsenic concentration was 12 µg/L. Therefore, arsenic in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the water quality objective and WQBELs are required.

The Central Valley Water Board recognizes that the background arsenic concentrations in the groundwater used to supply the Facility also exceed the primary MCL. Consequently, water intake credits in accordance with section 1.4.4 of the SIP have been considered for developing the WQBEL's, as discussed below.

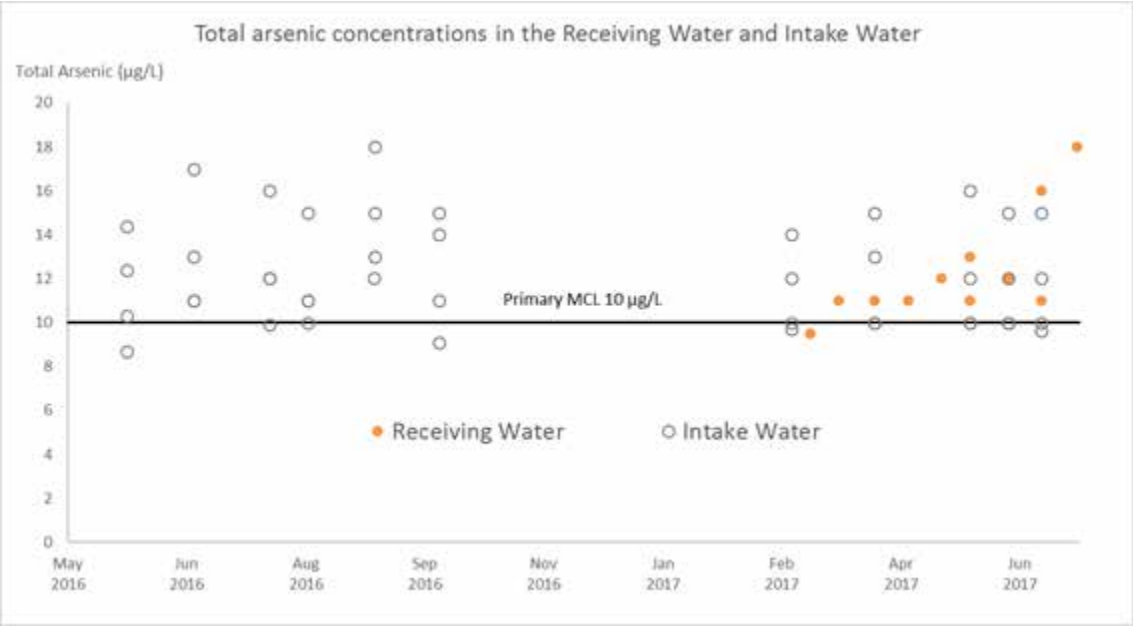
(c) **WQBEL's.** The SIP section 1.4.4 allows for the consideration of intake water credits when developing WQBEL's under specific circumstances. If the discharge meets the conditions for intake water credits the WQBEL's may be established allowing the facility to discharge a mass and concentration of pollutant that is no greater than the mass and

concentration found in its intake water. The discharge meets the SIP conditions to allow intake water credits for arsenic as described below:

SIP Condition 1. *The observed maximum ambient background concentration, as determined in section 1.4.3.1 of the SIP, and the intake water concentration of the pollutant exceeds the most stringent applicable criterion/objective for that pollutant.*

Arsenic concentrations in the Facility's intake water supply wells and the wetlands are similar and consistently exceed the Primary MCL (Figure F-3).

Figure F-3. Total Arsenic Concentration in Receiving Water and Intake Water



SIP Condition 2*. The intake water credits provided are consistent with any TMDL applicable to the discharge that has been approved by the Regional Water Board, State Water Board, and USEPA.*

There are no TMDLs applicable to the discharge.

SIP Condition 3*. The intake water is from the same water body as the receiving water body. The discharger may demonstrate this condition by showing that:*

a) the ambient background concentration of the pollutant in the receiving water, excluding any amount of the pollutant in the facility's discharge, is similar to that of the intake water;
b) there is a direct hydrological connection between the intake and discharge points;
c) the water quality characteristics are similar in the intake and receiving waters; and
d) the intake water pollutant would have reached the vicinity of the discharge point in the receiving water within a reasonable period of time and with the same effect had it not been diverted by the discharger.

The BKS Preserve Wetlands was developed by the Conservancy in 1999 and is an important habitat for threatened species (Giant Gartersnake and Swainson's Hawk). The preserve was constructed at the site due to the availability of water from the Facility. In 1990, Sierra Aquafarms Inc. (predecessor to Sterling Caviar) entered into an agreement to supply water to the Betts family's adjoining parcels. The agreement provides the adjacent BKS Preserve parcels with exclusive rights to the wastewater generated by the Facility. The agreement is recorded and binding to Betts and all successors of interest to both parties.

The United States Army Corps of Engineers considers the BKS Preserve wetlands a jurisdictional water of the United States. However, the BKS Preserve wetlands are not naturally-occurring. They were constructed by the Natomas Basin Conservancy for the purpose of providing habitat for threatened species and are not sustainable without an artificial water source (i.e., groundwater pumping). If the Facility were to cease discharging, the wetlands would cease to exist without an alternative source of water.

The Facility uses four groundwater wells to supply water for its aquaculture operations. The water supply wells pump water from the North American Subbasin, which is described in a technical report[13] provided by the Discharger as follows:

> "The SCL [Sterling Caviar LLC] aquaculture operation is located within the North American Subbasin (NAM) of the larger Central Valley groundwater basin. The NAM is bound to the north by the Bear River, the west by the Feather River, to the south by the Sacramento River, and to the east by the foothills of the Sierra Nevada."
>
> "Two principle water-bearing formations occur within the NAM. The shallower formation is variably named the Turlock Lake, Laguna, or Fair Oaks Formation (DWR, 2006). This formation occurs at a depth of approximately 200 feet in the vicinity of the SCL site, with an approximate thickness of 200 feet. The Mehrten Formation comprises the deeper water-bearing unit within the NAM."
>
> "The Southeast and Southwest onsite wells are screened, in part, across the Turlock Lake Formation, while the Northwest and Northeast wells are screened within the deeper Mehrten Formation."

The upper aquifer is recharged from precipitation and infiltration from excess irrigation water. The BKS Preserve wetlands also recharge into the upper aquifer. There is evidence that the upper and lower aquifers are hydraulically connected as discussed in the Natomas

[13] Evaluation of NPDES Compliance Alternatives, Sterling Caviar LLC, Elverta, California; prepared by VESTRA Resources Inc. (Administrative Draft, February 2015)

Area Groundwater Management Plan, "DWR has been monitoring a site near the southern border of the District [District 1000] with multiple completion monitoring wells, where water levels show a vertical gradient between the two aquifer units, and some hydraulic interconnection."[14]

The Conservancy currently supplements the water supplied to the BKS Preserve wetlands from the Facility by pumping groundwater from two wells, one from the upper aquifer and the other from the lower aquifer. If the Facility would cease its discharge, the Conservancy would be required to increase its groundwater pumping to support the wetlands. Therefore, the receiving water body and the intake water is from the same water body, i.e., the underlying groundwater in the Natomas Basin, and meets the four conditions described in the SIP that demonstrate this relationship.

a) the ambient background concentration of the pollutant in the receiving water, excluding any amount of the pollutant in the facility's discharge, is similar to that of the intake water;

The intake water from the shallow and deep groundwater aquifers contains naturally occurring levels of arsenic. Arsenic is not added during the fish rearing process. This is confirmed by water quality data for the intake and effluent shown in Figure F-5, below, which shows that effluent arsenic concentrations are generally lower than intake water concentrations. The Facility discharge is then used as source water for the BKS preserve wetlands. Consequently, the ambient background arsenic concentrations in the BKS preserve wetlands are similar to the intake water. This is demonstrated by sampling results shown in Figure F-3, above.

b) there is a direct hydrological connection between the intake and discharge points;

The direct hydrological connection between the intake and discharge points is both natural and manmade. The Discharger uses four onsite groundwater supply wells as source water to the Facility. As discussed previously, the BKS preserve wetlands are manmade and the only water source is groundwater, either pumped and discharged by the Facility or pumped from irrigation wells owned and operated by the Conservancy. Without these water sources the BKS preserve wetlands would not exist, because there are no natural water sources to support the wetlands. The pumping of groundwater to support the wetlands is a manmade direct hydrological connection that is absolutely necessary. Without this connection there are no wetlands and no water of the United States.

There is also a direct hydrological connection between the intake and the discharge points via groundwater recharge. In addition to the wildlife benefits of the BKS preserve wetlands, the increased detention time for water flowing through the wetlands allows for an

[14] Natomas Area Groundwater Management Plan, Sacramento and Sutter Counties, California, Natomas Central Mutual Water Company (November 2009)

increase in groundwater recharge. This is a natural direct hydrological connection between the intake and discharge points. As discussed previously, the Discharger's water supply wells pump water from the upper and lower aquifers within the North American Subbasin. The two aquifers are hydraulically connected based on studies conducted by the Department of Water Resources.

c) the water quality characteristics are similar in the intake and receiving waters;

Since the intake water is the source water for the BKS preserve wetlands the water quality characteristics are similar. With respect to arsenic, this is shown in Figure F-3, above.

d) the intake water pollutant would have reached the vicinity of the discharge point in the receiving water within a reasonable period of time and with the same effect had it not been diverted by the discharger.

The BKS preserve wetlands are constructed wetlands for the purpose of providing habitat for threatened species. The only source water for the wetlands is groundwater, primarily from the Discharger's operation. If the Discharger ceased providing a water source to the BKS preserve wetlands, the Conservancy would be required to pump groundwater from the same aquifer containing the elevated arsenic concentrations. Arsenic is naturally occurring in the groundwater throughout the Natomas Basin. Groundwater data for wells in the vicinity of the Natomas Basin (Figures F-4 and F-5) demonstrate similarly elevated concentrations of arsenic in the area (Source: USGS, GAMA, and DWR). Therefore, the arsenic found in the intake water would reach the vicinity of the discharge point in the receiving water with the same effect if the Discharger ceased operating.

Figure F-4. Offsite well locations for USGS, GAMA, and DWR

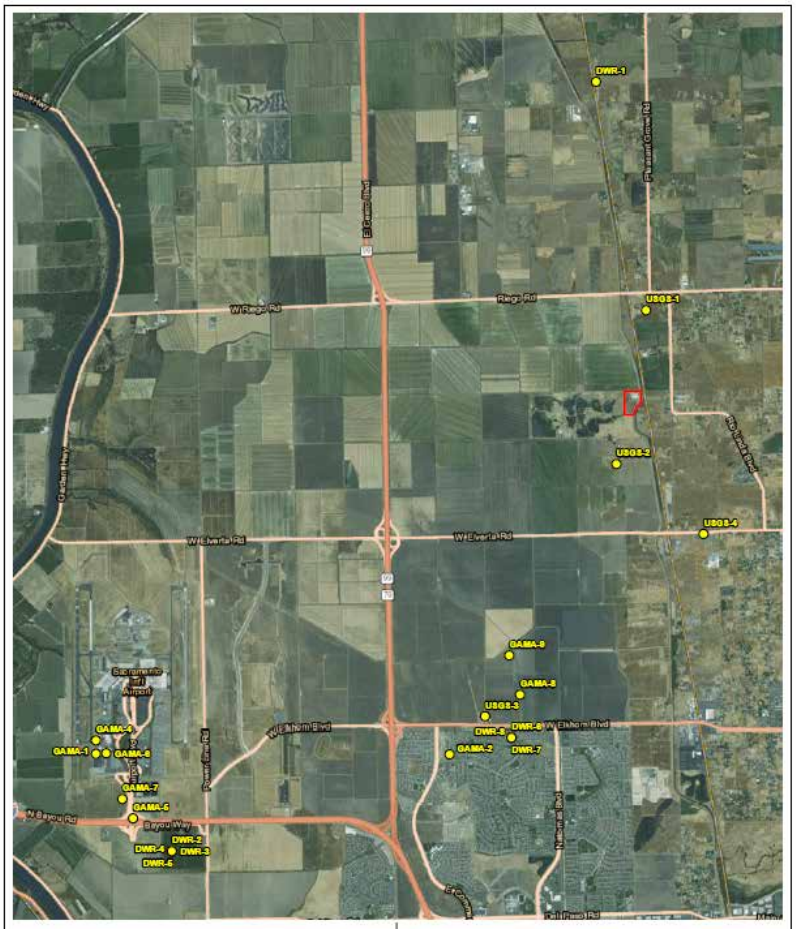
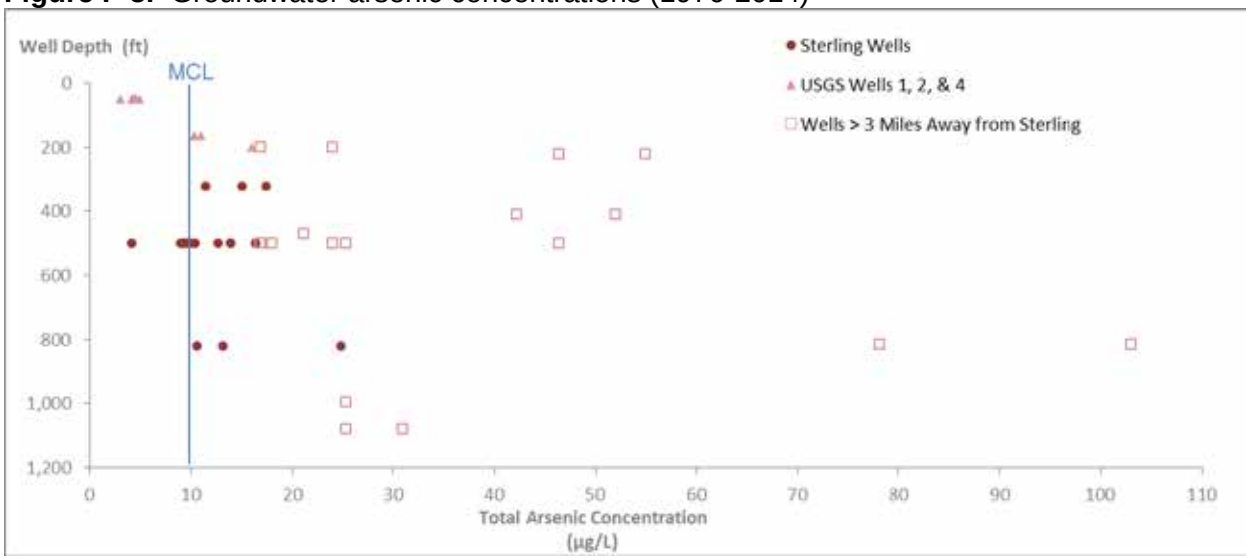


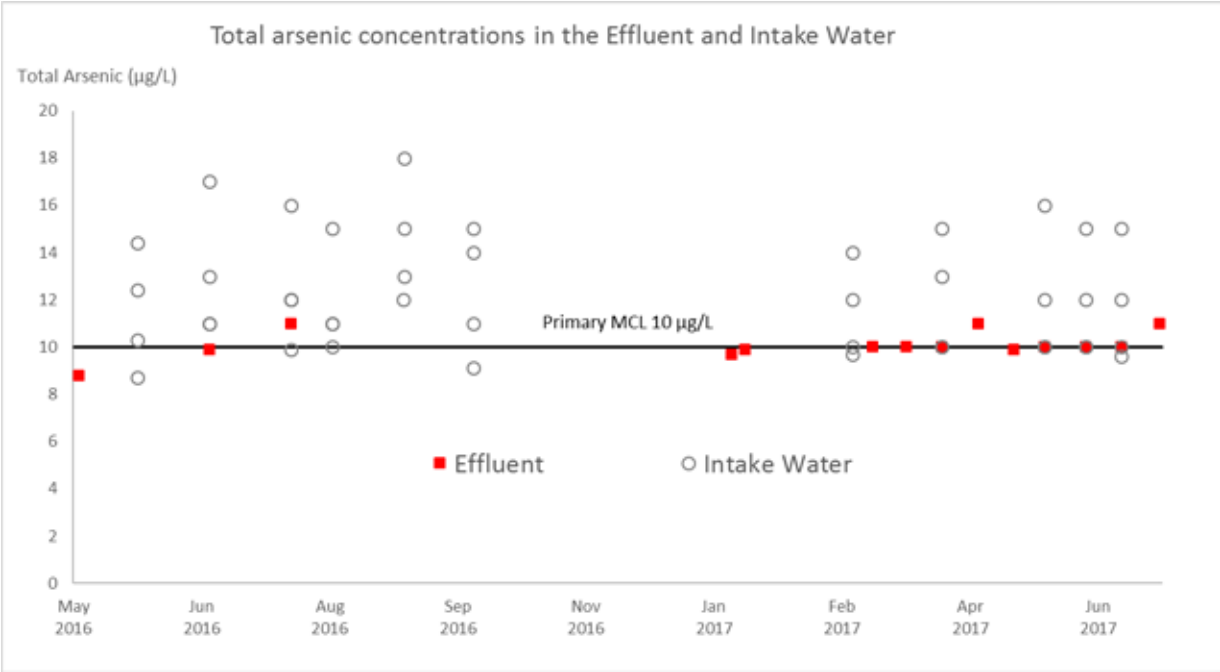
Figure F-5. Groundwater arsenic concentrations (1976-2014)



SIP Condition 4. *The facility does not alter the intake water pollutant chemically or physically in a manner that adversely affects water quality and beneficial uses.*

Arsenic in the Discharger's effluent is due to naturally occurring elevated levels in the groundwater (shallow and deep groundwater aquifers) that is used as source water for the Facility. Arsenic is not added during the fish rearing process. This is confirmed by sampling for arsenic in the intake and effluent, which shows that the effluent concentrations are typically lower than the intake concentrations (Figure F-6).

Figure F-6. Total Arsenic Concentration in Effluent and Intake Water



SIP Condition 5*. The timing and location of the discharge does not cause adverse effects on water quality and beneficial uses that would not occur if the intake water pollutant had been left in the receiving water body.*

The timing and location of the discharge from the Facility does not cause adverse effects on water quality and beneficial uses. There would be no difference in the effect on beneficial uses related to arsenic if the Facility were to cease discharging, because to maintain the BKS preserve wetlands the Conservancy would be required to pump the same groundwater to provide an alternative water supply. Furthermore, the slightly elevated arsenic concentrations are not impacting the MUN beneficial use. In this situation, the MUN beneficial use has been applied based on the State Water Board's Source of Drinking Water Policy. There are no drinking water intakes within the wetlands or downstream in the District 1000 water ways. Consequently, the use of groundwater to provide source water to the BKS preserve wetlands is not impacting the MUN beneficial use.

The sole purpose of the BKS preserve wetlands is to create and support the necessary habitat conditions for the two threatened

species and is in no way expected to support MUN use. The site is on private property owned by the Conservancy with no access for domestic use. The minimum water that is not retained in the wetlands, overflows into the Natomas Mutual agricultural drainage and conveyance system and subsequently into the District 1000, which operates and maintains a drainage system that collects storm water and agricultural runoff within the Natomas Basin. There is no access for domestic use. Any drinking water use would have to be authorized by District 1000 and Mutual Water, which own the rights to the water.

The Natomas Mutual and District 1000 waterways are designated MUN based on the Sources of Drinking Water Policy, which identifies exceptions to the MUN beneficial use designation that can apply to certain water bodies. These particular waterways are constructed to deliver agricultural water supply or drainage so they meet Exception 2b for surface water bodies designed or modified for the primary purpose of conveying or holding agricultural drainage waters. In the Central Valley Region a Basin Plan amendment is required to implement the exception. Resolution R5-2017-0088, adopted by the Central Valley Water Board on 11 August 2017, establishes the groundwork for streamlining the de-designation process for similar agricultural dominated water bodies.

Calculation of WQBELs. Per the SIP, the allowance of intake water credits allows the facility to discharge a mass and concentration of pollutant that is no greater than the mass and concentration found in its intake water. The effluent limitations have been established considering intake water credits and calculated to account for the analytical and sampling variability among the intake water and effluent. It is necessary to consider the variability, because most analytical methods specify a precision limit of 20% Relative Percent Difference between two replicates of the same sample. Additionally, the monitoring of the intake water will take place at the four on-site supply wells that vary in terms of location (Table E-1 and attachment B), depth, volume, and arsenic concentrations. Even though the Discharger is establishing more robust sampling procedures to improve the consistency of sampling by installing sampling portals at each well, sampling and analytical variability will continue to exist.

The SIP includes effluent limitation calculation procedures for calculating maximum daily and average monthly effluent limits based on a long-term average that ensures protection of the applicable water quality objectives. Based on the statistics of the effluent, average monthly and maximum daily limits are established to ensure the facility is operated to maintain compliance with a long-term average concentration. This procedure was used to calculate the arsenic limits by inserting the intake water average as the long-term average in the SIP equations and calculating average monthly and maximum daily limits based on the statistics of the intake water. Compliance with these limits will ensure the effluent is consistent with the intake water dataset.

This Order includes an average monthly effluent limitation (AMEL) and maximum daily effluent limit (MDEL) that that will account for intake water

credits of 14 µg/L and 19 µg/L, respectively. However, in the event an effluent limit is exceeded the discharge would be deemed to be in compliance if the effluent concentration and mass does not exceed the intake water concentration and mass. The revised arsenic effluent limits comply with antibacksliding and antidegradation regulations (see Attachment F, Section IV.D)

(d) **Plant Performance and Attainability.** This Order includes effluent limitations for arsenic that allow for intake credits. Based on a review of the intake and effluent arsenic data the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

d. **Aquaculture Drugs and Chemicals**. Promulgated numeric water quality criteria or Basin Plan numeric objectives are currently not available for most of the aquaculture drugs and chemicals used by CAAP facilities. Therefore, the Central Valley Water Board used the narrative water quality objective for toxicity from the Basin Plan and applied the Policy for "Application of Water Quality Objectives" as a basis for determining "reasonable potential" for discharges of these drugs and chemicals. The toxicity objective states, in part: "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life."

(a) The Basin Plans state that compliance with the toxicity objective will be determined by several factors, including biotoxicity tests of appropriate duration, or other analytical methods as specified by the Central Valley Water Board. (Biotoxicity testing involves measuring the toxic effects of an effluent on specified organisms according to nationally approved protocols.) USEPA's Technical Support Document for Water Quality-based Toxics Control (TSD) specifies two toxicity measurement techniques that can be employed in effluent characterization; the first is whole effluent toxicity (WET) testing, and the second is chemical-specific toxicity analyses. WET testing is used most appropriately when the toxic constituents in an effluent are not completely known; whereas chemical-specific analyses are more appropriately used when an effluent contains only one, or very few, well-known constituents. Due to the nature of operations and chemical treatments at most CAAP facilities in the Central Valley Region, CAAP facility effluents generally contain only one or two known chemicals at any given a time. Therefore, the Central Valley Water Board is using a chemical-specific approach to determine "reasonable potential" for discharges of aquaculture drugs and chemicals from CAAP facilities.

(b) The California Department of Fish and Wildlife Pesticide Investigation Unit (DF&W Pesticide Unit) has completed biotoxicity studies to determine the aquatic toxicity of certain aquaculture drugs and chemicals commonly used at their CAAP facilities in the Central Valley Region; specifically, formalin, hydrogen peroxide, potassium permanganate, MS-222, Chloramine-T, and PVP iodine. The DF&W Pesticide Unit conducted chronic toxicity tests for some drugs and chemicals using Pimephales promelas, Ceriodaphnia dubia, and, in some cases, Selenastrum capricornutum in accordance with the analytical methods specified in the USEPA Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA 600/4 91

002). These “short-term chronic tests” measure effects such as reduced growth of the organism, reduced reproduction rates, or lethality. Results were reported as a No Observed Effect Concentration (NOEC) and a Lowest Observed Effect Concentration (LOEC). The LC50 concentration (lethal concentration to 50% of the exposed organisms over the test period) is sometimes reported when lethality is measured. Since many chemical treatments are utilized as a “flush” or “batch” treatment, the DF&W Pesticide Unit also conducted acute toxicity tests using Ceriodaphnia dubia (C. dubia) in accordance with methods specified in the USEPA Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA 600/4 90/027). Acute toxicity test results typically are reported as the No Observed Adverse Effect Level (NOAEL), the Lowest Observed Adverse Effect Level (LOAEL), and LC50.

i. ***Hydrogen Peroxide***. Hydrogen peroxide (35% H_20_2) has been used for the control of bacteria at CAAP facilities. FDA approved hydrogen peroxide to control fungi on fish at all life stages, including eggs. Hydrogen peroxide may also be used to control bacterial gill disease and columnaris in salmonids, and, through an INAD, external parasites. Hydrogen peroxide is a strong oxidizer that rapidly breaks down into water and oxygen; however, it exhibits toxicity to aquatic life during the oxidation process. The Central Valley Water Board considered the results of acute aquatic life toxicity testing conducted by the DF&W Pesticide Unit when determining whether water quality-based effluent limits for hydrogen peroxide were necessary in this Order. Results of an acute toxicity test using *C. dubia* showed a 96 hour NOAEL of 1.3 mg/L based on continual constant exposure to hydrogen peroxide. When exposed to hydrogen peroxide for 2 hours followed by a triple lab water flush and normal test completion, *C. dubia* showed a 96-hour NOEC of 2 mg/L. Based on the chemical nature of hydrogen peroxide (i.e., high reactivity resulting in rapid degradation) and on available information regarding hydrogen peroxide when used according to the reported treatments, hydrogen peroxide is not discharged at levels that cause, have the reasonable potential to cause, or will contribute to an excursion of Basin Plan narrative water quality objectives for toxicity. Accordingly, this Order does not include water quality-based effluent limitations for hydrogen peroxide. However, use and monitoring of hydrogen peroxide must be reported as specified in the attached Monitoring and Reporting Program.

ii. ***Chloramine-T***. Chloramine-T is available for use in accordance with FDA as a possible replacement for copper sulfate and formalin. The therapeutic treatment consists of a 10 to 20 mg/L dose for a 1 hour exposure once per day for a 1 to 3 day period. Chloramine-T breaks down into para-toluenesulfonamide (p TSA) and unlike other chlorine-based disinfectants does not form harmful chlorinated compounds. Results of the DF&W Pesticide Unit C. dubia test where the test animals were exposed to the toxicant for 2 hours followed by three exchanges of control water to remove residual compound and then observed for 96 hours determined the NOEC and LOEC to be 86.3 and 187 mg/L, respectively. Based on available information regarding Chloramine-T when used according to the reported treatment, Chloramine-T is not discharged at levels that cause, have the reasonable potential to cause, or will contribute to an excursion of Basin Plan narrative water quality objectives for toxicity. Accordingly, this Order does not include water quality-based effluent limitations for Chloramine-T. However, use and monitoring of

Chloramine-T must be reported as specified in the attached Monitoring and Reporting Program.

iii. ***Oxytetracycline.*** Oxytetracycline, also known by the brand name Terramycin®, is an antibiotic approved through FDA's NADA program for use in controlling ulcer disease, furunculosis, bacterial hemorrhagic septicemia, and pseudomonas disease in salmonids. CAAP facilities use the antibiotic during disease outbreaks. Oxytetracycline is most commonly used at CAAP facilities as a feed additive. However, oxytetracycline may also be used as an extra-label use under a veterinarian's prescription in an immersion bath of approximately 6 to 8 hours in duration. Because oxytetracycline may be applied in an immersion bath for up to 8 hours at a time, the Central Valley Water Board considered the results of acute and chronic aquatic life toxicity testing conducted by the DF&W Pesticide Unit when determining whether water quality-based effluent limits for oxytetracycline used in an immersion bath treatment were necessary. Results of acute toxicity tests using C. dubia showed a 96 hour NOAEL of 40.4 mg/L. Results of chronic toxicity tests using C. dubia showed a 7-day NOEC for reproduction of 48 mg/L.

The information available regarding use and discharge of oxytetracycline at CAAP facilities indicates that it is discharged at levels well below the lowest NOEC and NOAEL. The Central Valley Water Board determined that oxytetracycline, when used in feed or in an immersion bath treatment, is not discharged at levels that cause, have the reasonable potential to cause, or contribute to an excursion of a narrative water quality objective for toxicity from the Basin Plan. Accordingly, this Order does not include an effluent limitation for oxytetracycline. However, monthly use of oxytetracycline must be reported as specified in the attached Monitoring and Reporting Program.

4. WQBEL Calculations

This Order includes WQBEL's for arsenic. The general methodology for calculating WQBEL's based on the different criteria/objectives is described in subsections IV.C.5.b through d, below. See Attachment H for the WQBEL calculations.

a. **Effluent Concentration Allowance.** For each water quality criterion/objective, the ECA is calculated using the following steady-state mass balance equation from Section 1.4 of the SIP:

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

where:

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

According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the arithmetic mean concentration of the ambient background samples. For ECAs based on MCLs, 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.

b. **Basin Plan Objectives and MCLs.** For WQBEL's based on site-specific numeric Basin Plan objectives or MCLs, 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.

c. **Aquatic Toxicity Criteria.** WQBEL's based on acute and chronic aquatic toxicity criteria are calculated in accordance with Section 1.4 of the SIP. The ECAs are converted to equivalent long-term averages (i.e. LTAacute and LTAchronic) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers.

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

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

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

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

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

Summary of Water Quality-Based Effluent Limitations
Discharge Point No. 001

Table F-8. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Arsenic	µg/L	14	--	19	--	--
pH	Standard Units	--	--	--	6.5	8.0

5. Whole Effluent Toxicity (WET)

The Basin Plan specifies a narrative objective for toxicity, requiring that "All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life." Compliance with this objective will be determined by use of indicator organisms,

analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration and/or other appropriate methods as specified by the Regional Water Board. The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or when necessary, for other control water that is consistent with the requirements for "experimental water" as defined in Standard Methods for the Examination of Water and Wastewater (American Public Health Association, et al. 1992).

In addition to the Basin Plan requirements, Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters.

Numeric water quality criteria or Basin Plan numeric objectives currently are not available for many of the aquaculture drugs and chemicals used by aquaculture facilities. Therefore, the Central Valley Water Board uses the narrative water quality objective for toxicity from the Basin Plans as a basis for determining "reasonable potential" for discharges of these drugs and chemicals. USEPA's TSD specifies two toxicity measurement techniques that can be employed in effluent characterization; the first is WET testing, and the second is chemical-specific toxicity analyses. WET requirements protect the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative "no toxics in toxic amounts" criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a short time period and generally measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction, and growth. For fish hatcheries WET testing is used most appropriately when the toxic constituents in an effluent are not completely known; whereas chemical-specific analysis is more appropriately used when an effluent contains only one, or very few, well-known constituents.

Due to the nature of CAAP facility operations, the effluent is very consistent and additions consist of feed and occasionally drugs and chemicals under controlled use. Therefore, the Central Valley Water Board is using a chemical-specific approach to determine "reasonable potential" for discharges of aquaculture drugs and chemicals. As such it is not necessary to include an acute toxicity effluent limitation or require acute or chronic WET testing.

D. Final Effluent Limitation Considerations

1. Mass-based Effluent Limitations

40 C.F.R. 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 C.F.R. 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 concentration, as mass limitations are not necessary to protect the beneficial uses of the receiving water.

2. Averaging Periods for Effluent Limitations

40 C.F.R. section 122.45 (d) requires maximum daily and average monthly discharge limitations for all dischargers other than publicly owned treatment works unless impracticable. This Order complies with this regulation.

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 arsenic, manganese, nitrate, formaldehyde, and chloride. The effluent limitations for nitrate, formaldehyde, and chloride were removed from Order R5-2007-0012. The effluent limitations for arsenic and manganese were relaxed from Order R5-2016-0026. 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.

   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.

   This Order relaxes the WQBELs for arsenic, manganese, chloride, nitrate, and formaldehyde. The receiving waters are in attainment. As discussed in Section IV.D.4, the relaxation of the effluent limitations from Order R5-2007-0012 and R5-2016-0026 complies with the antidegradation requirements and thus meets the antibacksliding exception in CWA section 303(d)(4)(B).

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

   As described further in section IV.C.3.b of this Fact Sheet, updated information that was not available at the time Order R5-2007-0012 and R5-2016-0026 was issued indicates that manganese, chloride, nitrate, and formaldehyde do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. Furthermore, updated information is available demonstrating intake water credits may be allowed for arsenic. The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

   i. **Chloride.** The effluent monitoring data collected between September 2010 through June 2015 with monthly chloride effluent monitoring results ranging from 30.2 mg/L to 40.7 mg/L. Based on these monitoring results, staff determine that chloride in the discharge does not exhibit reasonable potential

to cause or contribute to an exceedance of the Agricultural Water Quality Goal for chloride of 106 mg/L (Figure F-7).

ii. **Nitrate.** Since Order R5 2007 0012 was adopted the Discharger has implemented several operational changes such as: 1) converted 14 of 15 existing fluidized bed sand biofilters to moving media biofiltration; 2) installed an automated feeder in the production building; and 3) installed stripping/aeration towers. These operational changes and facility upgrades have resulted in reduction of effluent nitrate and the discharger no longer exhibits reasonable potential to cause or contribute to an exceedance of the primary MCL for nitrate (Figure F-8.

iii. **Formaldehyde.** This Order does not allow for the use of formalin, therefore, the discharge no longer exhibits reasonable potential to cause or contribute to an exceedance of the applicable water quality objectives for formaldehyde.

iv. **Arsenic.** Based on new information provided in a monitoring study conducted by the Discharger in January through June 2017, it was determined the site-specific conditions of the discharge met the conditions for allowing intake water credits for arsenic per Section 1.4.4 of the SIP (see Section IV.C.3.c.i).

v. **Manganese.** Based on new information provided in a monitoring study conducted by the Discharger in January through June 2017, it was determined the discharge does not have reasonable potential to cause or contribute to an exceedance of the Secondary MCL for manganese (see Section IV.C.3.a.v)

Figure F-7. Monthly chloride effluent monitoring results

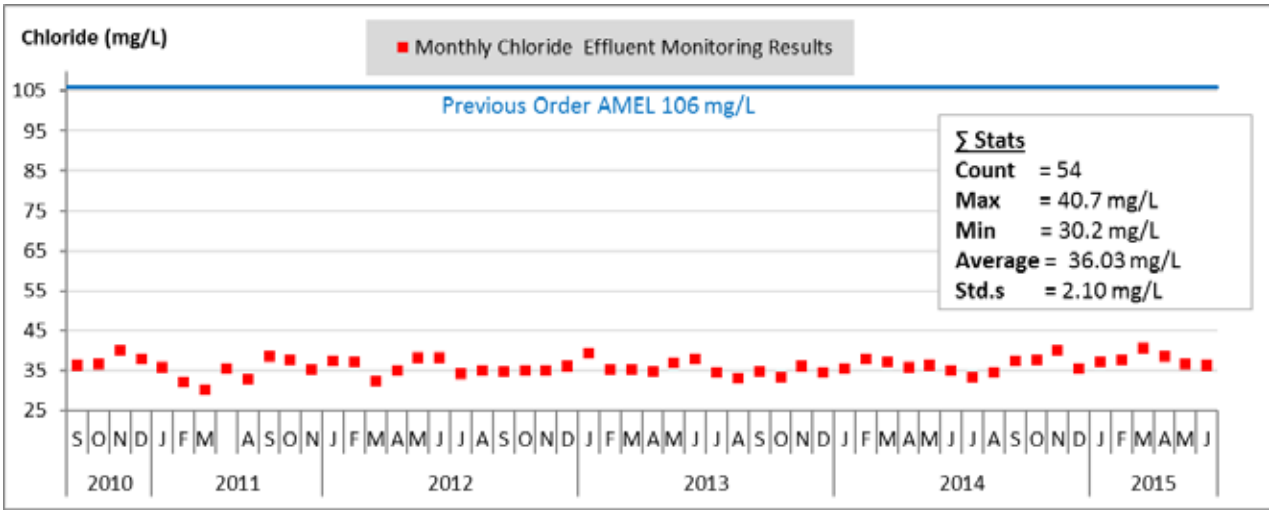
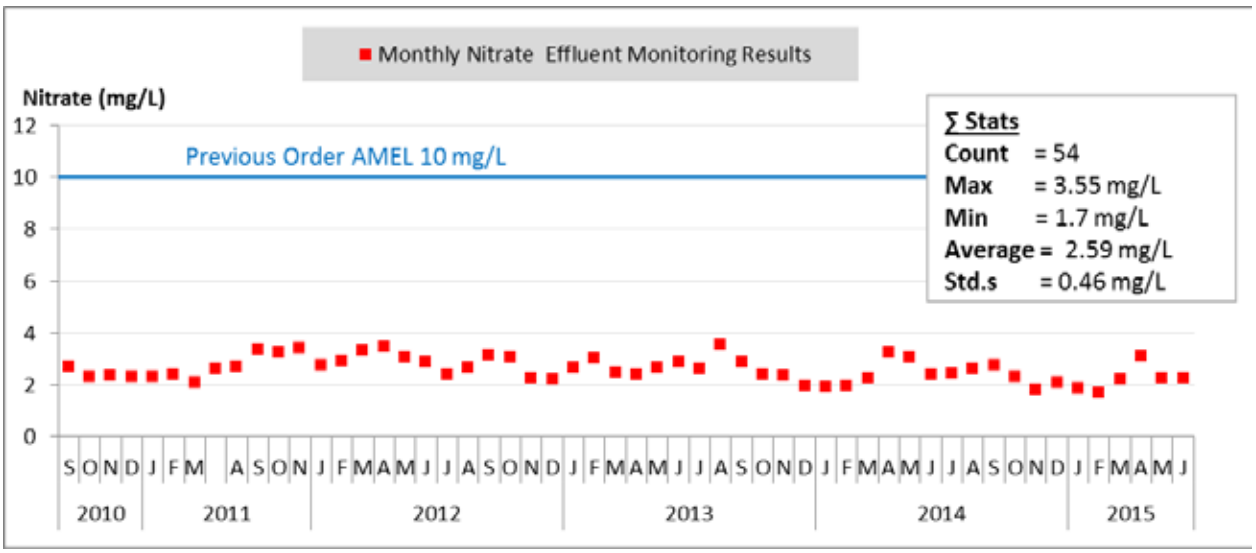


Figure F-8. Monthly Nitrate effluent monitoring results



4. Antidegradation Policies

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.

The permitted surface water 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 manganese, chloride, and nitrate based on updated monitoring data demonstrating that the effluent does not cause or contribute to an exceedance of the applicable water quality criteria or objectives in the receiving water. This Order also removes effluent limitations for formaldehyde because this Order no longer allows the use of formalin. Furthermore, this Order revises the effluent limitations for arsenic to allow for intake water credits. The relaxation of WQBEL's for these parameters will not result in an increase in pollutant concentration or loading, 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 removal and relaxation 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.

5. Stringency of Requirements for Individual Pollutants

This Order contains WQBELs for individual pollutants. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. The WQBELs consist of restrictions on formaldehyde, copper, and chlorine. 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 WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 C.F.R. 131.38. The scientific procedures for calculating the individual WQBELs are based on the CTR-SIP, which was approved by USEPA on 1 May 2001. All beneficial uses and water quality objectives contained in the Basin Plans were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the [Clean Water] Act" pursuant to 40 C.F.R. 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

Summary of Final Effluent Limitations
Discharge Point 001

Table F-9. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow							
Arsenic	µg/L	14	--	19	--	--	MCL
pH	Standard Units	--	--	--	6.5	8.0	BP
Total Suspended Solids		Narrative[2]					BPJ
Biochemical Oxygen Demand		Narrative[2]					BPJ

[1] BP – Based on water quality objectives contained in the Basin Plan.
SEC MCL – Based on the Secondary Maximum Contaminant Level.
MCL – Based on the Primary Maximum Contaminant Level.
Title 22 – Based on CA Department of Public Health Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).
BPJ – Technology-based effluent limitation based on best professional judgment.

[2] The Discharger shall minimize the discharge of Total Suspended Solids and Biochemical Oxygen Demand through the implementation of the best management practices established in Special Provision VI.C.3 of this Order.

E. Interim Effluent Limitations – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "[t]*he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses.*" The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plan numerical and narrative water quality objectives for ammonia, 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.

B. Groundwater – Not Applicable

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 – Not Applicable

2. Special Studies and Additional Monitoring Requirements – Not Applicable

3. Best Management Practices and Pollution Prevention

a. Provision VII.C.3, Best Management Practices. BMP Plan requirements are established based on requirements in Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category at 40 C.F.R. Part 451. CAAP facilities are required to develop and maintain a BMP Plan that addresses the following requirements: solids

control, material storage, structural maintenance, record-keeping, and training. An Evaluation and Minimization Plan for salinity is required as part of the BMP Plan to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity. The Discharger must make the BMP Plan available to the Central Valley Water Board upon request, and submit certification that the BMP Plan has been developed.

4. **Construction, Operation, and Maintenance Specifications – Not Applicable**

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

6. **Compliance Schedules– Not Applicable**

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

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

A. Influent Monitoring

1. Influent monitoring is required for flow and arsenic quarterly to evaluate compliance with the WQBELs for arsenic that have been calculated considering the application of intake water credits.

B. Effluent Monitoring

2. 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.

3. Effluent monitoring frequencies and sample types for pH (1/week), total Suspended Solids (1/month), BOD 5-day(1/month), ammonia (1/month), electrical conductivity (1/quarter), Total Dissolved Solids (1/quarter), and Settleable Solids (1/quarter) have been retained from Order R5-2007-0012. The monitoring frequency for arsenic have been revised to 1/Quarter. The monitoring frequency for manganese has been revised from 2/year to quarterly during year 2020 to provide effluent characterization for the next permit renewal. The effluent monitoring is needed to determine compliance with effluent limitations (e.g. arsenic and pH) and efficacy of best management practices implementation for these parameters (e.g. TSS, BOD, TDS, Settleable Solids).

4. Monitoring requirements for formaldehyde are no longer needed since the Discharger has not applied formaldehyde since 12 January 2007 and does not plan to use it. Additionally, this order does not allow the use of it.

5. Water Code section 13176, subdivision (a), states: "*The analysis of any material required by [Water Code sections 13000-16104] shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code.*" The 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 dissolved oxygen and pH and immediate analysis is required for temperature. (40 C.F.R. § 136.3(e), Table II).

6. Effluent monitoring frequencies for chloride and nitrate were decreased from the previous permit (monthly to quarterly) because chloride and nitrate in the discharge do not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan narrative objective.

7. Quarterly effluent monitoring for antimony has been included in this Order to ensure sufficient data is collected to conduct a reasonable potential analysis.

C. Whole Effluent Toxicity Testing Requirements

Due to the nature of operations at the Facility, its effluent is expected to be very consistent. Inputs into the system are limited to groundwater, oxygen, fish feed, and, occasionally, therapeutants. Since there are only a few known toxicants that can be monitored, it is not necessary to require acute or chronic WET testing. This Order requires chemical specific monitoring for the known toxicants (i.e. ammonia, and the therapeutants, Chloramine-T, and oxytetracycline).

D. Receiving Water Monitoring

1. Surface Water

a. This Order contains receiving surface water limitations as required to comply with the Basin Plan's water quality objectives. However, receiving surface water monitoring is not feasible and, therefore, not required in this Order. Sampling for compliance with the receiving surface water limitations will be established through monitoring of the Facility's effluent.

b. The Facility discharges via a drainage ditch to the BKS Wetlands. The discharge from the facility is the main water source for the wetlands, which also receive storm water runoff from the surrounding agricultural fields. Upstream monitoring is infeasible; furthermore, since the discharge flows through open areas prior to entering downstream waters, impacts from any discharges entering the drainage course could mask actual impacts of the discharge on downstream waters.

2. Groundwater – Not Applicable

E. Other Monitoring Requirements

1. Chemical and Aquaculture Drug Reporting Requirements.

As described in Section VIII.A of Attachment E, the final ELG includes the following reporting and narrative requirements for CAAP facilities that are subject to 40 C.F.R. Part 451:

a. The Discharger must notify the permitting authority of the use of any investigational new animal drug (INAD) and any extra-label drug use where the use may lead to a discharge to waters of the United States.

b. The Discharger must report for failure in or damage to the structure of an aquatic animal containment system, resulting in an unanticipated material discharge of pollutant to waters of the United States.

c. The Discharger must develop and maintain a BMP Plan for solids control, material storage, structural maintenance, record keeping, and training.

Prior to using any new chemical or aquaculture drug at a CAAP facility, the Discharger is required to notify the Central Valley Water Board of the proposed use. The notification must contain the toxicity testing results of the new chemical or aquaculture drug as specified in Section VII.C.2.a of this Order. These reporting and toxicity testing requirements are needed for the Central Valley Water Board to determine if the discharge of a new drug or chemical by the Facility has reasonable potential to cause, or contribute to an in-stream excursion above any chemical-specific water quality criteria, narrative water quality objective for chemical constituents from the Basin Plans, or narrative water quality objective for toxicity from the Basin Plans.

VIII. PUBLIC PARTICIPATION

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

A. Notification of Interested Parties

The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDR's for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through posting of a Notice of Public Hearing at the Sacramento County Courthouse on 19 February 2016 and at the public entrance to the Facility on 23 February 2016. The Notice of Public Hearing was also posted on the Central Valley Water Board's website.

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 11 March 2016.

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:	21 April 2016
Time:	8:30 a.m.
Location:	Regional Water Quality Control Board, Central Valley Region Fresno Branch Office 1685 "E" Street Fresno, CA 93706

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

D. Reconsideration of Waste Discharge Requirements

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

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

For instructions on how to file a petition for review, see
http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml

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 (916) 464-3291.

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 Jim Marshall at (916) 464-4772.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Ammonia Nitrogen, Total (as N)	mg/L	2.27	--	--	--	--	--	--	--	--	No
Chloride	mg/L	40.7	--	--	--	--	--	--	106[1]	--	No
Electrical Conductivity @ 25°C	µmhos/ cm	479	--	--	--	--	--	--	--	--	No
Antimony, Total Recoverable	µg/L	21	--	--	--	--	--	--	--	6[2]	Inconclusive
Arsenic, Total Recoverable	µg/L	14	--	--	--	--	--	--	--	10	Yes
Manganese, Total Recoverable	µg/L	180								50	No[3]
Nitrate Nitrogen, Total (as N)	mg/L	3.6	--	--	--	--	--	--		10	No
Total Dissolved Solids	mg/L	325	--	--	--	--	--	--	--	--	No

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level
NA = Not Available
ND = Non-detect

Footnotes:
(1) Basin Plan contains a narrative objective for chemical constituents. Agricultural irrigation, municipal and domestic supply are beneficial uses of the receiving water. The Agricultural Water Quality Goal for chloride is 106 mg/L.
(2) The California Department of Public Health has adopted a Primary MCL for antimony of 6 µg/L, which implements the Basin Plan's chemical constituent objective.
(3) See Attachment F, Section IV.C.3.a.v

ATTACHMENT H – CALCULATION OF WQBEL'S

WQBEL's Calculations Considering Intake Water Credits							
Parameter	**Units**	**Long-term Average[1]**	**Coefficient of Variation[2]**	**MDEL/AMEL Multiplier [3]**	**AMEL Multiplier[3]**	**AMEL**	**MDEL**
Arsenic, Total Recoverable[3]	µg/L	12.32	0.19	1.32	1.17	14[1]	19

1 Calculated by setting the LTA equal to the average intake water concentration. See Section IV.D.3 for rationale on effluent limitation's calculations.
2 Coefficient of variation of the intake water dataset.
3 MDEL and AMEL multipliers calculated per Section 1.4 of the SIP.

ATTACHMENT I – MONTHLY CHEMICAL USE REPORTS

Chemical Name	Date	Purpose	Amount Applied	Units	Duration of Treatment	Chemical or Aquaculture Drugs Used (Immersion, feed, injected, maintenance of systems, etc.)	Flow Treated (cfs)	Total Effluent Flow (cfs)	Effluent Conc. (mg/L)[2]	Person Reporting

[1] Monthly chemical use reports shall be submitted quarterly (see Attachment E, Section VIII.)
[2] Indicate if the effluent concentration was measured or calculated.