



Central Valley Regional Water Quality Control Board

20 January 2015

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Tim Goodson, President Calaveras Trout Farm, Inc. P.O. Box 111 Snelling, CA 95369

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Bryan Kelly Merced Irrigation District 744 West 20th Street Merced, CA 95340

NOTICE OF APPLICABILITY; GENERAL WASTE DISCHARGE REQUIREMENTS FOR COLD WATER CONCENTRATED AQUATIC ANIMAL PRODUCTION FACILITY DISCHARGES TO SURFACE WATERS; ORDER R5-2014-0161 (CAAP GENERAL ORDER; CALAVERAS TROUT FARM, INC. AND MERCED IRRIGATION DISTRICT; TROUT REARING FACILITY; MERCED COUNTY

The California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) issued a Notice of Applicability (NOA) on 26 December 2012 for coverage under CAAP General Order (Order R5-2010-0018-01) for the Trout Rearing Facility (Facility) owned by Calaveras Trout Farm, Inc. and located on land owned by Madera Irrigation District. Calaveras Trout Farm, Inc. and the Merced Irrigation District are hereinafter jointly referred to as the Discharger.

On 5 December 2014, the Central Valley Water Board adopted Order R5-2014-0161 renewing the CAAP General Order. General Order R5-2014-0161 became effective on 1 January 2015. The Discharger submitted a Notice of Intent on 3 July 2014 to continue coverage for the Facility under the CAAP General Order. Effective 1 January 2015, this NOA provides continued coverage for the Facility under the CAAP General Order to discharge to Merced River, superseding the previous NOA issued on 26 October 2012. CAAP General Order R5-2014-0161-026 and National Pollutant Discharge Elimination System (NPDES) Permit No. CAG135001 are assigned for this Facility. Administrative information for the Facility is provided in Enclosure A, a location map is provided in Enclosure B, a flow schematic is provided in Enclosure C, a Monitoring and Reporting Program is provided in Enclosure D, and approved aquaculture drugs and chemicals use in Enclosure E, which are included as part of this NOA. Please reference your CAAP General Order number R5-2014-0161-026, in all correspondences and submitted documents.

The CAAP General Order is enclosed and may also be viewed at the following web address: http://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/. You are urged to familiarize yourself with the contents of the entire CAAP General Order and this NOA. The Facility operations and discharges shall be managed in accordance with the requirements contained in the CAAP General Order, this NOA, and with the information submitted by the Discharger.

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

FACILITY INFORMATION/DISCHARGE DESCRIPTION

The Facility is at 4902 Robinson Road in Snelling, in Section 12, T5S, R14E, MDB&M, as shown in Enclosure B, a part of this NOA. The Merced Irrigation District owns the property and Calaveras Trout Farm, Inc. owns and operates the Facility. The Facility is a flow through system that annually produces approximately 520,000 pounds of rainbow trout; 10,000 pounds of brook trout; 10,000 pounds of German brown; and 1,000 pounds of white sturgeon.

Table 1 below shows the predicted 5-year maximum annual harvestable fish production and the maximum monthly feed use for the Facility predicted by the Discharger in the 3 July 2014 NOI.

Table 1. 5-Year Maximum Aquatic Animal Production and Feed Use

Hatchery	5-Year Maximum Annual Harvestable Aquatic Animal Production (lbs)	Maximum Monthly Feed Use (lbs)	
	Rainbow trout – 520,000 lbs	, ,	
Trout Rearing Facility	Brook trout - 10,000 lbs	58,333 lbs	
Гасіціц	German brown - 10,000 lbs]	
	White sturgeon – 1,000 lbs		

The Discharger uses a 620-foot channel to divert water from the Merced River at the Crocker Huffman dam to the Facility. Four pipes within the 620-foot channel divert water to different sections of the Facility. The first pipe, which is 50 feet from the end of the channel, distributes five cubic feet per second (cfs) to sixteen, 24-foot round cement tanks. The wastewater from the round tanks passes through two settling ponds before it is combined with the remainder of the Facility's wastewater, where it is then discharged to the Merced River. At the end of the 620-foot channel there are three pipes that distribute the water to the rest of the Facility. The first pipe distributes two cfs to one, 600-foot earthen raceway, which is divided into three sections. The second pipe distributes 28 cfs to seven, 600-foot earthen raceways, which are divided into six different sections. The third pipe distributes 15 cfs in the following manner: eight cfs to two, 600-foot earthen raceways, which are divided into three sections and seven cfs to the hatchery. The wastewater from the raceways are combined and treated through seven settling ponds and then combined with the wastewater from the round cement tanks and the hatchery before it is discharged to the Merced River.

The water flow through each settling pond can be diverted to allow for cleaning. The ponds are cleaned twice a year by raking out each pond with a dragline. The removed solids are left on the bank to dry out and then relocated for composting. The composting site is about 800 feet from the Facility. In addition, fish carcasses are removed daily from both the raceways and the hatchery and are typically composted as well. The Discharger states that in the event of a significant problem resulting in a large number of mortalities, a local rendering company is called to haul the mortalities away.

Wastewater is discharged from the Facility to the Merced River at Discharge Point 001 as shown in Enclosure C, a part of this NOA, and as described below:

Discharge Point 001 - Wastewater discharged from the Facility to the Merced River.

The Discharger indicated in the 3 July 2014 Notice of Intent that the Facility discharges approximately 18.4 million gallons per day (mgd) of wastewater, on average, from the Facility continuously to the Merced River (Discharge Point 001).

INTAKE WATER CREDITS

The maximum reported influent concentration for copper exceeds the applicable screening levels specified in Table H-1 of the CAAP General Order. The Discharger, however, has demonstrated that the discharge from the Facility meets the conditions for granting intake water credits for copper. The source of the pollutant is the intake from the receiving water, which is the same receiving water the Facility discharges to. Based on the Discharger's priority pollutant sampling data collected between July 2012 to June 2014, the screening level for copper was exceeded in the intake water. However, the reported effluent concentrations do not exceed the intake concentrations nor the copper screening level, and the Discharger does not add copper in the process. Therefore, the water quality-based effluent limitations for copper have been established considering intake water credits.

EFFLUENT LIMITATIONS

1. Effluent limitations are specified in Section V. Effluent Limitations and Discharge Specifications of the CAAP General Order. The following effluent limitations (Table 2) are applicable to this discharge and are contained in Sections V.A and V.B of the CAAP General Order:

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	
Copper, Total Recoverable	μg/L		1.6 ²	

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).

- The Discharger shall comply with the copper effluent limitations required in accordance with the CAAP General Order, Section V.B.1.c, using a receiving water hardness of 8.9 mg/L (as CaCO₃). However, an intake water credit has been granted for copper. Therefore, compliance with this limitation shall be in accordance with the intake water credits in CAAP General Order, Section V.A.2 (i.e., the monthly average total recoverable copper concentration and mass in the effluent shall not exceed the corresponding monthly average concentration and mass as measured in the influent).
- 2. In accordance with Section V.A.1.b. of the CAAP General Order, 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

The Facility's discharge to the Merced River is within the Sacramento and San Joaquin River Basins, therefore, the receiving water limitations contained in the CAAP General Order for the Sacramento and San Joaquin River Basins are applicable to this discharge.

OTHER REQUIREMENTS

- 1. The discharge from the Facility (Discharge Point 001) shall not exceed a monthly average flow of 32 million gallons per day (mgd).
- 2. 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)

Tim Goodson & Bryan Kelly Calaveras Trout Farm, Inc.

Program website (http://www.waterboards.ca.gov/water_issues/programs/ciwqs). The CIWQS website will provide directions for SMR submittal in the event there will be service interruption for electronic submittal.

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- 3. 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.
- 4. 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.
- 5. 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 the BMP Plan requirements by 20 April 2015. 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 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.

ENFORCEMENT

Failure to comply with the CAAP General Order may result in enforcement actions, which could include civil liability. Effluent limitation violations are subject to a Mandatory Minimum Penalty (MMP) of \$3,000 per violation. In addition, late monitoring reports may be subject to MMPs. When discharges do not occur during a quarterly report monitoring period, the Discharger must still submit a quarterly monitoring report indicating that no discharge occurred to avoid being subject to enforcement actions.

COMMUNICATION

All monitoring report submittals, notification of the beginning and end of discharge, and questions regarding compliance and enforcement shall be directed to Jill Walsh of the Central Valley Water Board's NPDES Compliance and Enforcement Unit. Ms. Walsh can be reached at (559) 445-5130 or Jill.Walsh@waterboards.ca.gov.

Questions regarding the permitting aspects of this CAAP General Order, and written notification for termination of coverage under the CAAP General Order, shall be directed to Alex Mushegan of the Central Valley Water Board's NPDES Permitting Unit. Mr. Mushegan can be reached at (559) 488-4397 or Alexander.Mushegan@waterboards.ca.gov.

Please note that the Central Valley Water Board is implementing a Paperless Office system. Therefore, all documents other than monitoring reports shall be converted to a searchable Portable Document Format (PDF) and submitted by email to centralvalleyfresno@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 Resources Control Board to review the action in accordance with California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Resources Control 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 Resources Control 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.

Pamela C. Creedon
Executive Officer

May L. Kalgers

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 (Discharger only)

cc: David Smith, U.S. EPA, Region IX, San Francisco (via email)

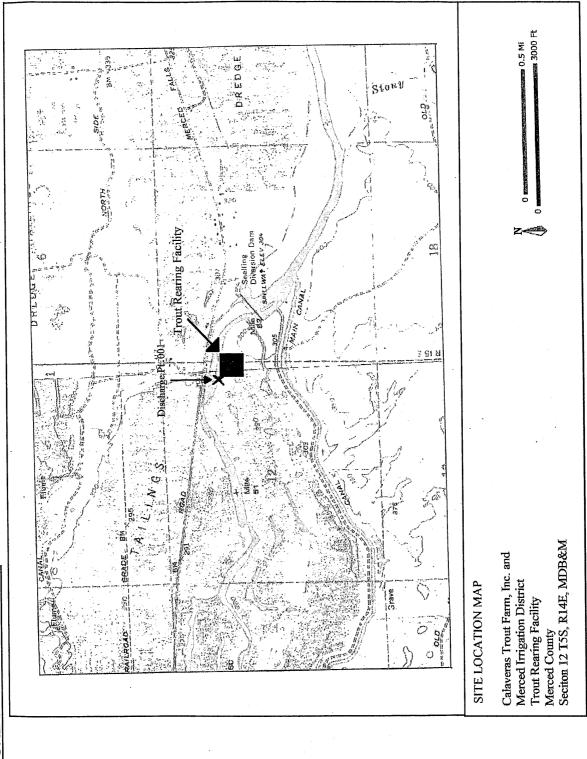
Phil Isorena, State Water Resources Control Board, Sacramento (via email)

ENCLOSURE A – ADMINISTRATIVE INFORMATION

Name of Facility	Trout Rearing Facility		
Type of Facility	Cold Water Concentrated Aquatic Animal Production Facility, SIC Code 0921		
WDID	5C242001001		
General Order NOA Enrollee Number	R5-2014-0161-026		
Discharger	Calaveras Trout Farm, Inc. (Facility Owner/Operator) and Merced Irrigation District (Property Owner)		
Facility Address	4902 Robinson Road Snelling, CA 95369		
Land Owner (Address)	Merced Irrigation District 744 West 20 th Street Merced, CA 95340 (Contact: Bryan Kelly 209-722-5761 ext. 2810)		
Facility Contact, Title and Phone	Tim Goodson, President 209-536-6576		
Authorized Person to Sign and Submit Reports	Tim Goodson, President Stacey Goodson, Secretary		
Mailing Address	Calaveras Trout Farm, Inc. P.O. Box 111 Snelling, CA 95369		
Billing Address	Calaveras Trout Farm, Inc. P.O. Box 111 Snelling, CA 95369		
Total Weight Produced (Annual)	541,000 lbs		
Major or Minor Facility	Minor		
Threat to Water Quality	2		
Complexity B			
Facility Permitted Flow	32 million gallons per day (mgd)		
Watershed San Joaquin River Basin			
Receiving Water	Merced River		
Receiving Water Type	Inland surface water		

Enclosure B – Location Map Calaveras Trout Farm, Inc.





Enclosure C - Flow Schematic Calaveras Trout Farm, Inc.

GROW OUT RACEWAYS SETTLING PONDS ROUND TANKS FEED BINS TATCHES. RSW-002 00 4 $\boldsymbol{\zeta}$ Ш CALAVERAS TROUT FARM, INC. ISLAND *** ENCLOSURE C - FLOW SCHEMATIC -INF-001 Merced River RSW-001

ENCLOSURE D - MONITORING AND REPORTING PROGRAM

The Discharger is required to comply with the monitoring and reporting requirements contained in the CAAP General Order, Attachment C – Monitoring and Reporting Program. To the extent the CAAP General Order, Attachment C requires the NOA to specify certain requirements, this Enclosure D provides such specificity. This Enclosure D also provides a summary of various other requirements in Attachment C of the CAAP General Order.

This Facility is the category of production of greater than 100,000 pounds of aquatic animals produced per year. Tables D-2, D-3, and D-4 below are based on the monitoring in the CAAP General Order, Attachment C for facilities producing greater than 100,000 pounds of aquatic animals produced per year (Attachment C – Sections III.A, IV.A.1, and VIII.C).

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

Table D-1. Monitoring Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description	
	INF-001	Location where representative samples of the Facility's influent can be obtained prior to entering the Facility.	
001	EFF-001	Location where representative samples of the Facility's effluent can be obtained prior to discharge to the Merced River at Discharge Point-001	
	RSW-001	No more than 750 feet upstream from Discharge Point 001 in the Merced River	
	RSW-002	No more than 650 feet downstream from Discharge Point 001 in the Merced River	

B. Influent Monitoring Requirements. The Discharger shall monitor the influent to the Facility at Monitoring Location INF-001 as follows:

Table D-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Flow Measurement Device ¹	1/Week	
рН	S.U.	Grab	1/Month ³	2
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month ³	2
Copper, Total Recoverable	μg/L	Grab	1/Month during CuSO ₄ use ³	2, 4
Hardness (ás CaCO₃)	mg/L	Grab	1/Month during CuSO ₄ use ³	2
Total Suspended Solids	mg/L	Grab	1/Month ³	2

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

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

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

Enclosure D - Flow Schematic Calaveras Trout Farm, Inc.

- The maximum reporting level required for copper is 0.5 µg/L based on Section 2.4.2 and Appendix 4 of the SIP.
- C. Effluent Monitoring Requirements. The Discharger shall monitor treated wastewater at Monitoring Locations EFF-001 as follows:

Table D-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	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
pH	S.U.	Grab	1/Month ⁴	2
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month ^{3, 7}	2
Copper, Total Recoverable	μg/L	Grab	1/Month during CuSO₄ use ^{4,7}	2
Hardness (as CaCO ₃)	mg/L	Grab	1/Month during CuSO ₄ use ⁴	2
Formaldehyde	mg/L	Grab ⁵	1/Month during formalin use ^{5, 7}	2
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.

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 electrical conductivity shall be conducted during treatment.

The maximum reporting level required for copper is 0.5 µg/L based on 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.

Estimated concentrations of formaldehyde may be reported in lieu of analytical monitoring during Formalin use. See CAAP General Order, Attachment C, Section IX.A 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.

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

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.

Enclosure D – Flow Schematic Calaveras Trout Farm, Inc.

D. Receiving Water Monitoring Requirements. Receiving water samples shall be collected from Monitoring Locations RSW-001 and RSW-002 as follows:

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
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 monitoring report.

- E. Land Discharge Monitoring Requirements. The Discharger shall conduct septic tank and leachfield inspections annually and report the findings in the annual self-monitoring reports (due 1 February, annually) in accordance with CAAP General Order, Attachment C, Section VI.A.
- F. Monthly Drug and Chemical Use Report. The Discharger shall develop a monthly drug and chemical use report in accordance with CAAP General Order, Attachment C, Section IX.A describing all aquaculture drugs or chemicals used at the Facility. The report shall be submitted with the quarterly self-monitoring reports.
- **G.** Annual Feeding and Production Report. The Discharger shall develop an annual feeding and production report in accordance with CAAP General Order, Attachment C, Section IX.C. The report shall be submitted annually by 28 February and include 1) monthly food usage in pounds for each calendar month for the previous year, and 2) annual production of aquatic animals in pounds per year for the previous year.
- H. Priority Pollutant Metals Monitoring. In accordance with CAAP General Order, Attachment C, Section IX.B. The Discharger shall monitor the effluent (Monitoring Location EFF-001) and the upstream receiving water (Monitoring Location RSW-001) for the metals listed in Table G-1 of the

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

CAAP General Order, once during the term of Order R5-2014-0161. **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 (CIWQS) Program Web site (http://www.waterboards.ca.gov/water_issues/programs/ciwqs), **within 60 days of the final sampling event**. Refer to CAAP General Order, Attachment G for the specific monitoring requirements.

REPORTING REQUIREMENTS

Monitoring in accordance with the CAAP General Order shall begin on **20 January 2015**. Self-monitoring reports (SMRs) are required to be submitted quarterly and annually. The Discharger shall comply with the reporting requirements specified in CAAP General Order, Attachment C, Section X. The first SMR required under the renewed CAAP General Order is due 1 May 2015, and shall include monitoring conducted from 20 January through 31 March 2015. Table D-5, below, summarizes the SMR due dates required under the CAAP General Order. Quarterly monitoring reports must be submitted until your coverage is formally terminated in accordance with the CAAP General Order, even if there is no discharge during the 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	20 January 2015	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 Feb of following year (1 Oct – 31 Dec)
1/Quarter	20 January 2015	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	20 January 2015	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, maximum daily effluent limitation, or receiving water limitation of the CAAP General Order, the Discharger shall notify the Central Valley Water Board by telephone at (559) 445-5116 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 self-monitoring report.

Enclosure E – Approved Aquaculture Drugs and Chemicals Use Calaveras Trout Farm, Inc.

ENCLOSURE E - APPROVED AQUACULTURE DRUGS AND CHEMICALS USE

The following drugs and chemicals are used at the Facility to treat fish for parasites, fungi, and bacteria, as well as to clean rearing raceways to reduce the spread of disease among the confined fish population.

Drug or Chemical	Maximum Daily Amount Used	Method of Application	Maximum Amount in Effluent
Acetic Acid	500 – 1,000 ppm	Dip in container	Not discharged
Amoxicillin trihydrate	40 mg/kg of fish	Injected	Negligible
Carbon dioxide gas	variable	Injected into tank	Unknown
Chloramine T	20 ppm/1 hr/raceway	Drip	1.3 ppm
Erythromycin	40 mg/kg of fish	Injected	Negligible
Florfenicol	15 mg/kg of feed	In feed	Negligible
Hydrogen peroxide	100 ppm/ 1 hr/ raceway	Drip	6.44 ppm with no breakdown of chemical
lodine	100 ppm	Egg bath in 5 gal bucket	Not discharged
Oxytetracycline HCL	100 ppm	Bath in tanks	0.22 ppm
Penicillin G	150 IU/mL	6 hr bath in tanks	0.33 IU/mL
Potassium permanganate	2 ppm/1 hr/raceway	Drip	0.13 ppm
Romet-30	50 mg/kg of feed	In feed	Negligible
Sodium bicarbonate	Variable (142-642 mg/L for 5 mins)	Bath in tank	Unknown
Sodium chloride	3% (19 lbs/66 gal tank)	Added directly to head	65 ppm
SLICE (emamectin benzoate)	In feed	In feed	Negligible
Tricaine methanesulfonate (MS-222)	40 ppm in container	In container	Not discharged