11 April 2016

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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; PACIFIC GAS AND ELECTRIC COMPANY AND CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE; CRYSTAL LAKE FISH HATCHERY; SHASTA COUNTY

The California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board), issued a Notice of Applicability (NOA) to Pacific Gas and Electric Company and the California Department of Fish and Wildlife (hereinafter Discharger) on 28 September 2010 for coverage under Order R5-2010-0018, for the Crystal Lake 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 28 April 2014 to continue coverage under the CAAP General Order. Effective **6 April 2016**, this NOA provides the Facility with continued coverage under the CAAP General Order for discharge of hatchery wastewater to Baum Lake, superseding a previous NOA issued on 28 September 2010. This Facility is assigned Order R5-2014-0161-030 and National Pollutant Discharge Elimination System (NPDES) permit No. CAG135001. Please reference CAAP General Order **R5-2014-0161-030** 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 may 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 be 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

The Facility is located northeast of Cassel, CA, adjacent to Crystal Lake and Baum Lake on property owned by Pacific Gas and Electric Company and leased by the California Department of Fish and Wildlife. The property is located within Lower Hat Creek Hydrologic Subarea No. 526.34 in Shasta County (near 40°55'54.90"N latitude and 121°32'35.82" W longitude), as shown in Enclosure B, a part of this NOA.

Various species of trout are raised at the Facility, including rainbow trout, eagle lake trout, brook trout, and brown trout. Hatchery structures are distributed over approximately 40 acres and consist of: twelve concrete-lined upper/lower raceways (with five 100 foot (ft) ponds in each raceway, for a total of 60 ponds), two concrete-lined broodstock raceways (with three 100 ft. ponds in each raceway, for a total of 6 ponds), a hatchery building to accommodate egg/fry rearing with flow-through deep tanks and troughs, a building with eight additional deep tanks and three small circular tanks, an office/shop building, a truck garage, a storage freezer building, a domestic water pump house, public restrooms, three unlined settling ponds, several bulk feed storage bins, and seven residential housing units.

The upper/lower raceways and fry/egg rearing building receive approximately 11.6 million gallons per day (mgd) (18 cubic feet per second (cfs)) of resurgence water from Rock Creek Springs. Source water is screened for large debris before conveyance into six upper raceways. Water from the upper raceways is circulated through an aeration tower prior to entrance into six lower raceways. Hatchery wastewater flow is then split and discharged into two parallel unlined settling ponds before entering Baum Lake.

Approximately 4.2 mgd (or 6.5 cfs) of surface water from Crystal Lake (a spring supplied lake) is conveyed into two concrete-lined broodstock raceways that are located near the northernmost part of the Facility. Surface water from Crystal Lake passes through a screen before entering the raceways, which are split into three 100-foot segmented discrete rearing zones per raceway. After passing through the rearing area, hatchery wastewater is discharged to a single unlined settling pond before entrance into Baum Lake.

There are several domestic sewage sources and disposal methods utilized at the Facility. Domestic sewage from both the hatchery buildings and the residential housing is pumped from a holding tank into two sewage lagoons for disposal via evaporation and percolation; the sewage lagoon is encircled with a steel barbed-wire fence to prevent public contact. Impacts from the sewage lagoons are monitored via two groundwater monitoring wells located adjacent to the lagoons.

There are two septic systems at the Facility. Wastewater from an onsite public restroom is discharged into a septic system near the Facility's entrance and another septic system serves the shop and a residence located near the broodstock raceways.

Rock Creek Meadow Restoration Project for Shasta Crayfish (Pacifastacus fortis)

Rock Creek surface water is sourced from Rock Creek Springs and two spring-fed ponds (Rock Pond and Castro's Pond).

In 2016, a refuge habitat was constructed in Rock Creek for Shasta crayfish. The refuge habitat was constructed to restore segments of Rock Creek to pre-diversion conditions and reintroduce Shasta crayfish in Rock Creek. Rock Creek flows through the in-stream refuge habitat before flowing into the Facility's intake pipe.

Formalin Chemical Treatments

As part of hatchery operations, a 37% active formaldehyde solution is used to control: (1) external protozoan parasites, (2) monogenetic trematodes, (3) and fungi of the family *Saprolegniaceae* (Katz 1995). During formalin use, hatchery wastewater from the main hatchery building is discharged to a land surface impoundment, which is a dry sandy area behind the main hatchery building.

Henry's law constant for formaldehyde is diminutive in magnitude ($3.27x10^{-7}$ atm-m^3/mol) (Dong and Dasgupta 1986) and is consequently expected to have both low volatilization and low sediment adsorption properties (Lyman 1982). The New Jersey Department of Environmental Protection (2005) has indicated that formaldehyde can leach onto soil particles from an aqueous solution and, in a soil environment, be further biodegraded by bacteria present in soil. However, the magnitude of formaldehyde's octanol-water partition coefficient indicates a low potential for soil adsorption, consequently leading to additional mobility and leaching potential ($\log K_{ow} = 0.35$) (US EPA 1995; Swann et al. 1983). Experimental testing has indicated that degradation of formaldehyde is completed in several days under aerobic conditions and approximately four days under anaerobic conditions (Kitchens et al. 1976; Howard 1989); testing was completed in a die-away experiment using water from a stagnant lake.

Facility personnel control/manage the discharge of formalin to the land surface impoundment. The concentration of formaldehyde varies and depends on the number of egg stacks in use. During formalin application, the discharge flow rate into the impoundment can vary between 5 and 55 gallons per minute over approximately 30 minutes. The surface impoundment is not proximate to any drinking water wells (onsite potable water is sourced from Rock Creek Springs) and the nearest surface water, Baum Lake, is approximately 0.1 miles away from the impoundment.

Based on the above information, the discharge of Formalin to the surface impoundment meets land discharge specifications in Section V.C.1 of Order R5-2014-0161, which includes: (1) Neither the treatment nor the discharge shall cause a nuisance or pollution as defined by the

Dong, S. and Dasgupta, P.K. (1986). "Solubility of Gaseous Formaldehyde in Liquid Water and Generation of Trace Standard Gaseous Formaldehyde." *Environ. Sci. Technol*., 20(6), 637-640.
Howard, P.H. (1989). "Formaldehyde." Handbook of Environmental Fate and Exposure Data for Organic Chemicals, Chelsea, MI, Lewis Publishers, 342-350.
Katz, S.E. (1995). Environmental Impact Assessment for the Use of Formalin in the Control of External Parasites on Fish. Department of Biochemistry and Microbiology, Rutgers University, New Jersey Agricultural Experiment Station.
Kitchens, J.F., Casner, R.E., Edwards, G.S. Harward III, W.E., and Macri, B.J. (1976). "Investigation of Selected Potential Environmental Contaminants: Formaldehyde." U.S. Environmental Protection Agency, Office of Toxic Substances, EPA-560/2-76-009, Washington, D.C.
Lyman, W.J., Reehl, W.F., and Rosenblatt, D.H. (1982). "Adsorption Coefficient for Soils and Sediments." H*andbook of Chemical Property Estimation Methods: Environmental Behavior of Organic Compounds*. McGraw-Hill, New York.
Swann, R.L., Laskowski, D.A., McCall, P.J., Kuy, K.V., and Dishburger, H.J. (1983). "A Rapid Method for the Estimation of the Environmental Parameters Octanol/Water Partition Coefficient, Soil Sorption Constant, Water to Air Ratio, and Water Solubility." *Residue Reviews*. Springer-Verlag New York Inc., vol. 85, 17-28.
US EPA (1995). Estimation Programs Interface Suite™ for Microsoft® Windows, version 1.37. United States Environmental Protection Agency, Washington, DC, USA.

California Water Code, section 13050 and (2) the discharge shall not cause the degradation of any water supply.

AQUATIC 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 – 210,000	93,000
Eagle Lake Trout – 140,000	
Brook Trout – 140,000	
Brown Trout – 40,000	

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

Outfall 001– Flow-through hatchery wastewater, sourced from Rock Creek Springs, enters the upper/lower raceways and main hatchery building before the flow splits into two parallel unlined settling ponds. Approximately 11.6 mgd is released to Baum Lake at Outfall 001.

Outfall 002– Flow-through hatchery wastewater, sourced from Crystal Lake (a spring recharged lake), enters the broodstock raceways before discharge into an unlined settling pond. Approximately 4.2 mgd of hatchery wastewater is released to Baum Lake at Outfall 002.

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 from the Facility to Baum Lake is within the Sacramento and San Joaquin River Basins, therefore, the receiving water limits contained in the CAAP General Order for the Sacramento and San Joaquin River Basins are applicable to this discharge.

OTHER REQUIREMENTS

1. Pacific Gas and Electric Company, as owner of the property at which a surface water discharge occurs, is responsible for guaranteeing compliance with the CAAP General Order. The California Department of Fish and Wildlife, retains primary responsibility for compliance with the CAAP General Order, including day-to-day operations and monitoring. Enforcement actions will be taken against Pacific Gas and Electric Company only in an event that enforcement actions against the California Department of Fish and Wildlife are ineffective.

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 the BMP Plan requirements **by 7 July 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 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 can be subject to a mandatory minimum penalty (MMP) 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 monitoring reports 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, 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

ZHC:sjs

Enclosure and cc lists on following page

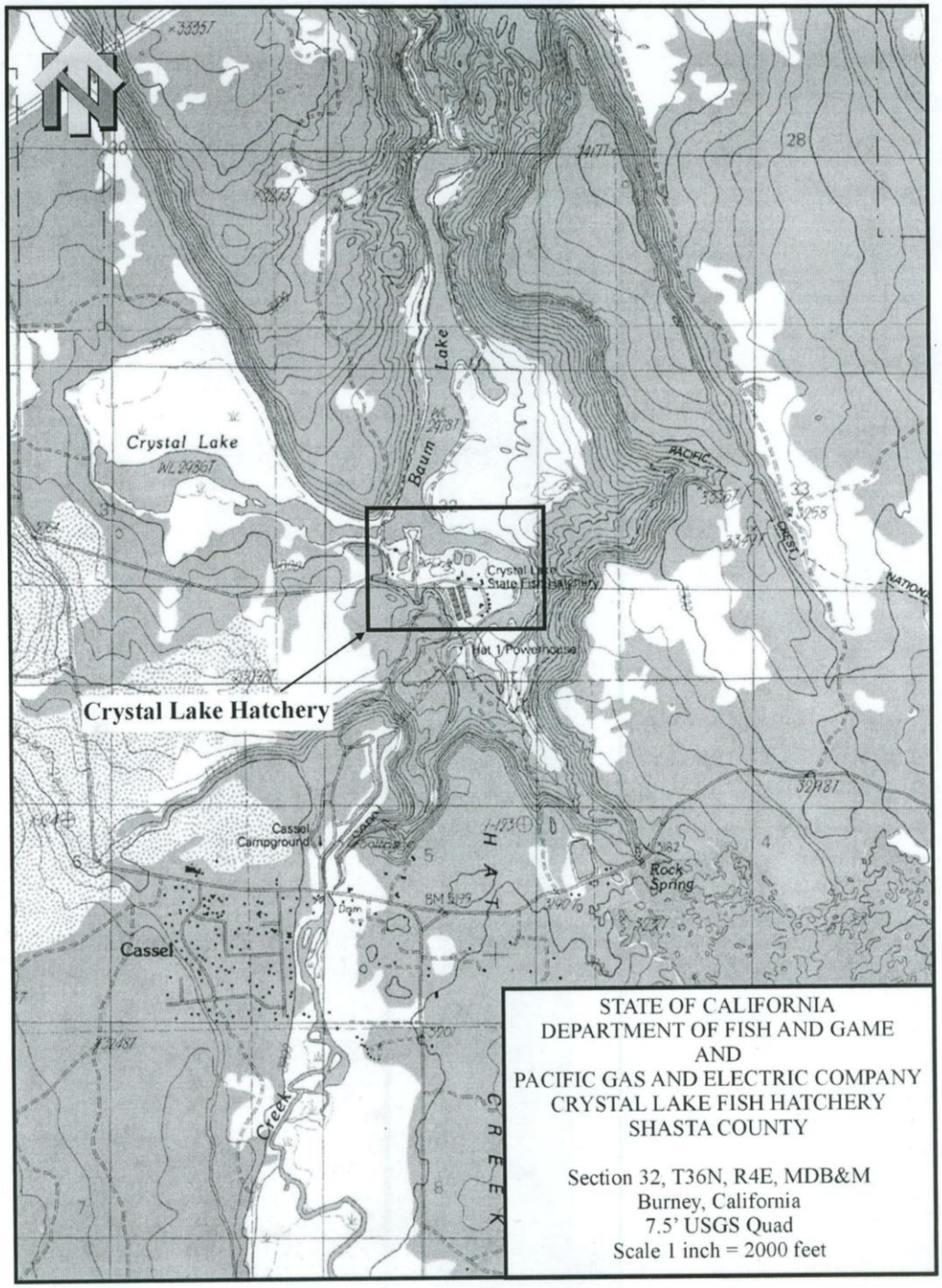
Enclosures (6):
1) Enclosure A – Administrative Information
2) Enclosure B – Location Map
3) Enclosure C – Flow Schematic
4) Enclosure D – Monitoring and Reporting Program
5) Enclosure E – Approved Aquaculture Drug and Chemical Use
6) CAAP General Order R5-2014-0161 (Discharger only)

cc via email: Shane Overton, California Department of Fish and Wildlife, Cassel
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

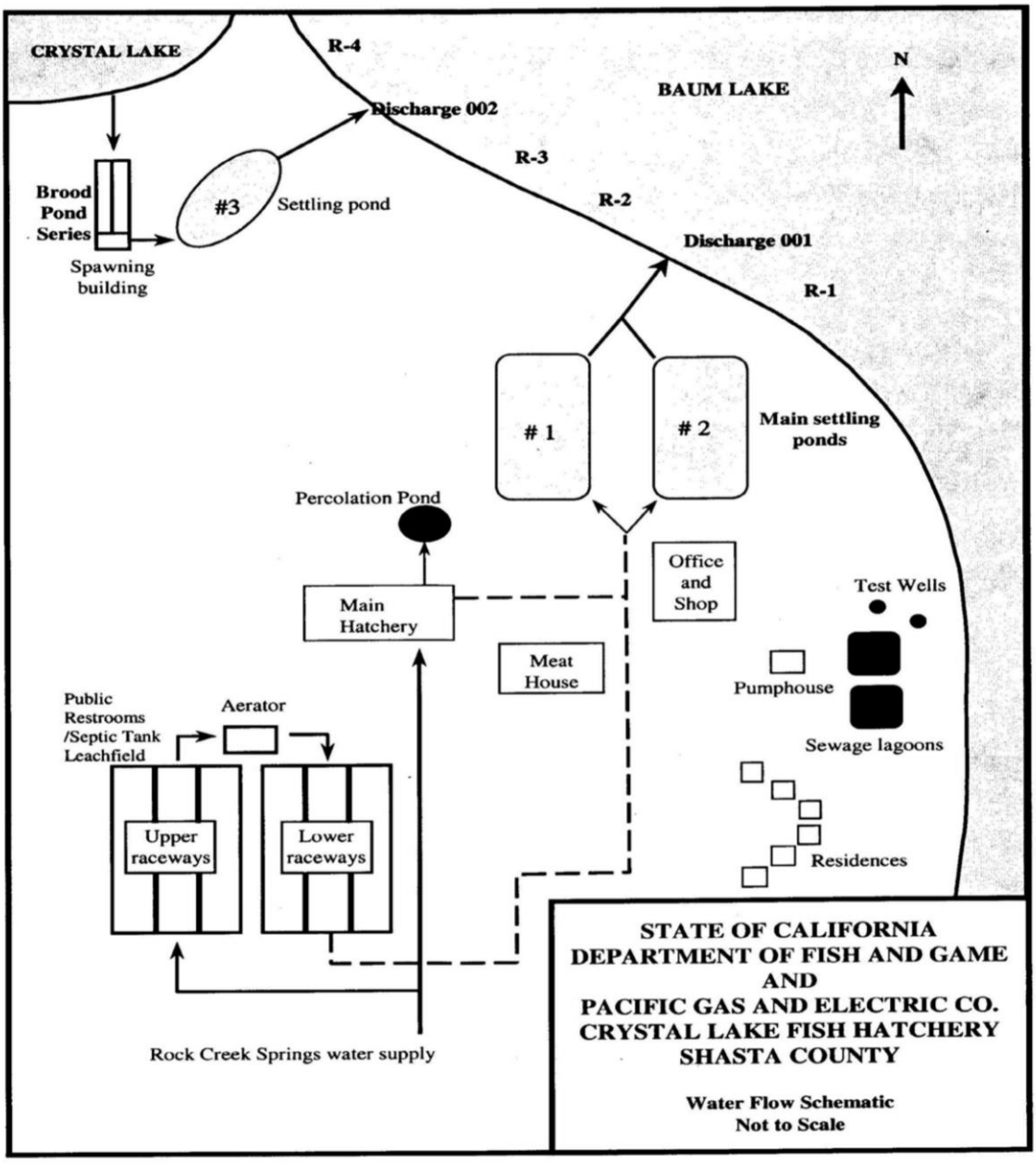
ENCLOSURE A – ADMINISTRATIVE INFORMATION

Name of Facility	Crystal Lake Fish Hatchery
Type of Facility	Cold Water Concentrated Aquatic Animal Production Facility, SIC Code 0921
WDID	5A450803001
General Order NOA Enrollee Number	R5-2014-0161-030
Discharger	California Department of Fish and Wildlife (Facility owner/operator) and Pacific Gas and Electric Company (land owner)
Facility Address	40156 Baum Lake Road Cassel, CA 96016
Land Owner (Address)	Hydroelectric Superintendent Pacific Gas and Electric Company 20818 Black Ranch Road Burney, CA 96013
Facility Contact, Title, and Phone	Shane Overton, Fish Hatchery Manager II 530-335-4111
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
Maximum Estimated Total Annual Weight of Fish Production	530,000 lbs
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Expected Maximum Total Discharge from Facility	30 cfs (or 19.4 mgd)
Watershed	Sacramento River Basin
Receiving Water	Baum Lake, a tributary to the Pit River
Receiving Water Type	Inland surface water

ENCLOSURE B – LOCATION MAP



ENCLOSURE C – FLOW SCHEMATIC



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. To the extent of the CAAP General Order, Attachment C provides conditions that the NOA specify certain requirements and Enclosure D provides such specificity. 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	Surface water diverted from Rock Creek shall be collected at a location where a representative sample can be obtained, prior to source water entering the fish rearing raceways [Approximate location: near 40°55'49.59" N latitude and 121°32'39.42" W longitude].
--	INF-002	Surface water diverted from Crystal Lake shall be collected at a location where a representative sample can be obtained, prior to source water entering the broodstock raceways [Approximate location: near 40°55'59.42" N latitude and 121°32'54.42" W longitude].
Outfall 001	EFF-001	Hatchery wastewater shall be collected and sampled after the last point of treatment and prior to hatchery wastewater entering Baum Lake through Outfall 001 [Approximate location: 40°56'0.03" N latitude and 121°32'38.99" W longitude].
Outfall 002	EFF-002	Hatchery wastewater shall be collected and sampled after the last point of treatment and prior to hatchery wastewater entering Baum Lake through Outfall 002 [Approximate location: 40°56'2.07" N latitude and 121°32'51.89" W longitude].
--	RSW-001	Upstream receiving water shall be collected approximately 100 feet southeast of Outfall 001 in Baum Lake. Samples shall be collected at least 10 feet from the shoreline [Approximate location: near 40°56'0.34" N latitude and 121°32'37.64" W longitude].
--	RSW-002	Downstream receiving water shall be collected approximately 100 feet northwest of Outfall 001 in Baum Lake. Samples shall be collected at least 10 feet from the shoreline [Approximate location: near 40°56'0.45" N latitude and 121°32'40.35" W longitude].
--	RSW-003	Downstream receiving water shall be collected approximately 100 feet northeast of Outfall 002 in Baum Lake. Samples shall be collected at least 10 feet from the shoreline [Approximate location: near 40°56'3.14" N latitude and 121°32'51.70" W longitude].

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	RSW-004	Upstream receiving water shall be collected approximately 100 feet southwest of Outfall 002 in Baum Lake. Samples shall be collected at least 10 feet from the shoreline [Approximate location: near 40°56'1.58" N latitude and 121°32'53.06" W longitude].

B. Influent Monitoring Requirements. The Discharger shall monitor influent to the Facility at monitoring locations INF-001 and/or INF-002, for the frequencies/parameters shown in Table D-2, when the Facility is in operation and there is a discharge at Outfall 001 and/or Outfall 002. 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
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. The Discharger shall monitor effluent for the frequencies/parameters shown in Table D-3, when the Facility is in operation and there is a discharge at Outfall 001 and/or Outfall 002. 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/month	--
Total Suspended Solids (TSS)	mg/L	Grab	1/month	[2]
Net TSS (effluent minus influent)	mg/L	Net Calculation	1/month	--

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
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[5,7]	[2]
Chlorine	mg/L	Grab	1/quarter during chlorine use[6,7]	[2]

[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. Receiving water samples shall be collected from monitoring locations RSW-001 and RSW-002 and/or RSW-003 and RSW-004, for the frequencies/parameters shown in Table D-4, when the Facility is in operation and there is a discharge at Outfall 001 and/or Outfall 002. 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 $CaCO_3$) 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. Sewage Lagoon Monitoring Requirements. Sewage lagoon freeboard and dissolved oxygen shall be monitored weekly. Groundwater monitoring for total and fecal coliform shall be conducted when depth to groundwater is less than 5 feet as measured from the bottom of the sewage lagoon.

F. 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.

G. 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.

H. 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.

I. 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 and EFF-002) and the upstream receiving water (RSW-001 and RSW-004) 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 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 above 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
Potassium Permanganate	8-12 oz (4-5 times per month)	Flush	2 ppm
Hydrogen Peroxide (35% Solution)	8 gal/cfs (as needed)	Flush	100 ppm
Povidone-Iodine (PVP-I) (Argentyne)	4.5 oz per 10 gal of water (when eggs are received)	Bath	100 ppm
Sodium Chloride	200 lbs (6-7 times per month)	Flush	382 ppm
Formalin at 37% active Formaldehyde	(15-18 times per year)	Flush	Zero (discharged to land)
Tricaine Methanesulfonate (MS-222)	Varies (4-5 times per month)	Bath	80-135 ppm
Penicillin G	32 grams per trough (3-6 times per year)	Bath	100 International Units per mL
Terramycin (Oxytetracycline)	3.75 grams per 100 lbs of fish (2-3 times per year)	Feed Additive or Bath	100 ppm
Florfenicol	50-300 grams (2-3 times per year)	Feed Additive	Unknown
Emamectin Benzoate 0.2% Aquaculture Premix (SLICE)	5.5 grams (as prescribed by a veterinarian)	Feed Additive	Unknown
Calcium Hypochlorite	2 oz per 100 gal of water (2-3 times per month)	Bath/Flush	20 ppm
Chloramine-T	10-20 mg/L (as prescribed by veterinarian)	Flush	15 ppm
Vibrio and Enteric Redmouth Bacterin	1 L per 200 lbs of fish (once per year)	Bath	0 (discharged to pavement)