

Central Valley Regional Water Quality Control Board

20 June 2016

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California Department of Fish and Wildlife
601 Locust Street
Redding, CA 96001

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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 FISH AND WILDLIFE; MOUNT SHASTA FISH HATCHERY; SISKIYOU 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 Fish and Wildlife (CDFW) (hereinafter Discharger) on 28 September 2010 for coverage under Order R5-2010-0018, for the Mount Shasta 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 24 April 2014 for continued coverage under the CAAP General Order. Effective **20 June 2016**, this NOA provides the Facility with continued coverage under the CAAP General Order for the discharge of hatchery wastewater to Big Springs Creek, an unnamed tributary to Wagon Creek, and an unnamed tributary to Cold Creek, superseding a previous NOA issued on 28 September 2010. This Facility is assigned Order R5-2014-0161-033 and National Pollutant Discharge Elimination System (NPDES) Permit No. CAG135001. Please reference CAAP General Order **R5-2014-0161-033** 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 is viewable 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 are 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 1888, the California Fish Commission (now known as California Department of Fish and Wildlife) established the Sisson Hatchery (now known as the Mount Shasta Fish Hatchery). The Facility is located near Big Springs Creek, an upper tributary of the Sacramento River, in the City of Mount Shasta, California, Siskiyou County (near latitude N 41°18'29.88" and longitude W 122°19'45.89"), as shown in Enclosure B, a part of this NOA.

Freshwater is diverted from Big Springs Creek at a maximum flow rate of about 20 cubic feet per second (cfs) or about 13 million gallons per day (mgd). The Discharger controls diversion flows using a wooden plank and concrete barrier in Big Springs Creek, approximately 0.5 miles upstream of the Facility. Freshwater flows by gravity to an intake-settling pond for initial solids treatment; the pond has two overflow points, allowing surplus freshwater to enter a drainage ditch connected to settling Pond 38. A water wheel is utilized to convert the energy of flowing water into mechanical energy, which powers a control arm used to clean a perforated metal mesh screen; the screen is used to filter larger solids that pass through the northernmost settling pond. When the solids volume in the northernmost settling pond reaches capacity, a bypass channel is utilized for pond maintenance.

Freshwater is routed to the Nursery Ponds, Hatchery Building E, Hatchery Building B, and to a Museum after initial solids treatment. To improve influent water quality, the Discharger has planned to add several other treatment components after the initial settling pond, including: (1) a drum filter (to remove fine suspended particulates) and (2) ultraviolet sterilizers (to eradicate pathogens). Water from the Nursery Ponds is routed to fish raceways, and/or Pond 38. Hatchery wastewater from Building E is discharged into Pond 38 before entering an unnamed tributary to Wagon Creek. In May/June 2016, a structure was constructed at the outfall location of Pond 38 for the purposes of preventing fish passage and measuring flowrates.

Hatchery wastewater from the raceways is split between two parallel-operated settling ponds before discharge into an unnamed tributary to Cold Creek. An outlet pipe was placed in the westernmost settling pond for the purposes of diverting water through Pond X and into Pond 38. As part of a land sale agreement, a second outlet pipe is situated at the southern end of the westernmost settling pond to provide a private landowner with irrigation water. The unnamed tributary to Cold Creek runs through private property before entering Cold Creek; treated hatchery wastewater can be used for irrigation purposes before entering Cold Creek.

Trout Egg Production

Based on a Sacramento Superior Court ruling (*Pacific Rivers Council, et al., v. California Department of Fish and Game*; Case No. 06 CS 01451) an environmental review¹ was completed and provided the basis for fish stocking practices and fish development in California hatchery operations. Biological resources were considered in the environmental review, including the genetic effects of interbreeding between stocked trout and native species. As a result of the environmental review, only sterile triploid² trout are used to stock waters where there is the potential for stocked trout and anadromous steelhead interbreeding. The change in hatchery operations to include sterile triploid trout was

¹ California Department of Fish and Game and U.S. Fish and Wildlife Service (2010). "Hatchery and Stocking Program Environmental Impact Report/Environmental Impact Statement." Prepared by ICF Jones & Stokes, <<http://www.dfg.ca.gov/fish/Hatcheries/EIR/>> (Accessed on May 27, 2016).

² Triploid –a change in the development process that results in fish eggs having three sets of chromosomes. The development changes are created by forcing an egg to retain an additional chromosome that is normally ejected during egg development. The Discharger utilizes sensitive pressure shock treatment method to create triploid trout eggs.

implemented in order to: (1) conserve native fish genotypes and (2) protect endangered or threatened species.

A majority of sterile triploid trout eggs from the Facility are supplied to other California Department of Fish and Wildlife hatcheries.

Whirling Disease

Fish within confined flow-through facilities are inherently at risk of contracting disease and parasites. Recent concerns at the hatchery have developed from the presence of a microscopic parasite known as *Myxobolus cerebralis* (*M. cerebralis*), which is a known cause of whirling disease³.

The parasite *M. cerebralis* has a two-host life cycle, alternating between salmonid fish species and a benthic organism called the *Tubifex tubifex* (common name: sludge worm). Sludge worms live in the bottom deposits of streams and can be found in concentrations up to 10,000 worms per square yard of river bottom. The free-swimming form of *M. cerebralis* is called triactinomyxon (TAM), which develops in the worm host. Infection occurs when trout ingest or are dermally exposed to TAM. TAM parasites inhabit, multiply, and feed on fish cartilage, which can result in a visual whirling behavior caused by damage to the spinal cord⁴.

Hatchery personnel are involved in several projects to prevent disease/parasitic infections. Planned and/or completed projects include: (1) treatment of influent using a drum filter and ultraviolet sterilizers, (2) lining of nursery pond(s) to prevent sludge worm affixation to pond bottoms, and (3) addition of an instream trout cage to confirm/deny parasite presence.

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)
Rainbow Trout – 120,000	11,200
Eagle Lake Trout – 40,000	
Brook Trout – 5,000	
Brown Trout – 8,000	

³ Whirling disease can be characterized by erratic uncontrolled circular swimming behavior exhibited by infected fish, with some infections leading to extirpation. In addition, other signs of diseased fish may be present, such as black tail, skeletal deformities, and shortened gill cover. Many animals can be carriers of the parasite and exhibit no visible signs of the disease.

⁴ Mohamed, F. and Garling, D. (2004). "What is Whirling Disease?" North Central Regional Aquaculture Center. <http://lib.dr.iastate.edu/ncrac_factsheets/4> (Accessed on 10 June 2016).

Hatchery wastewater is discharged from the Facility to Big Springs Creek, an unnamed tributary to Wagon Creek, and an unnamed tributary to Cold Creek 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 flow-through hatchery wastewater from the spawning buildings, the earthen raceways, and the concrete Nursery Ponds, enters one of two parallel-operated final settling ponds (located in the southeastern section of the Facility) prior to discharge to an unnamed tributary to Cold Creek (Discharge Point 001). Hatchery wastewater at this outfall flows through private property and can be utilized for agricultural purposes before entering Cold Creek, approximately ¼ mile downstream of the outfall. Hatchery wastewater from the southeastern settling ponds can also be routed to Pond 38.

Outfall 002 – Includes flow-through hatchery wastewater from Hatchery Building E, freshwater overflow, hatchery wastewater from the Nursery Ponds, and hatchery wastewater from Pond X. Hatchery wastewater flows through Pond 38 prior to discharge to an unnamed tributary to Wagon Creek (Discharge Point 002). Treated hatchery wastewater at this outfall flows through private property and can be utilized for agricultural purposes before entering Wagon Creek.

Outfall 003 – Hatchery wastewater from the Nursery Ponds and freshwater overflow enters Big Springs Creek through this outfall (Discharge Point 003).

Domestic sewage from the hatchery buildings and private residences is discharged to septic tank/leachfield systems. Hatchery Building B and the shop have separate septic tanks with a common leachfield. The museum and an adjacent residence share a common septic tank/leachfield. The private residence adjacent to Pond X has a separate septic tank/leachfield. The remaining five residences and meat house have three septic tanks with service to a common leachfield.

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

¹ 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 Big Springs Creek, an unnamed tributary to Wagon Creek, and an unnamed tributary to Cold Creek, 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

1. The CDFW, 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.
2. 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 19 September 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, 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:reb

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

cc list on next page

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND WILDLIFE
MOUNT SHASTA FISH HATCHERY
SISKIYOU COUNTY

- 7 -

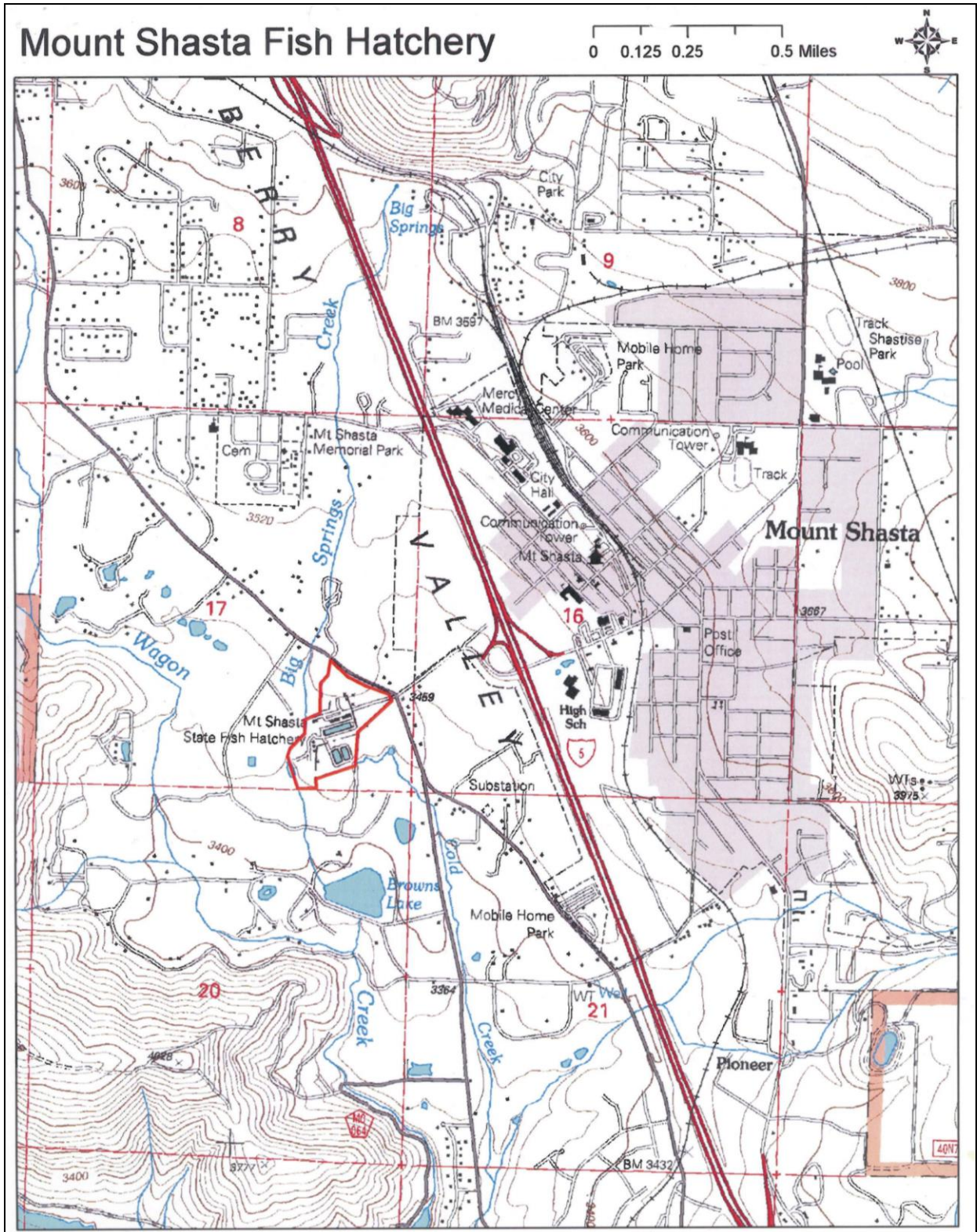
20 June 2016

cc w/encl via email: Terry Jackson, California Department of Fish and Wildlife, Rancho Cordova
Eric Jones, California Department of Fish and Wildlife, Mount Shasta
David Smith, U.S. EPA, Region IX, San Francisco
Phil Isorena, State Water Resources Control Board, Sacramento

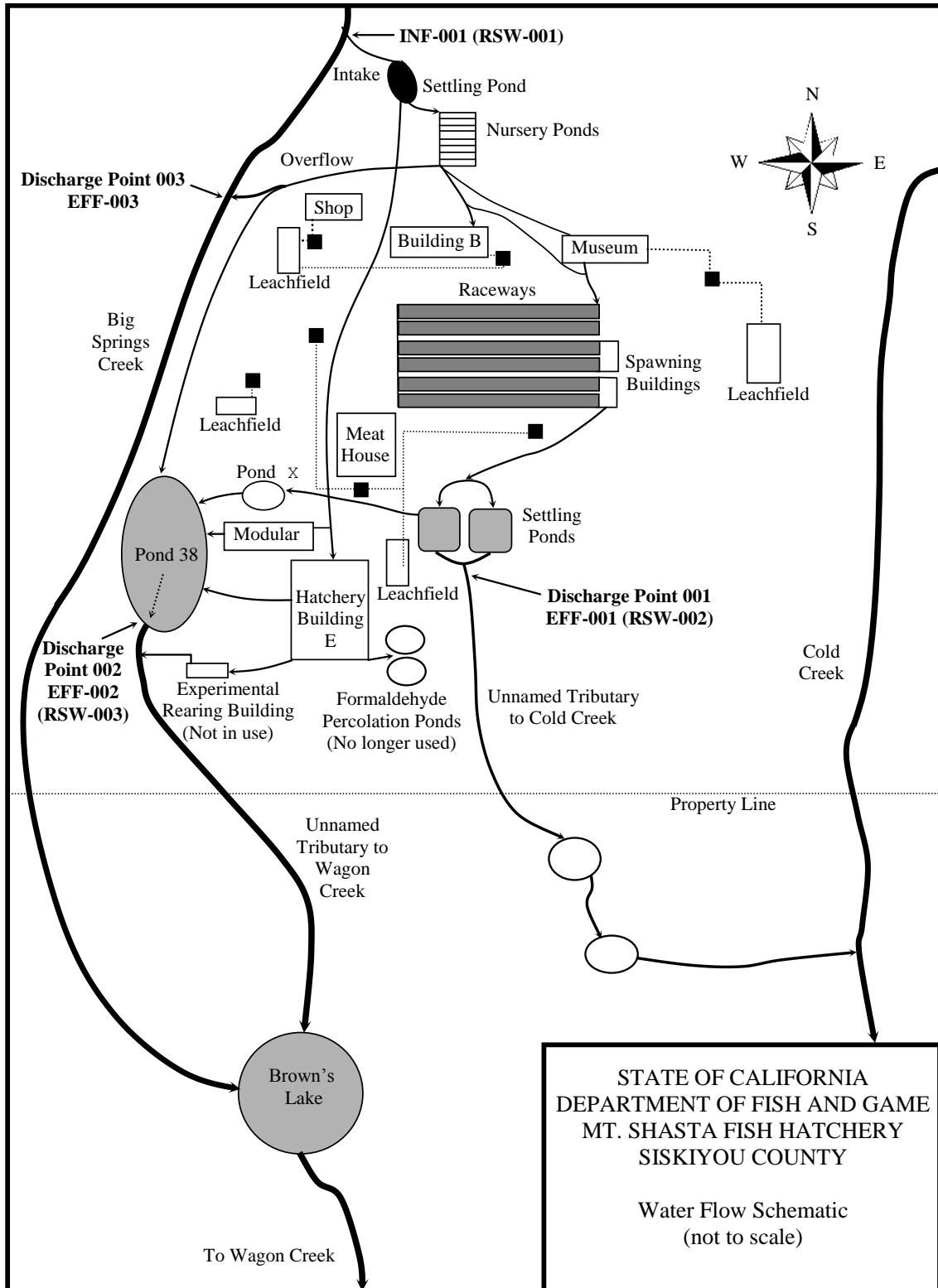
ENCLOSURE A – ADMINISTRATIVE INFORMATION

Name of Facility	Mount Shasta Fish Hatchery
Type of Facility	Cold Water Aquaculture Facility, SIC Code 0921
WDID	5A470803001
General Order NOA Enrollee Number	R5-2014-0161-033
Discharger	California Department of Fish and Wildlife
Facility Address	3 North Old State Road Mount Shasta, CA 96067
Land Owner (Address)	California Department of Fish and Wildlife 601 Locust Street Redding, CA 96001
Facility Contact, Title, and Phone	Eric Jones, Fish Hatchery Manager II (530)-926-2215
Authorized Person to Sign and Submit Reports	Linda Radford, Senior Hatchery Supervisor Northern Region (530)-225-2369
Mailing Address	California Department of Fish and Wildlife 601 Locust Street Redding, CA 96001
Billing Address	California Department of Fish and Wildlife 601 Locust Street Redding, CA 96001
Estimated Total Annual Weight of Fish Production	173,000 lbs
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Expected Maximum Total Discharge from Facility	20 cfs (or 13 mgd)
Watershed	Sacramento River Basin
Receiving Water	Big Springs Creek, an unnamed tributary to Wagon Creek, and an unnamed tributary to Cold Creek
Receiving Water Type	Inland surface water

ENCLOSURE B – LOCATION MAP



ENCLOSURE C – FLOW SCHEMATIC



STATE OF CALIFORNIA
 DEPARTMENT OF FISH AND GAME
 MT. SHASTA FISH HATCHERY
 SISKIYOU COUNTY

Water Flow Schematic
 (not to scale)

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 sampled at a location where a representative sample can be obtained, prior to freshwater entering the Facility [Approximate location: 41°18'34.37" N latitude and 122°19'47.99" W longitude].
Outfall 001	EFF-001	Treated hatchery wastewater from the southeastern settling ponds shall be sampled after the last point at which wastes are introduced and prior to treated hatchery wastewater entering an unnamed tributary to Cold Creek [Approximate location: 41°18'23.06" N latitude and 122°19'43.91" W longitude].
Outfall 002	EFF-002	Treated hatchery wastewater from Pond 38 shall be sampled after the last point at which wastes are introduced and prior to treated hatchery wastewater entering an unnamed tributary to Wagon Creek [Approximate location: 41°18'20.14" N latitude and 122°19'53.44" W longitude].
Outfall 003	EFF-003	Treated hatchery wastewater from the Nursery Ponds is comingled with unused freshwater. Treated hatchery wastewater shall be sampled after the last point at which wastes are introduced and prior to hatchery wastewater entering Big Springs Creek. Monitoring at this location is only necessary when discharge from the Nursery Ponds enters this outfall [Approximate location: 41°18'29.19" N latitude and 122°19'51.71" W longitude].
--	RSW-001	Monitoring at RSW-001, Big Springs Creek, can be completed at monitoring location INF-001. Constituents monitored at INF-001, which are equivalent to parameters monitored at RSW-001, can be used for both INF-001 and RSW-001 monitoring requirements [Approximate location: 41°18'34.37" N latitude and 122°19'47.99" W longitude].
--	RSW-002	Monitoring at RSW-002, an unnamed tributary to Cold Creek, can be completed at monitoring location EFF-001. Constituents monitored at EFF-001, which are equivalent to parameters monitored at RSW-002, can be used for both EFF-001 and RSW-002 monitoring requirements [Approximate location: 41°18'23.06" N latitude and 122°19'43.91" W longitude].

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	RSW-003	Monitoring at RSW-003, an unnamed tributary to Wagon Creek, can be completed at monitoring location EFF-002. Constituents monitored at EFF-002, which are equivalent to parameters monitored at RSW-003, can be used for both EFF-002 and RSW-003 monitoring requirements [Approximate location: 41°18'20.14" N latitude and 122°19'53.44" 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. Any parameters equivalent to those monitored at RSW-001 can used to meet monitoring requirements in Table D-2.

Table D-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	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

¹ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136.

² Samples shall be collected approximately at the same time as effluent samples.

³ 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.

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 surface water occurs for the frequencies/parameters shown in Table D-3. Samples shall be collected at approximately the same time as influent samples. Samples taken at monitoring location RSW-002, equivalent to those monitored at EFF-001, can be used to meet monitoring requirements in Table D-3. Samples taken at monitoring location RSW-003, equivalent to those monitored at EFF-002, can used to meet monitoring requirements in Table D-3.

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
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 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

¹ 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.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136.

³ 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.

⁶ Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.018 mg/L.

⁷ 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.

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, RSW-002, and/or RSW-003 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
Hardness (as CaCO ₃)	mg/L	Grab	1/month during CuSO ₄ use ²	1

¹ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. Part 136.

² When copper sulfate is added to waters of the facility, hardness (as CaCO₃) shall be measured monthly during treatment.

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. 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 Section VI.A of the CAAP General Order.

F. 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.

G. 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.

H. 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. **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.

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
Acetic Acid	335-500 parts per million (ppm) for flush treatments and 500-2000 ppm for bath treatments	Flush or Bath	Unknown
Amoxicillin trihydrate	40 mg of drug per kg of fish body weight	Intraperitoneal injection	Unknown
Aqui-S (potential future use)	34 ppm	Bath	Unknown
Argentyne	100 ppm	Bath	Unknown
Carbon dioxide	Bubbled in water until effective	Immersion bath	Unknown
Chloramine T (potential future use)	10 ppm	Bath	0.55 to 10 ppm
Emamectin Benzoate	50 µg of drug per kg of fish body weight per day	Feed	Unknown
Erythromycin	40 mg of drug per kg of fish body weight. 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
Iodophor	100 mg/L	Bath	0.024-0.07 ppm
Ovaplant®; Salmon Gonadotropin - Releasing Hormone analogue (sGnRH _a)	75 µg	Dorsal Injection	Unknown
Oxytetracycline HCl (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

Drug or Chemical	Estimated Maximum Daily Amount Used	Method of Application	Estimated Maximum Concentration in Effluent
Potassium permanganate	Flush treatment – 2 ounces per cfs Bath treatment – 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