



Central Valley Regional Water Quality Control Board

25 May 2016

CERTIFIED MAIL

7015 1660 0000 2319 4391

Jay Rowan

Acting Senior Environmental Scientist Supervisor California Department of Fish and Wildlife

1701 Nimbus Road

Rancho Cordova, CA 95670

CERTIFIED

7015 1660 0000 2319 4407

Eric See

Environmental Program Manager I California Department of Water Resources 460 Glen Drive

Oroville, CA 95966

NOTICE OF APPLICABILITY; GENERAL WASTE DISCHARGE REQUIREMENTS FOR COLD WATER CONCENTRATED AQUATIC ANIMAL PRODUCTION FACILITY DISCHARGES TO SURFACE WATERS (CAAP GENERAL ORDER); ORDER R5-2014-0161; CALIFORNIA DEPARTMENT OF WATER RESOURCES AND CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE; FEATHER RIVER FISH HATCHERY; BUTTE COUNTY

The California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board), issued a Notice of Applicability (NOA) to the California Department of Water Resources (CDWR) and California Department of Fish and Wildlife (CDFW) (hereinafter Discharger) on 1 February 2011 for coverage under Order R5-2010-0018, for the Feather River Fish Hatchery (hereinafter Facility).

On 5 December 2014, the Central Valley Water Board adopted Order R5-2014-0161, which renewed the CAAP General Order. The Discharger submitted a notice of intent on 2 July 2014 for continued coverage under the CAAP General Order. Effective **25 May 2016**, this NOA provides the Facility with continued coverage under the CAAP General Order for the discharge of hatchery wastewater to the Feather River, superseding a previous NOA issued on 1 February 2011. This Facility is assigned Order R5-2014-0161-032 and National Pollutant Discharge Elimination System (NPDES) Permit No. CAG135001. Please reference CAAP General Order **R5-2014-0161-032** in all correspondence and submitted documents. The following enclosures are included as part of this NOA:

- 1) Enclosure A Administrative Information
- 2) Enclosure B Location Map
- 3) Enclosure C Flow Schematic
- 4) Enclosure D Monitoring and Reporting Program
- 5) Enclosure E Approved Aquaculture Drugs and Chemicals

The CAAP General Order is enclosed and can also be viewed at the following web address: http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/. The Central Valley Water Board advises the Discharger to become familiar with the entire CAAP General Order. Facility operations and discharges shall be managed in accordance with requirements contained in the CAAP General Order, this NOA, and with information submitted by the Discharger.

FACILITY INFORMATION/DISCHARGE DESCRIPTION

In 1951, California Legislature authorized development of the State Water Project, which is comprised of a water storage and delivery system managed by the California Department of Water Resources. In 1961, voters approved the Burns-Porter Act, which provided funds to build facilities for the State Water Project. The Oroville Dam and Reservoir, completed in 1968, was built because of the Burns-Porter Act in order to provide California residents with: (1) water storage, (2) hydroelectric power, (3) flood control, and (4) recreational benefits. The Facility was built to mitigate the loss of Chinook and steelhead salmon spawning habitats, a residual effect from obstructing the Feather River's natural flow regime.

The Facility is located along the north embankment of the Feather River, approximately four river miles downstream from the Oroville Dam on property owned by CDWR in Oroville, CA, Butte County (near latitude N 39°31'5.20" and longitude W 121°33'11.62"), as shown in Enclosure B, a part of this NOA.

Freshwater is diverted from the Feather River at the Thermalito Diversion Dam at a maximum flow rate of about 110 cubic feet per second (cfs) or 71 million gallons per day (mgd). Freshwater is gravity fed to an aeration tower and subsequently delivered throughout the Facility. Typically, more freshwater is withdrawn from the Feather River than can be used at the Facility due to design pressure requirements. The minimum necessary flow rate to maintain standard operating conditions is estimated to be 40 cfs, during which time, approximately 70 cfs of aerated water is discharged back into the Feather River; flow-through water not used in operations is only aerated water and contains no chemicals or wastes. Facility operations are continuous and only halted for maintenance approximately once every five years.

Flow rates vary depending on the number of fish present at the hatchery. During the spawning season, when the fish ladder is in use, freshwater from the fish ladder is sent into a gathering tank and four holding tanks before discharge into the Feather River. Direct discharges from the gathering and holding tanks only contain fish feces because the broodstock fish are not fed or treated with chemicals.

Wastewater from the main hatchery building, rearing channel, and rearing raceways is mixed together and sent to one of three locations: (1) the Feather River (this valve is always locked and only opened for emergency situations), (2) a sump basin, and/or (3) two settling basins (approximately 300 feet long by 30 feet wide by 15 feet deep). The two settling basins are located near the banks of the Feather River and contain square concrete overflow boxes in each basin to allow for a direct discharge into the Feather River. The settling basins are constructed in permeable gravels that have large hydraulic conductivities and percolation rates, which allows hatchery wastewater to enter the Feather River via seepage. In normal operating conditions, water from the hatchery building wastewater is sent into a sump basin, subsequently discharged into the settling basins, and, when the settling basins are at their design volume capacity, overflows directly into the Feather River. If the pump in the sump basin fails, hatchery wastewater from the sump basin overflows into the Feather River. Hatchery wastewater from two raceways located near the western section of the Facility is discharged directly to the Facility's southwest settling basin and does not enter the sump basin.

AQUATIC ANIMAL PRODUCTION AND OUTFALL DESCRIPTIONS

The Discharger reported, in a notice of intent, the estimated maximum five-year annual harvestable fish produced and estimated maximum monthly feed use (Table 1):

Table 1. Estimated Aquatic Animal Production and Feed Use

Maximum Annual Harvestable Aquatic Animal Production (lbs)	Maximum Monthly Feed Use (lbs)
Chinook Salmon – 260,000	20.000
Steelhead Trout – 125,000	30,000

Hatchery wastewater is discharged from the Facility to the Feather River through three outfalls (Outfall 001, Outfall 002, and Outfall 003) as shown in Enclosure C, a part of this NOA, and as described below:

Outfall 001 – Treated overflow hatchery wastewater from the Facility's northeast settling basin (Settling Basin 01).

Outfall 002 – Treated overflow hatchery wastewater from the Facility's southwest settling basin (Settling Basin 02).

Outfall 003 – Overflow hatchery wastewater from the Facility's sump basin overflow pipe.

Domestic wastewater is discharged to the City of Oroville's sewage collection system.

The Facility has two 1,000-gallon aboveground storage tanks for storage of gasoline and diesel fuel. Concrete and unpaved areas surround these tanks.

EFFLUENT LIMITATIONS

Effluent limitations are specified in Section V., Effluent Limitations and Discharge Specifications, of the CAAP General Order. Copper sulfate is not utilized at the Facility and there is no reasonable potential for total recoverable copper. Therefore, an effluent limitation for total recoverable copper is not imposed on the Discharger. The following effluent limitations (Table 2) are applicable to this discharge and are contained in Sections V.A of the CAAP General Order:

a. Discharges to surface waters shall not exceed the effluent limitations contained in Table 2 below.

Table 2. Effluent Limitations

Parameter	Units	Average Monthly Effluent Limitation	Maximum Daily Effluent Limitation
Formaldehyde	mg/L	0.65 ¹	1.3 ¹
Chlorine	mg/L		0.018

Compliance with the effluent limitations for formaldehyde may be evaluated using an estimated effluent concentration in lieu of effluent monitoring data. The estimated effluent concentration shall be calculated as described in the CAAP General Order (Section IX.A of Attachment C, Monitoring and Reporting Program).

b. The Discharger shall minimize the discharge of total suspended solids through the implementation of the best management practices established in Special Provision VII.C.3 of the CAAP General Order.

RECEIVING WATER LIMITATIONS

Discharge to the Feather River is within the Sacramento and San Joaquin River Basins, therefore, receiving water limits contained in the CAAP General Order for the Sacramento and San Joaquin River Basins are applicable to the discharge.

OTHER REQUIREMENTS

- The CDWR, as owner of the property and the facilities at which a surface water discharge occurs, is responsible for guaranteeing compliance with the CAAP General Order. CDFW retains primary responsibility for compliance with the CAAP General Order, including day-to-day operations and monitoring.
- Collected screenings and other solids, including fish carcasses, shall be disposed of in a
 manner approved by the Executive Officer, and consistent with the Consolidated Regulations
 for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27,
 California Code of Regulations, Division 2, Subdivision 1, Section 2005, et seq.
- 3. The Discharger shall continue to electronically submit Self-Monitoring Reports (SMRs) using the State Water Resources Control Board's California Integrated Water Quality System (CIWQS) program website (http://www.waterboards.ca.gov/ciwqs/index.html). Directions for SMR submittal are provided on the CIWQS website in the event of a service interruption during electronic submittal.
- 4. Aquaculture activities defined in the Code of Federal Regulations (40 C.F.R. 122.25(b)) will be subject to the annual fee for general NPDES permits and de minimus discharges that are regulated by individual or general NPDES permits, as described in Title 23 of the California Code of Regulations, Division 3, Chapter 9, Article 1, Section 2200(b)(9) for Category 3 discharges.
- 5. The CAAP General Order expires on **31 December 2019**. Only those CAAP facilities authorized to discharge and who submit a notice of intent **at least 180 days** prior to the expiration date of Order R5-2014-0161 will remain authorized to discharge under administratively continued permit conditions.
- 6. In accordance with section VII.C.3.a of the CAAP General Order, the Discharger shall certify within 90 days from the issuance of this NOA that a Best Management Practices (BMP) Plan has been developed and is being implemented. To satisfy this requirement, the Discharger shall submit a letter to the Central Valley Water Board certifying compliance with BMP Plan requirements by 23 August 2016. The Discharger can develop a new BMP Plan or an existing BMP Plan may be modified for use under this requirement. 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,

KARL E. LONGLEY ScD, P.E., CHAIR | PAMELA C. CREEDON P.E., BCEE, EXECUTIVE OFFICER

if any, 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 Facility's operation which materially increases the generation of pollutants or their release or potential release to surface waters

ENFORCEMENT

Failure to comply with the CAAP General Order may result in enforcement actions, which could include civil liability. Effluent limitation violations can be subject to a mandatory minimum penalty of \$3,000 per violation. In addition, late monitoring reports can be subject to penalties. When discharges do not occur during a monitoring period, the Discharger must still submit a monitoring report indicating that no discharge occurred in order to avoid being subject to enforcement actions.

COMMUNICATION

All monitoring report submittals, notification of the beginning and end of discharge, questions regarding compliance and enforcement, and questions regarding permitting aspects shall be directed to the Central Valley Water Board Redding Office NPDES unit at (530) 224-4845.

Please note that we are transitioning to a paperless office. Therefore, all documents other than monitoring reports shall be converted to a searchable portable document format (i.e., a document with a "pdf" extension) and submitted by email to centralvalleyredding@waterboards.ca.gov. Documents that are 50 MB or larger should be transferred to a CD, DVD, or flash drive and mailed to our office, attention "ECM Mailroom."

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 et seq. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this NOA, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day.

Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

Original signed by Clint Snyder, for

Pamela C. Creedon Executive Officer

ZC:sjs

Enclosures (6):

- 1) Enclosure A Administrative Information
- 2) Enclosure B Location Map
- 3) Enclosure C Flow Schematic
- 4) Enclosure D Monitoring and Reporting Program
- 5) Enclosure E Approved Aquaculture Drug and Chemical Use
- 6) CAAP General Order R5-2014-0161

KARL E. LONGLEY ScD, P.E., CHAIR | PAMELA C. CREEDON P.E., BCEE, EXECUTIVE OFFICER

cc w/o encl via email : Terry Jackson, California Department of Fish and Wildlife, Rancho Cordova

David Smith, U.S. EPA, Region IX, San Francisco

Phil Isorena, State Water Resources Control Board, Sacramento

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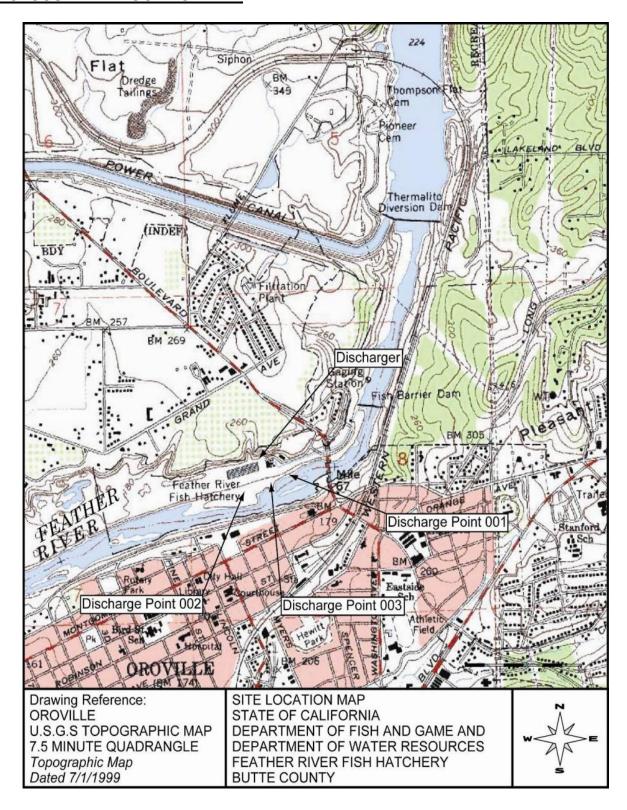
cc with encl : Anna Kastner, California Department of Fish and Wildlife, Oroville



ENCLOSURE A – ADMINISTRATIVE INFORMATION

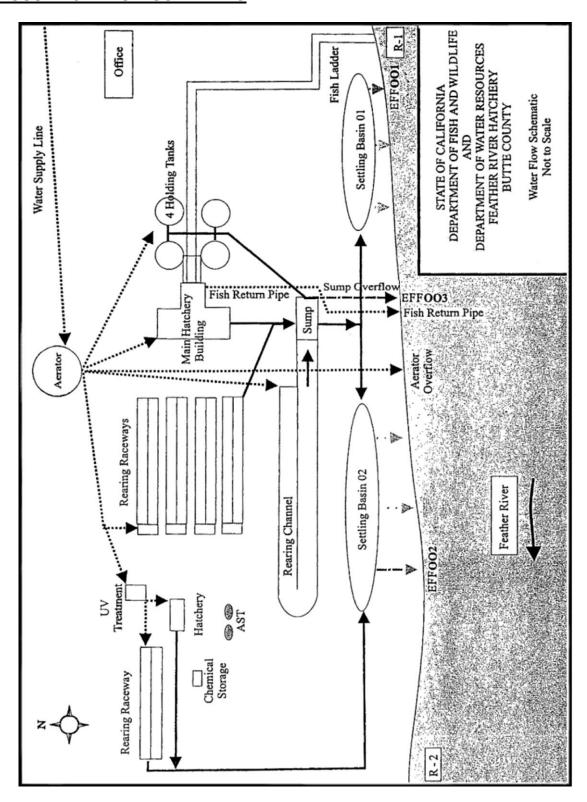
Name of Facility	Feather River Fish Hatchery	
Type of Facility	Cold Water Aquaculture Facility, SIC Code 0921	
WDID	5A040804001	
General Order NOA Enrollee Number	R5-2014-0161-032	
Discharger	California Department of Fish and Wildlife	
Facility Address	5 Table Mountain Blvd. Oroville, CA 95965	
Land Owner (Address)	California Department of Water Resources 460 Glenn Oroville, CA 95966 (530) 534-2324	
Facility Contact, Title, and Phone	Anna Kastner, Fish Hatchery Manager II (530)-538-2222	
Authorized Person to Sign and Submit Reports	Jay Rowan, Acting Senior Environmental Scientist Supervisor, (916)-358-2883	
Mailing Address	5 Table Mountain Blvd. Oroville, CA 95965	
Billing Address	5 Table Mountain Blvd. Oroville, CA 95965	
Estimated Total Annual Weight of Fish Production	385,000 lbs	
Major or Minor Facility	Minor	
Threat to Water Quality	2	
Complexity	В	
Expected Maximum Total Discharge from Facility	110 cfs (or 71 mgd)	
Watershed	Sacramento River Basin	
Receiving Water	Feather River	
Receiving Water Type	Inland surface water	

ENCLOSURE B - LOCATION MAP



ENCLOSURE C - FLOW SCHEMATIC

BUTTE COUNTY



ENCLOSURE D – MONITORING AND REPORTING PROGRAM

The Discharger is obligated to comply with the monitoring and reporting requirements contained in the CAAP General Order, Attachment C — Monitoring and Reporting Program. As part of the CAAP General Order, Attachment C, a NOA must contain certain requirements, which are provided in this enclosure. Enclosure D also provides a summary of other requirements described in Attachment C of the CAAP General Order.

This Facility produces greater than 100,000 pounds of aquatic animals per year. Tables D-2, D-3, and D-4 are based on the monitoring and reporting program shown in Attachment C of the CAAP General Order for facilities producing greater than 100,000 pounds of aquatic animals per year (Attachment C — Sections III.A, IV.A.1, and VIII.C).

A. Monitoring Locations. Monitoring locations are defined as follows in Table D-1 and a flow schematic showing site-specific monitoring locations is provided in Enclosure C, a part of this NOA.

Table D-1. Monitoring Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
	INF-001	Influent shall be collected at a location where a representative sample can be obtained, prior to freshwater entering the Facility [Approximate location: 39°31'4.73" N latitude and 121°33'14.32" W longitude].
Outfall 001	EFF-001	Treated hatchery wastewater from Settling Basin 01 shall be collected after the last point at which wastes are introduced and prior to treated hatchery wastewater entering the Feather River [Approximate location: 39°31'2.86" N latitude and 121°33'8.96" W longitude].
Outfall 002	EFF-002	Treated hatchery wastewater from Settling Basin 02 shall be collected after the last point at which wastes are introduced and prior to treated hatchery wastewater entering the Feather River [Approximate location: 39°31'0.69" N latitude and 121°33'19.46" W longitude].
Outfall 003	EFF-003	Overflow hatchery wastewater from the central sump basin shall be collected after the last point at which wastes are introduced and prior to hatchery wastewater entering Feather River [Approximate location: 39°31'1.96" N latitude and 121°33'11.47" W longitude].
	RSW-001	The receiving water, upstream of the Facility, shall be collected at a safe location immediately below the fish barrier dam near the fish ladder entrance [Approximate location: 39°31'12.43" N latitude and 121°32'52.22" W longitude].
	RSW-002	The receiving water, downstream of the Facility, shall be collected downstream of Settling Basin 02 near the lower access road to the Feather River [Approximate location: 39°30′58.33″ N latitude and 121°33′24.94″ W longitude].

B. Influent Monitoring Requirements. When there is a discharge at Outfall(s) 001, 002, and/or 003, the Discharger shall monitor influent to the Facility at monitoring location INF-001 for the frequencies/parameters shown in Table D-2. Samples shall be collected at approximately the same time as effluent samples.

Table D-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
рН	S.U.	Grab	1/month ²	1
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/month ²	1
Copper (Total recoverable)	μg/L	Grab	1/month during CuSO ₄ use ^{2,3}	1
Hardness (as CaCO ₃)	mg/L	Grab	1/month during CuSO ₄ use ²	1
Total Suspended Solids	mg/L	Grab	1/month ²	1

Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136.

C. Effluent Monitoring Requirements. When there is a discharge at Outfall(s) 001, 002, and/or 003, the Discharger shall monitor effluent at any location in which a direct discharge to the Feather River occurs for the frequencies/parameters shown in Table D-3. Samples shall be collected at approximately the same time as influent samples.

Table D-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	cfs	Flow Measurement Device ¹	1/week	
Total Suspended Solids (TSS)	mg/L	Grab	1/month	2
Net TSS (effluent minus influent)	mg/L	Net Calculation	1/month	
Turbidity	NTU	Grab	1/month	2
рН	S.U.	Grab	1/month ⁴	2
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/month ^{3,7}	2

Samples shall be collected approximately at the same time as effluent samples.

The maximum reporting level required for total recoverable copper is 0.5 μg/L, in accordance with Section 2.4.2 and Appendix 4 of the SIP.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Copper (Total Recoverable)	μg/L	Grab	1/month during CuSO ₄ use ^{4,7}	2
Hardness (as CaCO ₃)	mg/L	Grab	1/month during CuSO ₄ use ⁴	2
Formaldehyde	mg/L	Grab	1/month during Formalin use ⁷	2,5
Chlorine	mg/L	Grab	1/quarter during chlorine use ⁷	2,6

Effluent flow shall be monitored weekly using either a flow measurement device or method as required by CAAP General Order, Attachment C, Section I.E.

Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.018 mg/L.

D. Receiving Water Monitoring Requirements. When there is a discharge at Outfall(s) 001, 002, and/or 003, receiving water samples shall be collected from monitoring locations RSW-001 and RSW-002 for the frequencies/parameters shown in Table D-4. Samples shall be collected at approximately the same time as effluent samples.

Table D-4. Receiving Water Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	1/month	1
Temperature	°C	Grab	1/month	1
Turbidity	NTU	Grab	1/month	1
pH	S.U.	Grab	1/month	1
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/month	1

Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136.

Samples shall be collected monthly. If sodium chloride is used, the monthly monitoring of EC shall be conducted during treatment.

⁴ The maximum reporting level required for total recoverable copper is 0.5 μg/L, in accordance with Section 2.4.2 and Appendix 4 of the SIP. The monthly sample shall be collected during the time of peak discharge of copper, at least one hour after start of treatment. Effluent hardness and pH shall be measured at the same time as total recoverable copper.

⁵ Estimated concentrations of formaldehyde may be reported in lieu of analytical monitoring during Formalin use. See Section IX.A of the CAAP General Order for calculation procedures. If analytical monitoring is conducted, when Formalin is added to the waters of the Facility, formaldehyde concentration shall be measured during time of peak discharge of Formalin, at least one hour after start of treatment.

Per Section IX.A of the CAAP General Order, the discharger shall report all aquaculture drug and chemical use as part of the Monthly Drug and Chemical Use Report that is submitted on a quarterly basis.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Hardness (as CaCO ₃)	mg/L	Grab	1/month during CuSO ₄ use ²	1

Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions. Attention shall be given to the presence or absence of:

- a. Floating or suspended matter
- b. Discoloration
- c. Bottom deposits
- d. Aquatic life
- e. Visible films, sheens, or coatings
- f. Fungi, slimes, or objectionable growths
- g. Potential nuisance conditions

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

- **E. Monthly Drug and Chemical Use Report.** The Discharger shall develop a monthly drug and chemical use report describing all aquaculture drugs or chemicals used at the Facility in accordance with Section IX.A of the CAAP General Order. The report shall be submitted with the quarterly self-monitoring reports.
- **F.** Annual Feeding and Production Report. The Discharger shall develop an annual feeding and production report in accordance with the CAAP General Order, Attachment C, Section IX.C. The report shall be submitted **28 February, annually,** and include 1) monthly food usage in pounds for each calendar month of the previous year, and 2) annual production of aquatic animals in pounds per year for the previous year.
- G. Priority Pollutant Metals Monitoring. In accordance with the CAAP General Order, Attachment C, Section IX.B., the Discharger shall monitor the effluent (at monitoring locations EFF-001, EFF-002, and EFF-003) and the upstream receiving water (RSW-001) for the metals listed in Table G-1 of the CAAP General Order once during the term of Order R5-2014-0161. Samples taken from the settling basins (Outfall 001 and 002) and the sump basin (Outfall 003) are considered representative of the discharge water quality if no direct surface water discharge occurs. The monitoring shall occur after 1 January 2018, but no later than 1 July 2019. The discharger shall electronically submit the priority pollutants metals monitoring results using the State Water Board's California Integrated Water Quality System program website (http://www.waterboards.ca.gov/ciwqs/index.html), within 60 days of the final sampling event. Refer to CAAP General Order, Attachment G, for the specific monitoring requirements.

When copper sulfate is added to waters of the facility, hardness (as CaCO₃) shall be measured monthly during treatment.

REPORTING REQUIREMENTS

Self-monitoring reports (SMRs) are required to be submitted quarterly and annually. Table D-5, below, summarizes SMR due dates required under the CAAP General Order. Quarterly monitoring reports must be submitted until coverage is formally terminated in accordance with the CAAP General Order, even if there is no discharge during a reporting quarter.

Table D-5. SMRs required in the Monitoring and Reporting Program (Attachment C, CAAP General Order)

Sampling Frequency	Monitoring Period Begins On	Monitoring Period	SMR Due Date
1/month	1 January	First day of calendar month through last day of calendar month	1 May (1 Jan – 31 Mar) 1 Aug (1 Apr – 30 Jun) 1 Nov (1 Jul – 30 Sep) 1 February of following year (1 Oct – 31 Dec)
1/quarter	1 January	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 Aug 1 Nov 1 February of following year
1/year	1 January	January 1 through December 31	1 February of following year

In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition and/or limitation of the CAAP General Order, the Discharger shall notify the Central Valley Water Board Redding Office by telephone at (530) 224-4845 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Central Valley Water Board waives confirmation. Written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe measures being taken to remedy current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as described above and to be submitted at the time of the normal self-monitoring report.

ENCLOSURE E - APPROVED AQUACULTURE DRUGS AND CHEMICALS USE

The following drugs and chemicals are used at the Facility to prevent/medicate fish for any potential contamination by bacteria, fungi, viruses and pathogens, and to reduce the spread of disease among the confined fish population. Some chemicals may be used to clean Facility treatment/operation components.

Drug or Chemical	Estimated Maximum Daily Amount Used	Method of Application	Estimated Maximum Concentration in Effluent
Amoxicillin trihydrate	40 mg of drug per kg of fish body weight	Intraperitoneal injection	Unknown
Carbon dioxide	Bubbled in water until effective	Immersion bath	Unknown
Chloramine T	10 parts per million (ppm)	Bath	0.55 to 10 ppm
Erythromycin	40 mg of drug per kg of b fish body weight at 30 day intervals. Also used in medicated feed or fish pills at a rate of 100 mg of drug per kg of body weight	Intraperitoneal injection or used in feed	Unknown
Florfenicol	10 mg of drug per kg of fish body weight per day	Feed	Unknown
Formalin	25 ppm	Bath	1.38 to 25 ppm
Hydrogen peroxide	100 ppm or less	Bath	5.6 to 100 ppm
lodophor	100 mg/L	Bath	0.024-0.07 ppm
Oxytetracycline HCI (Terramycin)	100 ppm or approximately 270 grams per 600 gallon tank	Bath	5.6 - 100 ppm
Oxytetracycline medicated feed	3.75 grams per 100 lbs of fish per day	Feed	Unknown
Penicillin G Potassium	150 IU/mL (500,000,000 IU per 311.8 grams) ~ 100 ppm	Bath	2.6 ppm
Potassium permanganate	Flush treatment – 2 ounces per cfs Bath – 2 ppm or less	Flush or bath	Flush – 0.13 to 2.32 ppm Bath – 0.11 ppm to 2 ppm
Romet (sulfadimethoxine ormetoprim)	50 mg of drug per kg of fish body weight per day	Feed	Unknown
Sodium chloride	150-200 lbs/cfs or 2.67-3.56 parts per trillion	Flush	200 to 3,600 ppm
Sodium bicarbonate	142-642 mg/L	Immersion bath	Not discharged
Tricaine methanesulfonate (MS-222)	50-250 mg/L	Immersion bath	Not discharged