

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LAHONTAN
REGION**

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**ORDER NO. R6V-2021-0014
NPDES NO. CA0102776
WDID NO. 6B260801001**

**WASTE DISCHARGE REQUIREMENTS AND
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
FOR THE
CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
HOT CREEK FISH HATCHERY**

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

Table 1. Discharger Information

Discharger	California Department of Fish and Wildlife
Name of Facility	Hot Creek Fish Hatchery
Facility Address	121 Hot Creek Hatchery Road Mammoth Lakes, CA 93546 Mono County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Wastewater from Production Raceway	37°, 38', 31.4" N	118°, 51', 14.3" W	Hot Creek
002	Wastewater from Production Raceway	37°, 38', 31.5" N	118°, 51', 11.5" W	Hot Creek
003	Wastewater from Hatchery 1, Hatchery 1 brood ponds, and Hatchery 1 spawning house	37°, 38', 31.3" N	118°, 51', 9.8" W	Hot Creek
004	Wastewater from Hatchery 2, Hatchery 2 brood ponds, and Hatchery 2 spawning house	37°, 38', 36" N	118°, 50', 48" W	Tributary to Hot Creek

Table 3. Administrative Information

This Order was adopted on:	<Adoption Date>
This Order shall become effective on:	<Effective Date>
This Order shall expire on:	<Expiration Date>
The Discharger shall file a Report of Waste Discharge (ROWD) as an application for reissuance of a WDR in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) Permit no later than:	180 days prior to the Order expiration date
The U.S. Environmental Protection Agency (USEPA) and the California Regional Water Quality Control Board, Lahontan Region have classified this discharge as follows:	Minor discharge

I, Michael R. Plaziak, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on the date indicated above.



 Michael R. Plaziak, Executive Officer

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I. FACILITY INFORMATION

Information describing the Hot Creek Fish Hatchery (Facility) is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

II. FINDINGS

The California Regional Water Quality Control Board, Lahontan Region (Lahontan Water Board), finds:

- A. Legal Authorities.** This Order serves as a Waste Discharge Requirement (WDR) pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a WDR authorizing the Discharger to discharge to land and waters of the state and as an NPDES permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDR in this Order.
- B. Background and Rationale for Requirements.** The Lahontan Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E and G through K are also incorporated into this Order.
- C. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsection V.B are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- D. California Environmental Quality Act.** This action to adopt an NPDES permit is statutorily exempt from the provisions of the California Environmental Quality Act (CEQA, Public Resources Code sections 21000, et seq.), pursuant to section 13389 of the Water Code. This action also involves the re-issuance of a WDR for an existing facility with a discharge to the groundwater of the Long Ground Water Basin and, as such, is exempt from CEQA as an existing facility for which no expansion of its existing use is being permitted pursuant to title 14, California Code of Regulations, section 15301.
- E. Notification of Interested Parties.** The Lahontan Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe a WDR for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.
- F. Consideration of Public Comment.** The Lahontan Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of

the public meeting are provided in the Fact Sheet.

- G. The Right to Access to Clean Water.** Water Code section 106.3 states in part “...every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.” This Order does not authorize the degradation of groundwater and requires monitoring for potential degradation of water quality.

THEREFORE, IT IS HEREBY ORDERED that Order No. R6V-2006-0027 is rescinded upon the effective date of this Order except for enforcement purposes, and, to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Lahontan Water Board from taking enforcement action for past violations of the previous Order.

III. DISCHARGE PROHIBITIONS

In accordance with the Region-wide and Unit/Area-Specific Prohibitions in section 4.1 of the Water Quality Control Plan for the Lahontan Region (Basin Plan), unless a specific exemption is granted in writing by the Lahontan Water Board:

A. General Requirements and Prohibitions

1. The discharge of waste¹ that causes violation of any narrative or numeric water quality objective contained in the Basin Plan is prohibited.
2. Where any numeric or narrative water quality objective contained in the Basin Plan is already being violated, the discharge of waste that causes further degradation or pollution is prohibited.
3. The discharge of waste that could affect the quality of waters of the state that is not authorized by the State Water Resources Control Board (State Water Board) or Lahontan Water Board through waste discharge requirements, waiver of waste discharge requirements, NPDES permit, cease and desist order, certification of water quality compliance pursuant to CWA section 401, or other appropriate regulatory mechanism is prohibited.
4. The discharge of untreated sewage, garbage, or other solid wastes into surface waters of the Region is prohibited.
5. The discharge of pesticides to surface or ground waters is prohibited.
6. The discharge of hatchery wastewater (discharge), except to the authorized discharge points (Discharge Points 001, 002, 003, and 004), is prohibited.
7. There shall be no discharge, bypass, or diversion from the transport or treatment facilities to surface waters except as in compliance with Standard Provisions for bypass (Attachment D).

¹ "Waste" is defined to include any waste or deleterious material including, but not limited to, waste earthen materials (such as soil, silt, sand, clay, rock, or other organic or mineral material) and any other waste as defined in Water Code section 13050 subdivision (d).

8. The discharge shall not cause pollution as defined in Section 13050 of the Water Code, or a threatened pollution.
9. Neither the treatment nor the discharge shall cause a nuisance as defined in Section 13050 of the Water Code.
10. The discharge shall not cause a violation of any applicable water quality standards for receiving water adopted by the Lahontan Water Board or the State Water Board.
 - a. The discharge of any therapeutic or pharmaceutical aquaculture drug or chemical resulting in toxicity in receiving waters is prohibited.
 - b. The discharge or threatened discharge of any aquaculture drug or chemical not authorized for discharge in section VI.C.2.a of this Order to waters of the United States or waters of the State is prohibited.
 - c. The application of hydrogen peroxide shall be limited to one raceway at a time per treatment period, for raceways as defined in Attachment A.
 - d. The application of more than one aquaculture drug or chemical to the raceways or incubation building per treatment period (as defined in Attachment A) is prohibited.
11. The discharge of hazardous or toxic substances including cleaning chemicals, solvents, oil, grease, or other petroleum products, is prohibited.
12. The discharge of accumulated sludge, grit, and solid residues to surface waters is prohibited.
13. The use of any aquaculture drug or chemical that may be potentially discharged to waters of the United States or of the State and not authorized for discharge in Section VI.C.2.a of this Order is prohibited. Modifications to the authorized use and disposal of aquaculture drugs and chemicals at the Facility may be allowed by the Lahontan Water Board as specified in Section VI.C.2.a of this Order.

B. Storm Water Runoff and Storm Water Collection Systems Prohibitions and Requirements

1. This Order does not supersede any obligation to obtain and maintain coverage under the General Order for Discharges of Storm Water Associated with Construction Activity (Construction General Order) or any other permit when such permits are applicable.
2. The State Water Board's Water Quality Order 2014-0057-DWQ, General Order for Storm Water Discharges Associated with Industrial Activities (NPDES General Order No. CAS000001) (Industrial General Order) does not regulate storm water discharges from CAAP facilities/fish hatcheries. Nevertheless, the Lahontan Water Board finds that industrial wastes in storm water runoff from CAAP facilities/fish hatcheries may impact water quality. Therefore, this Order includes substantive requirements applicable to the Industrial General Order.
3. Unless otherwise authorized by a separate NPDES permit or WDR, or specifically authorized by this WDR, discharges of material other than storm

water to a separate storm sewer system, or waters of the United States are prohibited. Prohibited non-storm water discharges to waters of the United States must be permitted by a separate NPDES permit.

4. Non-Storm Water Discharges

- a. The following non-storm water discharges are authorized by this Order provided that they satisfy the conditions specified in Paragraph b., below: fire hydrant flushing; potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems; drinking fountain water; atmospheric condensates including refrigeration, air conditioning, and compressor condensate; irrigation drainage; landscape watering; springs; groundwater; foundation or footing drainage.
- b. The non-storm water discharges as identified in Paragraph a., above, are authorized by this Order if all the following conditions are met:
 - i. The non-storm water discharges are in compliance with these waste discharge requirements.
 - ii. Best Management Practices (BMPs) are specifically included in a Storm Water Pollution Prevention Plan (SWPPP) to (1) prevent or reduce the contact of non-storm water discharges with materials or equipment which may contribute contaminants to the discharge and (2) minimize, to the extent practicable, the flow or volume of non-storm water discharges.
 - iii. The monitoring program includes quarterly visual observations of each non-storm water discharge and its sources to ensure that BMPs are being implemented and are effective.
 - iv. The non-storm water discharges are reported and described in the subsequent quarterly report and are summarized in the annual report.

5. Visual Observations

The Discharger must perform quarterly, visual, non-storm water inspections of the Facility, as described in Attachment E, to ensure that BMPs are being implemented and are effective.

- a. Unless specifically granted in writing, authorization pursuant to this Order does not constitute an exemption to applicable discharge prohibitions in the Basin Plan.
- b. Unless authorized by a separate NPDES Permit or WDR, storage and use of materials not designated for outdoor use must be protected from exposure to storm water.
- c. Liquids and solutes that may spill, leak, or leach from materials and or equipment used in the Facility must be protected from exposure to storm water.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Points 001, 002, 003, and 004

1. Final Effluent Limitations – Discharge Points 001, 002, 003, and 004

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Points 001, 002, 003, and 004 with compliance measured as described in the Monitoring and Reporting Program (Attachment E):

Table 4. Final Effluent Limitations

Parameter	Units	Average Monthly	Maximum Daily	Annual Average	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Total Suspended Solids (TSS)	mg/L	Footnote 1	--	--	--	Footnote 1
Non-Conventional Pollutants						
Nitrogen, Total (as N)	mg/L	--	--	0.30 ²	--	--
Formaldehyde	mg/L	0.65	1.3	--	--	--
Potassium Permanganate	mg/L	0.098	0.197	--	--	--
Settleable Solids	ml/L	0.1	--	--	--	--

¹ Effluent Limit = Influent Concentration + 6.0 mg/L net over influent concentration, for each matching influent point and discharge point. Report compliance with respect to the limit by providing both the influent concentration and the discharge concentration for each discharge point.

² Arithmetic mean of all data collected in a calendar year.

b. **pH.** The pH of discharges to Discharge Points 001, 002, 003, and 004, with compliance measured at Monitoring Locations EFF-001, EFF-002, EFF-003, and EFF-004 as described in the Monitoring and Reporting Program (Attachment E), shall not be depressed below 6.5 standard units nor raised above 8.5 standard units. However, when the pH of an influent spring exceeds 8.5 standard units, the pH of the effluent at the corresponding discharge location shall not exceed the pH of the influent spring by more than 0.5 standard units. When the pH of an influent spring is less than 6.5 standard units, then the pH of the effluent at the corresponding discharge location shall not be less than the pH of the influent spring by more than 0.5 standard units.

2. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. Compliance with numeric receiving water limitations shall be measured at Monitoring Locations RSW-001 and RSW-002. The discharge shall not cause the following in Hot Creek:

A. Surface Water Limitations

1. This Discharger shall not cause a violation of any applicable water quality standard for receiving water adopted by the Lahontan Water Board or the State Water Board as required by the federal Water Pollution Control Act and regulations adopted thereunder.
2. **Water Quality Objectives Which Apply to All Surface Waters:** these narrative and numerical water quality objectives apply to all surface waters (including wetlands) within the Lahontan Region and can be found in Chapter 3 of the Basin Plan and in *Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Bacteria Provisions and a Water Quality Standards Variance Policy* (Statewide Bacteria Provisions). The discharge to surface waters of flows generated within, or as a result of, the Facility shall not cause a violation of the following water quality objectives for the surface waters of the Owens Hydrologic Unit:
 - a. **Ammonia.** The neutral, unionized ammonia species (NH_3) is highly toxic to freshwater fish. The fraction of toxic NH_3 to total ammonia species ($\text{NH}_4^+ + \text{NH}_3$) is a function of temperature and pH. Ammonia concentrations shall not exceed the values listed for the corresponding conditions in Tables 3-1 and 3-3 of the Basin Plan. For temperature and pH values not explicitly in the tables, the most conservative value neighboring the actual value may be used or criteria can be calculated from numerical formulas developed by the USEPA.
 - b. **Bacteria, Coliform.** Waters shall not contain concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock wastes. The fecal coliform concentration during any 30-day period shall not exceed a log mean of 20 MPN/100 mL, nor shall more than 10 percent of all samples collected during any 30-day period exceed 40 MPN/100 mL. The USEPA recommends that the log mean should ideally be based on a minimum of not less than five samples collected as evenly spaced as practicable during any 30-day period. [Reference: Ambient Water Quality Criteria for Bacteria - 1986, EPA 440/5-84-002, page 2.] However, a log mean concentration exceeding 20 MPN/100 mL for any 30-day period shall indicate violation of this objective even if fewer than five samples were collected.
 - c. **Biostimulatory Substances.** Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect the water for beneficial uses.
 - d. **Chemical Constituents.** Waters shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.

The receiving waters have been designated as municipal and domestic supply (MUN) and shall not contain concentrations of chemical constituents in excess of the maximum contaminant level (MCL) or secondary maximum

contaminant level (SMCL) established for drinking water and specified in Title 22 of the California Code of Regulations, which are incorporated by reference into this Order: Table 64431-A (MCLs for Inorganic Chemicals), Table 64444-A (MCLs for Organic Chemicals), Table 64431-B (Fluoride), Table 64449-A (SMCLs, Consumer Acceptance Contaminant Levels), and Table 64449-B (SMCLs, Consumer Acceptance Contaminant Level Ranges). This incorporation-by-reference is prospective including future changes to the incorporated provisions as changes take effect.

The receiving waters have been designated as agricultural supply (AGR) and shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes).

- e. **Chlorine, Total Residual.** For the protection of aquatic life, total chlorine residual shall not exceed either a median value of 0.002 mg/L or a maximum value of 0.003 mg/L in the receiving water. Median values shall be based on daily measurements taken within any six-month period.
- f. **Color.** Waters shall be free of coloration that causes nuisance or adversely affects the water for beneficial uses.
- g. **Dissolved Oxygen.** The dissolved oxygen concentration, as percent saturation, shall not be depressed by more than 10 percent, nor shall the minimum dissolved oxygen concentration be less than 80 percent of saturation. For waters with the beneficial uses of COLD, COLD with SPWN, WARM, and WARM with SPWN, the minimum dissolved oxygen concentration shall not be less than that specified in Table 3-6 of the Basin Plan.
- h. **Floating Materials.** Waters shall not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect the water for beneficial uses. For natural high quality waters, the concentrations of floating material shall not be altered to the extent that such alterations are discernible at the 10 percent significance level.
- i. **Nondegradation of Aquatic Communities and Populations.** All wetlands shall be free of substances attributable to wastewater or other discharges that produce adverse physiological responses in humans, animals, or plants; or that lead to the presence of undesirable or nuisance aquatic life. All wetlands shall be free from activities that would substantially impair the biological community as it naturally occurs due to physical, chemical, and hydrologic processes.
- j. **Oil and Grease.** Waters shall not contain oils, greases, waxes or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect the water for beneficial uses. For natural high quality waters, the concentration of oils, greases, or other film or coat generating substances shall not be altered.

- k. **pH.** In fresh waters with designated beneficial uses of COLD or WARM, changes in normal ambient pH levels shall not exceed 0.5 pH units. In all other waters of the Region, the pH shall not be depressed below 6.5 nor raised above 8.5. The Lahontan Water Board recognizes that some waters of the Region may have natural pH levels outside of the 6.5 to 8.5 range. Compliance with the pH objective for these waters will be determined on a case-by-case basis.
- l. **Radioactivity.** Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life. Waters designated as MUN shall not contain concentrations of radionuclides in excess of the limits specified in Section 64443 (Radioactivity) of Title 22 of the California Code of Regulations, which is incorporated by reference into this Order. This incorporation-by-reference is prospective including future changes to the incorporated provisions as changes take effect.
- m. **Sediment.** The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect the water for beneficial uses.
- n. **Settleable Materials.** Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or that adversely affects the water for beneficial uses. For natural high quality waters, the concentration of settleable materials shall not be raised by more than 0.1 ml/L.
- o. **Suspended Material.** Waters shall not contain suspended materials in concentrations that cause nuisance or that adversely affect the water for beneficial uses. For natural high quality waters, the concentration of total suspended materials shall not be altered to the extent that such alterations are discernible at the 10 percent significance level.
- p. **Taste and Odor.** Waters shall not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish or other edible products of aquatic origin, that cause nuisance, or that adversely affect the water for beneficial uses. For naturally high quality waters, the taste and odor shall not be altered.
- q. **Temperature.** The natural receiving water temperature of all waters shall not be altered unless it can be demonstrated to the satisfaction of the Lahontan Water Board that such an alteration in temperature does not adversely affect the water for beneficial uses. For waters designated WARM, water temperature shall not be altered by more than 5 degrees Fahrenheit (5°F) above or below the natural temperature. For waters designated COLD, the temperature shall not be altered.
- r. **Toxicity.** All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological

responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms; analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration and/or other appropriate methods as specified by the Lahontan Water Board.

The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or when necessary, for other control water that is consistent with the requirements for "experimental water" as defined in *Standard Methods for the Examination of Water and Wastewater* (American Public Health Association, et al. 2012 or subsequent editions).

- s. **Turbidity.** Waters shall be free of changes in turbidity that cause nuisance or adversely affect the water for beneficial uses. Increases in turbidity shall not exceed natural levels by more than 10 percent.
- t. **Specific Numeric Receiving Water Limitations.** Surface receiving water limitations for Hot Creek (at County Road) in Table 6 are based on Table 3-17 (page 3-46) of the Basin Plan. Discharges from the Facility shall not cause or contribute to exceedances of the following limitations:

Table 5. Surface Water Limitations

Constituent	Limit as an Annual Average, mg/L	Limit as the 90th Percentile, mg/L
Total Dissolved Solids (TDS)	275	380
Chloride	41	60
Sulfate	24	35
Fluoride	1.8	2.8
Boron	1.8	2.6
Nitrate (NO ₃) as Nitrogen	0.2	0.4
Total Nitrogen	0.3	1.5
Orthophosphate, Dissolved	0.65	1.22

B. Groundwater Limitations

- 1. The ground water limitations in this Order are based upon the water quality objectives contained in the Basin Plan (pages 3-13 and 3-14) and are a required part of this Order. Water quality objectives that apply to the Long Valley Ground Water Basin include the following:
 - a. **Bacteria, Coliform.** In ground waters designated as MUN, the median concentration of coliform organisms over any 7-day period shall be less than 1.1 MPN/100 mL.
 - b. **Chemical Constituents**
 - i. Groundwaters designated as MUN shall not contain concentrations of chemical constituents in excess of the MCL or SMCL based upon drinking water standards specified in the following provisions of Title 22

of the California Code of Regulations, which are incorporated by reference into this Order: Table 64431-A (Inorganic Chemicals), Table 64431-B (Fluoride), Table 64444-A (Organic Chemicals), Table 64449-A (SMCLs- Consumer Acceptance Limits), and Table 64449-B (SMCLs-Ranges). This incorporation-by-reference is prospective including future changes to the incorporated provisions as changes take effect.

- ii. Groundwaters designated as AGR shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes).
- iii. Groundwaters shall not contain concentrations of chemical constituents that adversely affect the water for beneficial uses.
- c. **Radioactivity.** Groundwaters designated as MUN shall not contain concentrations of radionuclides in excess of the limits specified in Table 4 of Section 64443 (Radioactivity) of Title 22 of the California Code of Regulations, which is incorporated by reference into this Order. This incorporation-by-reference is prospective including future changes to the incorporated provisions as changes take effect.
- d. **Taste or Odor.** Groundwaters shall not contain taste or odor-producing substances in concentrations that cause nuisance or that adversely affect beneficial uses. For groundwaters designated as MUN, at a minimum, concentrations shall not exceed adopted SMCLs specified in Table 64449-A (SMCLs- Consumer Acceptance Limits), and Table 64449-B (SMCLs-Ranges) of Title 22 of the California Code of Regulations, which is incorporated by reference into this Order. This incorporation-by-reference is prospective including future changes to the incorporated provisions as changes take effect.

VI. PROVISIONS

A. Standard Provisions

- 1. The Discharger must comply with all Standard Provisions included in Attachment D.
- 2. The Discharger must comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:
 - a. Surface waters as used in this Order include, but are not limited to, wetlands and live streams, either perennial or ephemeral, which flow in natural or artificial watercourses, and natural lakes and artificial impoundments of waters within the State of California.
 - b. Groundwaters as used in this Order include, but are not limited to, all subsurface waters being above atmospheric pressure, and the capillary fringe of these waters.
 - c. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the Discharger from

liabilities under federal, state, or local laws, nor guarantee the Discharger a capacity right in the receiving waters.

- d. All discharges authorized by this Order shall be consistent with the terms and conditions of this Order. The discharge of any pollutant more frequently than, or at a level in excess of, that identified and authorized by this Order shall constitute a violation of the terms and conditions of this Order.
- e. Pursuant to Water Code section 13263, subdivision (g), no discharge of waste into the waters of the state, whether or not the discharge is made pursuant to waste discharge requirements, shall create a vested right to continue the discharge. All discharges of waste into waters of the state are privileges, not rights.
- f. Failure to comply with this Order may constitute a violation of the Water Code and/or the CWA and is grounds for enforcement action or for permit termination, revocation and re-issuance, or modification.
- g. The Discharger must take all reasonable steps to minimize or prevent any discharge in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment.
- h. The Water Code and the CWA provide for civil liability and criminal penalties for violations of the Order limits including imposition of civil liability or referral to the Attorney General.
- i. A copy of the NPDES permit must be kept at the Facility and be available at all times to operating personnel.
- j. Provisions of the Order are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.
- k. In the event the Discharger is unable to comply with any of the conditions of this Order due to:
 - i. breakdown or serious malfunction of water treatment equipment;
 - ii. accidents caused by human error or negligence;
 - iii. overflows from the system; or
 - iv. other causes such as acts of nature,

the Discharger must notify the Lahontan Water Board Executive Officer as soon as the Discharger or the Discharger's agents have knowledge of any discharge in violation of this Order, or any emergency discharge or other discharge of water to the receiving water, in accordance with the notification requirements in the Standard Provisions for NPDES Permits, included in this Order as Attachment D, and with Water Code sections 13267 and 13383.

- l. Pursuant to Water Code section 13267, subdivision (b), the Discharger must notify the Lahontan Water Board of any substantial change in the volume or character of pollutants introduced into the Facility from the conditions existing at the time of adoption of this NPDES Permit.

- m. Adequate notice must include information on the quality and quantity of effluent discharged into the receiving waters for the Facility, as well as any anticipated impact of the change on the quantity or quality of the effluent to be discharged from the Facility. A substantial change in volume is considered an increase in excess of ten percent of the mean daily flow rate. The Discharger must forward a copy of such notice directly to the USEPA Regional Administrator.
- n. The Discharger must file a ROWD with the Lahontan Water Board at least 180 days before making any material change or proposed change in the character, location, or volume of the discharge.
- o. Pursuant to Water Code section 13260, subdivision (c), any change in the ownership and/or operation of property subject to the NPDES Permit must be reported to the Lahontan Water Board within 10 days of the change. Notification of applicable NPDES Permit requirements shall be furnished in writing to the new owners and/or operators, and a copy of such notification shall be sent to the Lahontan Water Board within 10 days of the change.
- p. If a Discharger becomes aware that any information submitted to the Lahontan Water Board is incorrect, the Discharger must immediately notify the Lahontan Water Board, in writing, and correct that information.
- q. If the Discharger becomes aware that its NPDES Permit is no longer needed (because the discharge will cease), the Discharger must notify the Lahontan Water Board in writing within 10 days and request that the Order be rescinded.
- r. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.
- s. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, maximum daily effluent limitation, average monthly effluent limitation, or receiving water limitation of this Order, the Discharger must notify the Lahontan Water Board by telephone [(530) 542-5400] within 24 hours of having knowledge of such noncompliance, and must confirm this notification in writing within seven (7) days, unless the Lahontan Water Board waives confirmation. The written notification must 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 on the date of the next normal monitoring report to be provided as required by this Order.

B. Monitoring and Reporting Program Requirements

The Discharger must comply with the Monitoring and Reporting Program (MRP) in Attachment E and future revisions thereto, as specified by the Executive Officer.

C. Special Provisions

1. Reopener Provisions

- a.** If more stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the Federal Water Pollution Control Act or amendments thereto, the Lahontan Water Board may reopen and modify this Order in accordance with such more stringent standards.
- b.** The Lahontan Water Board may reopen this Order to establish new conditions or effluent limitations should monitoring data, toxicity testing data, or other new information indicate that a constituent is discharged at a level that will do any of the following:
 - i.** cause, have reasonable potential to cause, or contribute to an in-stream excursion above any water quality criteria or objective, or
 - ii.** cause, have reasonable potential to cause, or contribute to a violation of any narrative water quality objective contained in the Basin Plan.
- c. Effluent Limitations Based on New Information.** If toxicity testing, or information specified below in Section VI.C.2.a of this Order, or the drug and chemical use reporting required in the Monitoring and Reporting Program (Attachment E) indicates that any drug or chemical is, or may be, discharged at a level that will cause, have the reasonable potential to cause, or contribute to an in-stream excursion above any chemical-specific water quality criteria or objective, narrative water quality objective for chemical constituents from the Basin Plan, or narrative water quality objective for toxicity from the Basin Plan, this Order may be reopened to establish effluent limitations.
- d. Toxicity Test Exposure Times.** Toxicity testing requirements, as specified in Section VI.C.2.a of this Order, are based on exposure times of 48 or 96 hours. If the Discharger provides sufficient justification that shorter exposure times are a closer approximation of actual exposure times, then this Order may be reopened to account for shorter exposure times.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Chemical and Aquaculture Drug Use

Attachment G of this Order lists all aquaculture drugs and chemicals that may potentially be used at the Facility, as well as expected application methods and dosages. This Order authorizes the use of acetic acid, amoxicillin trihydrate, carbon dioxide, Chloramine-T, Chorulon®, Epsom salt, erythromycin, enteric redmouth vaccine, florfenicol, formalin, hydrogen peroxide, ivermectin, MS-222, Ovaplant®, oxytetracycline dihydrate, oxytetracycline hydrochloride, penicillin G potassium, potassium permanganate, PVP Iodine, SLICE, sodium bicarbonate, sodium chloride, Romet-30®, and Vibrio vaccine in accordance with label directions, effluent

limitations, BMP Plan requirements, monitoring and reporting requirements, and other conditions of this Order.

Other aquaculture chemicals or drugs that may be used at the Facility can only be authorized if the Discharger notifies the Lahontan Water Board in writing of the intent to use a new drug or chemical. The notification shall contain the following supplemental information:

- i. The common name(s) and active ingredient(s) of the drug or chemical proposed for use and discharge.
- ii. The purpose for the proposed use of the drug or chemical (i.e., list the specific disease for treatment and specific species for treatment).
- iii. The amount proposed for use or disposal, and the resulting calculated estimate of concentration in the discharge. Calculations used to derive estimated concentrations must also be submitted.
- iv. The location, duration, and frequency of the proposed use or disposal.
- v. Safety Data Sheets and available toxicity information.
- vi. Any related Investigational New Animal Drug (INAD), New Animal Drug Application (NADA) information, extra-label use requirements and/or veterinarian prescriptions.
- vii. The Discharger shall also submit acute toxicity test information on any new chemical or drug applied in solution for immersive treatment (i.e., immersion bath, "drip" treatment, flush treatment) in accordance with methods specified in the USEPA *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002* (EPA-821-R-02-012) using *Ceriodaphnia dubia* (*C. dubia*) to determine the No Observed Adverse Effect Level (NOAEL) and Lowest Observed Adverse Effect Level (LOAEL).

Where exposure of aquatic life to any aquaculture drug or chemical may be long-term or continuous, the Discharger also shall conduct and/or submit the results of chronic toxicity testing in accordance with the USEPA *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, October 2002* (EPA-821-R-02-013), using *C. dubia*, to determine the No Observed Effect Concentration (NOEC) or Inhibition Concentration (IC₂₅).

The Discharger shall not use other aquaculture drugs or chemicals until notified in writing by the Lahontan Water Board that the notification requirements specified in this provision have been satisfied and the request for a proposed chemical use has been approved. The Lahontan Water Board may reopen this Order to establish appropriate waste discharge requirements for new proposed chemical uses after notice to the Discharger and the public, as may be required.

b. Reporting of Unanticipated Discharges

- i. The Discharger must provide to the Lahontan Water Board an oral report within 24 hours of discovery of the failure in, or damage to, a settling pond (effluent treatment system) or an aquatic animal containment system resulting in an unanticipated material discharge of pollutants to waters of the United States or state. The Discharger must describe the cause of the failure or damage to the containment system and identify materials that have been released to the environment as a result of this failure/damage.
- ii. The Discharger must provide a written report within seven (7) days of discovery of the failure or damage, documenting the cause, the estimated time that elapsed before the failure or damage was repaired, an estimate of the material released as a result of the failure or damage, and steps being taken to prevent a reoccurrence.
- iii. In the event of a spill of drugs, chemicals, pesticides, or feed that results in a discharge to waters of the United States or state, the Discharger must provide an oral report of the spill to the Lahontan Water Board within 24 hours of discovery of its occurrence and a written report within seven (7) days. The report shall include the identity and quantity of the material spilled.

3. Best Management Practices and Pollution Prevention

a. Best Management Practices (BMP) Plan – Aquaculture Operations

The Discharger must certify in writing to the Lahontan Water Board no later than **December 1, 2021** that the BMP Plan has been updated to include the requirements specified in this Order and is being implemented as required by 40 Code of Federal Regulations (C.F.R.) section 451.3(d). The existing BMP Plan, dated May 10, 2012, may be modified for use under this section. The Discharger must develop and implement the BMP Plan to prevent or minimize the generation and discharge of wastes and pollutants to waters of the State and the United States and ensure disposal or land application of wastes is conducted in a manner in compliance at all times with Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in California Code of Regulations, title 27, division 2, subdivision 1, section 20005, et seq. The Discharger shall consider the recommendations provided in USEPA's March 2006 *Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category* (EPA-821-B-05-001) when updating the BMP Plan. The Discharger shall review and certify in writing to the Lahontan Water Board the BMP Plan annually (by **February 1** of each year) and must amend the BMP Plan whenever there is a change in the Facility or in the operation of the Facility which materially increases the generation of pollutants or their release or potential release to surface waters.

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

i. Solids Management

- (a) Conduct fish feeding in a manner that limits feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth and minimizes the discharge of unconsumed food and waste products to surface waters.
- (b) Clean aquaculture raceways and settling pond using procedures and at frequencies that minimize the disturbance and subsequent discharge of accumulated solids during routine activities such as inventorying, grading, and harvesting.
- (c) Report the final disposition of all other solids and liquids, including aquaculture drugs and chemicals, not discharged to surface waters in the effluent.
- (d) Remove and properly dispose of dead fish on a regular basis to prevent discharge to waters of the United States, except in cases where the Discharger provides information demonstrating that the discharge to surface waters benefits the aquatic environment and does not violate the provisions of this Order, and the practice is approved by the Executive Officer or Designee in writing. Procedures must be identified and implemented to collect, store, and dispose of fish and other solid wastes in an environmentally safe manner and in a manner so as to minimize discharge to waters of the United States or waters of the state.
- (e) For disposal of aquatic vegetation at a designated upland site, as historically has been done, information on the disposal location, procedures, and BMPs for the disposal location must be provided.

ii. Operations and Maintenance

- (a) Maintain the Facility to prevent bypassing of the settling ponds or the discharge of floating matter that would violate water quality objectives or cause a nuisance.
- (b) Inspect the Facility and the settling ponds on a daily basis in order to identify and promptly repair any damage.
- (c) Ensure storage and containment of drugs, chemicals, fuel, waste oil, organic wastes, pesticides/biocides/herbicides, or other materials to prevent spillage or release into the Facility, waters of the United States, or waters of the State.
- (d) Implement procedures for properly containing, cleaning, and disposing of any spilled material.
- (e) Prevent fish from being released within the U.S. Food and Drug Administration (FDA) required withdrawal time of any drug or chemical with which they have been treated.

- (f) All drugs and pesticides² must be used in accordance with applicable label directions (Federal Insecticide, Fungicide, and Rodenticide Act or FDA), except under the following conditions, both of which must be reported in advance to the Executive Officer:
 - (1) Participation in INAD studies, using established protocols; or
 - (2) Extra label drug use, as prescribed by a veterinarian.
- (g) Ensure that pesticides² stored or used on site will not spill, drift, or be transported by storm water into waters of the United States, or of the State.
- (h) Only one raceway at a time may be treated with hydrogen peroxide.

iii. Recordkeeping

- (a) Maintain records for aquatic animal rearing units documenting the feed amounts and estimates of the numbers and weight of aquatic animals in order to calculate representative feed conversion ratios using the Feed Conversion Ratios Log provided in Attachment K of this Order.
- (b) Maintain records documenting the frequency of cleaning, inspections, maintenance, repairs, spills, and spill response.
- (c) Maintain records documenting compliance with training requirements.

iv. Training

- (a) Adequately train all relevant Facility personnel in spill prevention and how to respond in the event of a spill in order to ensure the proper clean-up and disposal of spilled material.
- (b) Train staff on the proper operation and cleaning of production and wastewater treatment systems, including training in feeding procedures and proper use of equipment.
- (c) Ensure that Facility staff is familiar with the BMP Plan and have been adequately trained in the specific procedures it requires.

b. Storm Water Pollution Prevention Plan (SWPPP)

Storm water runoff and infiltration of storm water at the Facility has the potential to come in contact with pollutants directly associated with aquaculture activities and secondary activities such as, but not limited to: vehicle maintenance, transportation of fish, construction, maintenance of structures on the Facility, or outdoor storage of unused or salvaged items. Pollutants that may come in contact with storm water and discharge to waters of the State in runoff or infiltration to groundwater include, but are not limited to, chemicals, fuel, waste oil, vehicle wash water, cleaning solutions,

² This Order prohibits the discharge of pesticides to surface or groundwaters. Exemptions may be granted by the Water Board under a separate Order provided that specific exemption criteria specified in section 4.1 of the Basin Plan are satisfied.

landscaping supplies, landscaping wastes, and other stored materials with the potential for discharge to surface waters. The Discharger must develop and implement, in accordance with the requirements in Attachment I, a SWPPP that describes site-specific BMPs for minimizing contamination of storm water runoff and for preventing contaminated storm water runoff from being discharged directly to waters of the State. The SWPPP must be reviewed at least annually, in accordance with Attachment I, and updated to represent current site conditions. The SWPPP must also address the control of non-storm water discharges to the storm drainage system and the control measures needed to meet applicable prohibitions and requirements.

4. Construction, Operation and Maintenance Specifications

- a. Collected screenings, sludges, and other solids, including fish carcasses, must be disposed of in a manner approved by the Lahontan Water Board and consistent with the Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in the California Code of Regulations, title 27, division 2, subdivision 1, section 20005, et seq.
- b. All aquaculture drugs and chemicals not discharged to receiving waters in accordance with the provisions of this Order must be disposed of in an environmentally safe manner, according to label guidelines, Safety Data Sheet guidelines and the Discharger's BMP Plan (see Section VI.C.3.a of this Order). Any other form of disposal requires approval from the Lahontan Water Board. For all aquaculture drugs and chemicals not authorized for discharge to receiving waters, the disposal onto permeable ground, or in any manner or in quantities that may result in a discharge to surface water or to groundwater, is prohibited (see also Section III, Discharge Prohibitions).
- c. All facilities used for transport and treatment of hatchery wastewater must be adequately protected against either structural damage or significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.
- d. The vertical distance between the water surface elevation and the lowest point of a pond dike or the invert of an overflow structure must not be less than 1.5 feet.

5. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable

6. Other Special Provisions – Not Applicable

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in Section IV of this Order will be determined as specified below:

A. Multiple Sample Data

When determining compliance with an AMEL or MDEL and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified"

(DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

B. Limitation Bases

1. Average Monthly Effluent Limitation (AMEL)

If the average of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month. The Discharger will calculate and report the net effluent over influent concentration as necessary for total suspended solids. Additional samples, above specified minimum, may be collected to demonstrate compliance.

2. Maximum Daily Effluent Limitation (MDEL)

If a daily discharge exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that one day only within the reporting period. For any one day during which no sample is taken, no compliance determination can be made for that calendar day.

3. Instantaneous Minimum Effluent Limitation

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample, except for pH. For pH, if an influent spring's pH is equal to or less than the instantaneous minimum effluent limitation, then the effluent pH of the corresponding discharge point may not be more than 0.5 units less than the influent spring's pH for that sampling event only. For example, if the pH of INF-002 is 6.4, then the pH of EFF-002 may not be less than 5.9 for that particular sampling event.

Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken at different times within a calendar day that both are

lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation). Duplicate samples taken at the same time and location for Quality Assurance/Quality Control (QA/QC) purposes will not be subject to duplicate fines. QA/QC includes splitting a sample and/or collection of duplicate samples for analysis by a different laboratory. Reanalysis of samples after re-calibration and maintenance of field test instruments will not be subject to duplicate fines.

4. Instantaneous Maximum Effluent Limitation

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, the Discharger will be considered out of compliance for that parameter for that single sample, except for pH. For pH, if an influent spring's pH equals or exceeds the instantaneous maximum effluent limitation, then the effluent pH of the corresponding discharge point may not exceed the influent spring's pH by more than 0.5 units for that sampling event only. For example, if the pH of INF-004 is 8.6, then the pH of EFF-004 may not exceed 9.1 for that particular sampling event.

Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken different times within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation). Duplicate samples taken at the same time and location for QA/QC purposes will not be subject to duplicate fines. QA/QC includes splitting a sample and/or collection of duplicate samples for analysis by a different laboratory. Reanalysis of samples after re-calibration and maintenance of field test instruments will not be subject to duplicate fines. The Discharger will calculate and report whether the influent supply water concentration equals or exceeds the instantaneous maximum effluent limitation.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

$$\text{Arithmetic mean} = \mu = \Sigma x / n \quad \text{where: } \Sigma x \text{ is the sum of the measured ambient water concentrations, and } n \text{ is the number of samples.}$$

Aquaculture Facility

A hatchery, fish farm, or other facility that contains, grows, or holds fish for later harvest (or process) and for sale or releases.

Average Monthly Effluent Limitation (AMEL)

The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)

The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best Management Practices (BMPs)

Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, and solids or waste disposal.

Bioaccumulative

Those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic

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

Coefficient of Variation (CV)

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

Cold Water Species

Cold water aquatic animals include, but are not limited to, the *Salmonidae* family of fish, e.g., trout and salmon.

Concentrated Aquatic Animal Production (CAAP) Facility

Point Sources subject to the National Pollutant Discharge Elimination System (NPDES) Permit program including those upland facilities that discharge for at least 30 days per year and contain, grow, or hold cold water fish species or other cold water aquatic animals except facilities which produce less than 9,000 harvest weight kilograms (approximately 20,000 pounds) of aquatic animals per year and facilities which feed less than 2,285 kilograms (approximately 5,000 pounds) of food during the calendar month of maximum feeding.

Daily Discharge

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

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

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

Detected, but Not Quantified (DNQ)

DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit

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

Effluent Concentration Allowance (ECA)

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

Enclosed Bays

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not

limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration

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

Estuaries

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

Extra Label Drug Use

A drug approved under the Federal Food, Drug, and Cosmetic Act that is not used in accordance with the approved label directions (see 21 C.F.R. part 530).

Inland Surface Waters

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

Instantaneous Maximum Effluent Limitation

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

Instantaneous Minimum Effluent Limitation

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

Investigational New Animal Drug (INAD)

A drug for which there is a valid exemption in effect under section 512(j) of the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. 360(j), to conduct experiments.

Maximum Daily Effluent Limitation (MDEL)

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

Median

The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the n/2 and n/2+1).

Method Detection Limit (MDL)

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

Minimum Level (ML)

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

Mixing Zone

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

Not Detected (ND)

Sample results which are less than the laboratory's MDL.

Off-line Settling Basins

A constructed retention basin that receives wastewater from cleaning of aquaculture facility rearing/holding units, or quiescent zones, or both, for the retention and treatment of wastewater through settling of solids.

Persistent Pollutants

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

Pollutant Minimization Program (PMP)

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

implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention

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

Raceway

Raceways are typically long, rectangular chambers at or below grade, constructed of earth, concrete, plastic, or metal to which water is supplied by nearby rivers or springs.

Reporting Level (RL)

The RL is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Lahontan Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Source of Drinking Water

Any water designated as municipal or domestic supply (MUN) in a Lahontan Water Board Basin Plan.

Standard Deviation (σ)

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

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

x is the observed value;

μ is the arithmetic mean of the observed values; and

n is the number of samples.

Toxicity Reduction Evaluation (TRE)

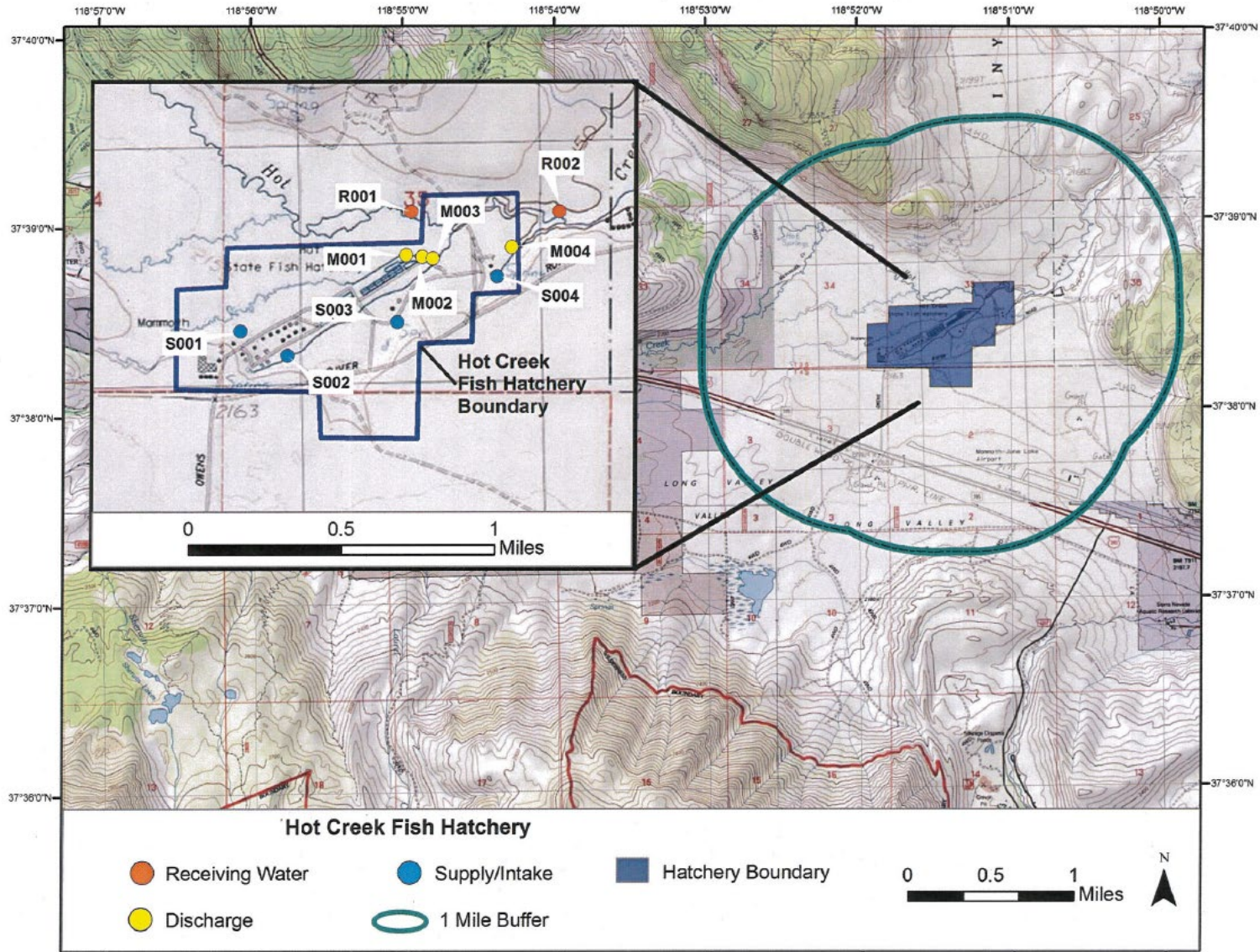
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an

evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

Treatment Period

For flush treatments, the treatment period is the period beginning with the initial application of an aquaculture drug or chemical to a raceway or incubation building and ending when the aquaculture drug or chemical concentration is no longer present in the effluent following cessation of application in that raceway or incubation building or any subsequently treated raceways or incubation building. Where an aquaculture drug or chemical is applied for a period of more than one day in accordance with the label instructions and/or a veterinarian's prescription, the treatment period ends when the aquaculture drug or chemical concentration is no longer present in the effluent following cessation of application on the final day of the treatment.

ATTACHMENT B – LOCATION MAP



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; Permit termination, revocation and reissuance, or modification; denial of a Permit renewal application; or a combination thereof. [40 C.F.R. § 122.41(a); Water Code sections 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, and 13385.]
2. The Discharger must comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Permit has not yet been modified to incorporate the requirement. [40 C.F.R. § 122.41(a)(1)]

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

1. This Permit does not convey any property rights of any sort or any exclusive privileges. [40 C.F.R. § 122.41(g)]
2. The issuance of this Permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. [(40 C.F.R. § 122.5(c)]

F. Inspection and Entry

The Discharger must allow the Lahontan Water Board, State Water Board, USEPA, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to [33 U.S.C. § 1318(a)(4)(B)(i and ii); 40 C.F.R. § 122.41(i)(1 through 4); and Water Code sections 13267 and 13383]:

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
4. Sample or monitor, at reasonable times, for the purposes of assuring Permit compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location.

G. Bypass

1. Definitions

- a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. [40 C.F.R. § 122.41(m)(1)(i)]
- b. "Severe property damage" means substantial physical damage to property; damage to the treatment facilities, which causes them to become inoperable; or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. [40 C.F.R. § 122.41(m)(1)(ii)]

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

3. **Prohibition of bypass.** Bypass is prohibited unless [40 C.F.R. § 122.41(m)(4)(i)(A through C)]:

- a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and

- c. The Discharger submitted notice to the Lahontan Water Board as required under Standard Provisions – Permit Compliance section I.G.5 below, and the bypassed discharge would not or does not cause exceedances of effluent limitations or receiving water objectives.
 4. The Lahontan Water Board may approve an anticipated bypass, after considering its adverse effects, if the Lahontan Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance section I.G.3 above. [40 C.F.R. § 122.41(m)(4)(ii)]
 5. **Notice**
 - a. **Anticipated bypass.** If the Discharger knows in advance of the need for a bypass, it shall submit prior notice to the Lahontan Water Board, if possible, at least 10 days before the date of the bypass. As of December 21, 2020, all notices must also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section V.J below. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. [40 C.F.R. § 122.41(m)(3)(i)]
 - b. **Unanticipated bypass.** The Discharger must submit notice to the Lahontan Water Board of an unanticipated bypass as required in Standard Provisions – Reporting section V.E below (24-hour notice). As of December 21, 2020, all notices must also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section V.J below. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. [40 C.F.R. § 122.41(m)(3)(ii)]

H. Upset

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

1. **Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based Permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review [40 C.F.R. § 122.41(n)(2)].
2. **Conditions necessary for a demonstration of upset.** A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that [40 C.F.R. § 122.41(n)(3)(i through iv)]:
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset;
 - b. The Permitted facility was, at the time, being properly operated;

- c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting section V.E.2.b below (24-hour notice); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance section I.C above.
3. **Burden of proof.** In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. [40 C.F.R. § 122.41(n)(4)]

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. [40 C.F.R. § 122.41(j)(1)]
- B. Monitoring must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. chapter 1, subchapter N. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 C.F.R. part 136 for the analysis of pollutants or pollutant parameters or as required under 40 C.F.R. chapter 1, subchapter N. For the purposes of this paragraph, a method is sufficiently sensitive when:
 1. The method minimum level (ML) is at or below the level of the most stringent effluent limitation established in the Permit for the measured pollutant or pollutant parameter, and either the method ML is at or below the level of the most stringent applicable water quality criterion for the measured pollutant or pollutant parameter or the method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or

2. The method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N for the measured pollutant or pollutant parameter.

In the case of pollutants or pollutant parameters for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. chapter 1, subchapter N, monitoring must be conducted according to a test procedure specified in this Permit for such pollutants or pollutant parameters. (40 C.F.R. §§ 122.21(e)(3), 122.41(j)(4), 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

- A. The Discharger must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Permit, and records of all data used to complete the application for this Permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Lahontan Water Board Executive Officer at any time. [40 C.F.R. § 122.41(j)(2)]
- B. Records of monitoring information must include [40 C.F.R. § 122.41(j)(3)(i through vi)]:
 1. The date, exact place, and time of sampling or measurements;
 2. The individual(s) who performed the sampling or measurements;
 3. The date(s) analyses were performed;
 4. The individual(s) who performed the analyses;
 5. The analytical techniques or methods used; and
 6. The results of such analyses.
- C. Claims of confidentiality for the following information will be denied [40 C.F.R. § 122.7(b)(1 and 2)]:
 1. The name and address of any Permit applicant or Discharger; and
 2. Permit applications and attachments, Permits and effluent data.

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Lahontan Water Board, State Water Board, and/or USEPA must be signed and certified in accordance

with Standard Provisions – Reporting sections V.B.2, V.B.3, V.B.4, and V.B.5 below. [40 C.F.R. § 122.41(k)]

2. All Permit applications must be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). [40 C.F.R. § 122.22(a)(3)]
3. All reports required by this Permit and other information requested by the Lahontan Water Board, State Water Board, or USEPA must be signed by a person described in Standard Provisions – Reporting section V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Standard Provisions – Reporting section V.B.2 above [40 C.F.R. § 122.22(b)(1)];
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) [40 C.F.R. § 122.22(b)(2)]; and
 - c. The written authorization is submitted to the Lahontan Water Board and State Water Board. [40 C.F.R. § 122.22(b)(3)]
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting section V.B.3 above must be submitted to the Lahontan Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. [40 C.F.R. § 122.22(c)]
5. Any person signing a document under Standard Provisions – Reporting sections V.B.2 or V.B.3 above must make the following certification:

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

6. Any person providing the electronic signature for documents described in Standard Provisions – Reporting sections V.B.1, V.B.2, or V.B.3 that are submitted electronically must meet all relevant requirements of Standard Provisions – Reporting section V.B, and must ensure that all relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. [40 C.F.R. § 122.22(e)]

C. Monitoring Reports

1. Monitoring results must be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) to this Permit. [40 C.F.R. § 122.41(l)(4)]
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Lahontan Water Board or State Water Board for reporting the results of monitoring, sludge use, or disposal practices. As of December 21, 2016, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section V.J and comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. [40 C.F.R. § 122.41(l)(4)(i)]
3. If the Discharger monitors any pollutant more frequently than required by this Permit using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. chapter 1, subchapters N or O, the results of such monitoring must be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Lahontan Water Board. [40 C.F.R. § 122.41(l)(4)(ii)]
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Permit. [40 C.F.R. § 122.41(l)(4)(iii)]

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The Discharger shall report to the Lahontan Water Board any noncompliance which may endanger health or the environment. Information shall be provided to the Lahontan Water Board orally within 24 hours from the time the Discharger becomes aware of the circumstances. A report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times (if the noncompliance has not been corrected the anticipated time it is expected to continue shall be reported); and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 C.F.R. § 122.41(l)(6)(i)]

Noncompliance reports for events related to combined sewer overflows, sanitary overflows, or bypass must include the data described above (with the exception of time of discovery) as well as the type of event (i.e., combined sewer overflow, sanitary sewer overflow, or bypass event), type of overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volume untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the event, and whether the noncompliance was related to wet weather.

As of December 21, 2020, all noncompliance reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section V.J. The reports shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. The Lahontan Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. [40 C.F.R. § 122.41(l)(b)(i)]

2. The following information must be reported to the Lahontan Water Board within 24 hours:
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Permit. [40 C.F.R. § 122.41(l)(6)(ii)(A)]
 - b. Any upset that exceeds any effluent limitation in this Permit. [40 C.F.R. § 122.41(l)(6)(ii)(B)]
3. The Lahontan Water Board may waive the above-required written report on a case-by-case basis if an oral report has been received within 24 hours. [40 C.F.R. § 122.41(l)(6)(iii)]

F. Planned Changes

The Discharger must give notice to the Lahontan Water Board as soon as possible of any planned physical alterations or additions to the Permitted Facility. Notice is required under this provision only when 40 C.F.R. § 122.41(l)(1)(i through iii):

1. the alteration or addition to a Permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b);
2. the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged (this notification applies to pollutants that are subject neither to effluent limitations in this Permit); or
3. the alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of Permit conditions that are different from or absent in the existing Permit, including notification of additional use or disposal sites not reported during the Permit application process or not reported pursuant to an approved land application plan.

G. Anticipated Noncompliance

The Discharger must give advance notice to the Lahontan Water Board of any planned changes in the Permitted facility or activity that may result in noncompliance with this Permit's requirements. [40 C.F.R. § 122.41(I)(2)]

H. Other Noncompliance

The Discharger must report all instances of noncompliance not reported under Standard Provisions – Reporting sections V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports must contain the information listed in Standard Provision – Reporting section V.E above. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting section V.E and the applicable required data in appendix A to 40 C.F.R. part 127. The Lahontan Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. [40 C.F.R. § 122.41(I)(7)]

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a Permit application or submitted incorrect information in a Permit application or in any report to the Lahontan Water Board, State Water Board, or USEPA, the Discharger must promptly submit such facts or information. [40 C.F.R. § 122.41(I)(8)]

J. Initial Recipient for Electronic Reporting Data

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 C.F.R. part 127 to the initial recipient defined in 40 C.F.R. section 127.2(b). USEPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 C.F.R. section 127.2(c)]. USEPA will update and maintain this listing. [40 C.F.R. § 122.41(I)(9)]

VI. STANDARD PROVISIONS – ENFORCEMENT

- A.** The Lahontan Water Board is authorized to enforce the terms of this Permit under several provisions of the Water Code, including, but not limited to, Water Code sections 13268, 13350, 13385, 13386, and 13387.

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 C.F.R. § 122.48) requires that all National Pollutant Discharge Elimination System (NPDES) Permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Lahontan Water Board to require technical and monitoring reports. Pursuant to Water Code section 13223, this MRP may be amended by the Lahontan Water Board Executive Officer. This MRP establishes monitoring and reporting requirements that implement federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval from the Lahontan Water Board.
- B. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.
- C. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure accuracy and reliability for measuring discharge volumes. The flow measurement devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ± 10 percent from true discharge rates throughout the range of expected discharge volumes. The Discharger may utilize the data provided by the USGS flow monitoring stations at the AB Spring and CD Spring to report the flow at EFF-001 and EFF-002. If the USGS flow monitoring station at EFF-004 is modified for reliability, then the Discharger may request permission from Board staff to utilize that data to report flows at EFF-004. In addition, if data from the LADWP flow monitoring station at RSW-002 is available to the Discharger, then the Discharger may request permission from Board staff to utilize that data to report flows at RSW-002. Until Board staff agrees that the USGS and/or the LADWP flow data may be utilized, the Discharger shall continue to manually measure flows at EFF-004 and RSW-002.
- D. Laboratories analyzing monitoring samples shall be certified by the State Water Resources Control Board, Division of Drinking Water in accordance with the provisions of Water Code section 13176, and the laboratories must include quality assurance/quality control data with their reports. In the event a certified laboratory is not available to the Discharger, analyses performed by a non-certified laboratory or using field test kits will be accepted provided that a Quality Assurance/Quality Control Program (QA/QC) is instituted by the laboratory and approved by the Executive Officer. Documentation of QA/QC protocols and adherence to the protocols must be kept in the laboratory or at the site for field test kits and shall be available for inspection by Lahontan Water Board staff. The QA/QC Program must conform to

USEPA guidelines or to procedures approved by the Lahontan Water Board. Supplemental field testing for constituents that could be analyzed by a certified laboratory may be done in the field with test kits and meters provided:

1. Samples collected at the minimum-required monitoring frequencies are performed by a certified lab,
 2. A QA/QC program approved by the Executive Officer or Designee is followed,
 3. Detection limits, accuracy, and precision of the kits and meters meet USEPA and Surface Water Ambient Monitoring Program (SWAMP) standards, and
 4. All results for field testing must be reported to the Lahontan Water Board in quarterly and annual self-monitoring reports (SMRs). Supporting QA/QC data must be determined using an established program and retained onsite and reported if requested.
- E. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.
- F. Monitoring results, including non-compliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.
- G. The results of all monitoring required by this Order shall be reported to the Lahontan Water Board and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.
- H. The Discharger shall ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or the most recent Water Pollution Performance Evaluation Study are submitted annually as directed by the State Water Board.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	Headwaters of the AB Spring
--	INF-002	Headwaters of the CD Spring
--	INF-001/002	AB Spring and CD Spring, mixed at headbox
--	INF-003	Headwaters of the Hatchery I Spring
--	INF-004	Headwaters of the Hatchery II Spring
001	EFF-001	Outfall of Settling Pond I
002	EFF-002	Outfall of Settling Pond II
003	EFF-003	Outfall of McBurney Pond

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
004	EFF-004	Outfall of Spawning House II
--	RSW-001	Mammoth Creek, at a location 200 feet upstream of the confluence of Hot Creek and Mammoth Creek
--	RSW-002	Hot Creek, at a point 50 feet downstream of the location where the short tributary receiving discharges from Discharge Point 004 meets Hot Creek.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Locations INF-001/002, INF-003, and INF-004

- The Discharger shall monitor the influent water quality constituents at Monitoring Locations INF-001/002, INF-003, and INF-004 as follows:

Table E-2. Influent Water Quality Monitoring – INF-001/002, INF-003, and INF-004

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method
Conventional Pollutants				
pH	standard units	Grab	1/Month	2,3
Total Suspended Solids (TSS)	mg/L	Grab	1/Month	2
Non-Conventional Pollutants				
Dissolved Oxygen	mg/L	Grab	2/Year	2,3
Nitrate + Nitrite (as N)	mg/L	Grab	Quarterly	2
Nitrogen, Total (as N)	mg/L	Grab	1/Month	2
Settleable Solids	ml/L	Grab	Quarterly	2
Sulfate, Total (as SO ₄)	mg/L	Grab	1/Permit Term	2
Total Dissolved Solids (TDS)	mg/L	Grab	1/Permit Term	2
Turbidity	NTU	Grab	1/Quarter	2

¹ Pollutants must be sampled concurrent with effluent samples.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136. Where no methods are specified for a given pollutant, pollutants shall be analyzed by a method proposed by the Discharger and approved by the Executive Officer.

³ Field tests are authorized for the listed parameters because it is impractical to analyze these parameters in an Environmental Laboratory Accreditation Program (ELAP) certified lab. Standard quality control must be exercised regarding equipment calibration, etc.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Locations EFF-001, EFF-002, EFF-003, and EFF-004

- The Discharger shall monitor effluent from the Facility at Monitoring Locations EFF-001, EFF-002, EFF-003, and EFF-004 as shown in Table E-3. If the Discharger wishes to combine ponds (i.e., if the effluent from Settling Pond 1 is piped into Settling Pond 2) and there is no discharge for the entire month at a monitoring location(s), then there is no need to collect a sample at that point. If ponds are combined, and there is no discharge, then the Discharger shall clearly state this fact in the monitoring report. If the Discharger does not use a chemical listed in Table E-3 during the monitoring period, then the monitoring report shall state “no use” for that chemical.

**Table E-3. Effluent Monitoring –
Locations EFF-001, EFF-002, EFF-003, and EFF-004**

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method
Flow	MGD	Meter ⁷	1/Month	--
Conventional Pollutants				
pH	standard units	Grab	1/Month ²	2, 3-Field Test
Total Suspended Solids (TSS)	mg/L	Grab	1/Month	3
Non-Conventional Pollutants				
Boron	mg/L	Grab	1/Permit Term	3
Chloramine-T®	mg/L	Grab	1/Quarter During Use ⁴	3
Chloride	mg/L	Grab	1/Permit Term	3
Dissolved Oxygen	mg/L	Grab	1/Quarter	3,6
Electrical Conductivity @ 25 Deg. C	µmhos/cm	Grab	1/Quarter and During Use ⁵	5, 3-Field Test
Fluoride	mg/L	Grab	1/Permit Term	3
Formaldehyde	mg/L	Grab	1/Quarter During Use ⁴	3, 7
Hardness, Total (as CaCO ₃)	mg/L	Grab	1/Quarter ⁶	3, 6
Hydrogen Peroxide	mg/L	Grab	1/Quarter During Use ⁴	3
Manganese, Total Recoverable	µg/L	Grab	1/Quarter ⁶	3, 6
Nitrate + Nitrite (as N)	mg/L	Grab	1/Quarter	3
Nitrogen, Total (as N)	mg/L	Grab	1/Month	3
Potassium Permanganate	mg/L	Grab	1/Quarter During Use ⁴	3

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method
PVP Iodine	mg/L	Grab	1/Quarter During Use ⁴	3
Settleable Solids	ml/L	Grab	1/Quarter	3
Sulfate	mg/L	Grab	1/Permit Term	3
Temperature	°F	Grab	1/Quarter	3-Field Test
Total Dissolved Solids (TDS)	mg/L	Grab	1/Permit Term	3
Turbidity	NTU	Grab	1/Quarter	3

¹ Constituents must be sampled concurrent with influent samples.

² If acetic acid or sodium bicarbonate is used in a monitoring period, monitoring for pH shall take place when the pH of the effluent is expected to be at a minimum for acetic acid or a maximum for sodium bicarbonate.

³ Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136. Where no methods are specified for a given pollutant, pollutants shall be analyzed by a method proposed by the Discharger and approved by the Executive Officer. Field tests are authorized for the listed parameters because it is impracticable to analyze these parameters in an ELAP certified lab. Standard quality control must be exercised regarding equipment calibration etc.

⁴ When this chemical is added to waters of the Facility, a sample of the effluent shall be collected at a time when the concentration of the parameter in the effluent is expected to be at a maximum. After the initial sample, if subsequent treatments use the same amount of chemical, and the flow rate and final concentration is calculated to be the same, the Discharger may submit the calculated final effluent concentration.

⁵ In addition to quarterly monitoring, if sodium chloride, sodium bicarbonate, acetic acid, or CO₂ is used, monitoring for electrical conductivity shall be collected at a time when the electrical conductivity of the effluent is expected to be at a maximum.

⁶ Monitoring for hardness and for total manganese shall occur monthly only when potassium permanganate is used and shall be conducted concurrent with monitoring for potassium permanganate.

⁷ For EFF-001 and EFF-002, the Discharger may report flow data from the USGS flow monitoring stations at the AB and CD springs in lieu of monitoring flow at the corresponding effluent discharge points. If USGS data is used, then the Discharger shall clearly state this in the monitoring reports. The Discharger shall continue using a meter to measure flow at EFF-003. The Discharger shall continue to use a meter to measure flow at EFF-004 unless the USGS flow monitoring station has been modified to reliably measure flows and the Discharger receives permission from Water Board staff to use the USGS data.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS – NOT APPLICABLE

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Location RSW-001

1. The Discharger shall monitor Mammoth Creek approximately 200 feet upstream of the confluence of Mammoth Creek and Hot Creek, at Monitoring Location RSW-001 as follows:

Table E-4. Receiving Water Monitoring – Monitoring Location RSW-001

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method
Flow	MGD	Meter/Calculate	2/Year ³	--
Conventional Pollutants				
pH	standard units	Grab	1/Month	2-Field Test

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method
Total Suspended Solids (TSS)	mg/L	Grab	1/Quarter	2
Non-Conventional Pollutants				
Boron	mg/L	Grab	1/Permit Term	2
Chloride	mg/L	Grab	1/Permit Term	2
Dissolved Oxygen	mg/L	Grab	1/Quarter	2-Field Test
Fluoride	mg/L	Grab	1/Permit Term	2
Nitrate + Nitrite (as N)	mg/L	Grab	2/Year	2
Nitrogen, Total (as N)	mg/L	Grab	2/Year	2
Settleable Solids	ml/L	Grab	1/Quarter	2
Sulfate, Total (as SO ₄)	mg/L	Grab	1/Permit Term	2
Temperature	°F	Grab	1/Quarter	2-Field Test
Total Dissolved Solids (TDS)	mg/L	Grab	1/Permit Term	2
Turbidity	NTU	Grab	1/Quarter	2

¹ Samples shall be collected on the same day effluent samples are collected for analysis.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136. Where no methods are specified for a given pollutant, pollutants shall be analyzed by a method proposed by the Discharger and approved by the Executive Officer. Field tests are authorized for the listed parameters because it is impractical to analyze these parameters in an ELAP certified lab. Standard quality control must be exercised regarding equipment calibration, etc.

³ Flow shall be measured during periods of high flow and low flow.

B. Monitoring Location RSW-002

- The Discharger shall monitor Hot Creek approximately 50 feet downstream of the confluence of Hot Creek and the short tributary receiving discharges from Discharge Point 004 at Monitoring Location RSW-002 as follows:

Table E-5. Receiving Water Monitoring – Monitoring Location RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method
Flow	MGD	Meter/Calculate ³	2/Year	--
Conventional Pollutants				
pH	standard units	Grab	1/Monthly	2
Total Suspended Solids (TSS)	mg/L	Grab	1/Quarter	2
Non-Conventional Pollutants				

Parameter	Units	Sample Type	Minimum Sampling Frequency ¹	Required Analytical Test Method
Ammonia	mg/L	Grab	2/Year	2
Boron	mg/L	Grab	1/Permit Term	2
Chloride	mg/L	Grab	1/Permit Term	2
Dissolved Oxygen	mg/L	Grab	1/Quarter	2-Field
Fluoride	mg/L	Grab	1/Permit Term	2
Nitrate + Nitrite (as N)	mg/L	Grab	2/Year	2
Nitrogen, Total (as N)	mg/L	Grab	2/Year	2
Settleable Solids	ml/L	Grab	1/Quarter	2
Sulfate	mg/L	Grab	1/Permit Term	2
Temperature	°F	Grab	1/Quarter	2-Field
Total Dissolved Solids (TDS)	mg/L	Grab	1/Permit Term	2
Turbidity	NTU	Grab	1/Quarter	2

¹ Samples shall be collected on the same day effluent samples are collected for analysis.

² Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136. Where no methods are specified for a given pollutant, pollutants shall be analyzed by a method proposed by the Discharger and approved by the Executive Officer. Field tests are authorized for the listed parameters because it is impractical to analyze these parameters in an ELAP certified lab. Standard quality control must be exercised regarding equipment calibration, etc.

³ If data from the LADWP flow monitoring station at RSW-002 is available to the Discharger, then the Discharger may request permission from Board staff to utilize that data to report flows at RSW-002. Until then, the Discharger shall manually measure flow during periods of high flow and low flow.

C. Visual Monitoring at RSW-001 and RSW-002

1. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions at Monitoring Locations RSW-001 and RSW-002. In the event that no water is present or is frozen, notes on receiving water conditions must be maintained in the log and transmitted in the monitoring reports provided to the Lahontan Water Board. Attention shall be given to observing and describing the presence or absence of:
 - a. Floating or suspended matter;
 - b. Discoloration;
 - c. Aquatic life (including plants, fish, shellfish, birds);
 - d. Visible film, sheen, or coating;
 - e. Fungi, slime, or objectionable growths; and
 - f. Potential nuisance conditions (unusual or objectionable conditions).

IX. OTHER MONITORING REQUIREMENTS

A. Quarterly Drug and Chemical Use Report

The information listed below shall be submitted for all aquaculture drugs or chemicals used at the Facility, including those administered by injection or in medicated feed.

This information shall be reported at quarterly intervals and submitted with the quarterly SMRs using the drug and chemical usage report table found in Attachment H of this Order.

1. The name(s) and active ingredient(s) of the drug or chemical.
2. The date(s) of application.
3. The purpose(s) for the application.
4. The method of application (e.g., immersion bath, flush, administered in feed, injection), duration of treatment, whether the treatment was static or flush (for drugs or chemicals applied directly to water), amount in gallons or pounds used, treatment concentration(s), treatment unit, location (i.e., incubation building, pond, or raceway) where application was made, and the flow measured in million gallons per day (MGD) in the treatment units.
5. The flow rate through the Facility measured in MGD at Monitoring Locations EFF-001, EFF-002, EFF-003, and EFF-004.
6. The method of disposal for drugs or chemicals used but not discharged in the effluent.
7. For drugs and chemicals applied directly to water (i.e., immersion bath, "drip" treatment, flush treatment), the estimated concentration in the effluent at the point of discharge. The specific authorized drugs and chemicals that are applied directly to water include the following: acetic acid, carbon dioxide, Chloramine-T, enteric redmouth vaccine, formalin, hydrogen peroxide, MS-222, oxytetracycline hydrochloride, penicillin G potassium, potassium permanganate, PVP Iodine, sodium bicarbonate, sodium chloride, and Vibrio vaccine. Reporting of the estimated effluent concentration is required whenever the drug or chemical is used, even if an effluent sample has been collected. Reporting of the estimated effluent concentration is not required for drugs and chemicals administered by injection or in medicated feed.

The Discharger shall use the following formula to calculate concentration (C) at the point of discharge:

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

$C = (\text{treatment concentration, mg/L}) \times (\text{flow rate in treatment area, MGD}) / (\text{flow rate at point of discharge, MGD})$.

Example: Potassium permanganate (KMNO₄) concentration at point of discharge for a 2.0 mg/L treatment concentration:

$C = 2.0 \text{ mg/L (KMNO}_4\text{)} \times \frac{0.45 \text{ MGD (flow through treatment area)}}{5.0 \text{ MGD (flow at point of discharge)}}$,

$C = 2.0 \text{ mg/L} \times 0.09 = 0.18 \text{ mg/L potassium permanganate (KMNO}_4\text{)}$
concentration at the point of discharge.

This information shall be submitted quarterly. If the analysis of this chemical use compared with any toxicity testing results or other available information for the

therapeutic agent, chemical or anesthetic indicates that the discharge may cause, have the reasonable potential to cause, or contribute to an excursion of a numeric or narrative water quality criterion or objective, the Executive Officer may require site-specific whole effluent toxicity (WET) tests using *Ceriodaphnia dubia*.

8. Of the list of approved drugs and chemicals provided in Attachment G to this Order, submit an affirmative list of those specific drugs and chemicals that were not used during the reporting quarter using the Drug and Chemical Non-Use Table provided in Attachment H to this Order.

B. Feeding and Production

The Discharger shall develop an annual report describing the feeding and production for the Facility for the previous calendar year. The annual report shall be submitted by **February 1** of each year and include the following information:

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

C. Priority Pollutant Metal Monitoring

Potential discharge of priority pollutants is based on the probability of the pollutants being present in the surface waters supplied or groundwater pumped from source wells, and from data collected from other concentrated aquatic animal production (CAAP) facilities. Data compiled from CAAP facilities, local drinking water wells, and the State Water Board's Groundwater Ambient Monitoring Association (GAMA) database were used to determine the potential for metals and other priority pollutants to occur. Accordingly, the Lahontan Water Board requires sampling and analysis of the influent (Monitoring Locations INF-001, INF-002, INF-003, and INF-004), effluent (Monitoring Locations EFF-001 or EFF-002, EFF-003, and EFF-004), and upstream receiving water (Monitoring Location RSW-001) for the priority pollutant metals listed in Attachment J at least once per permit cycle. The samples shall be analyzed for priority pollutant metals in the **year 2023** and reported to the Lahontan Water Board by **February 1, 2024** in the SMR and included in the Report of Waste Discharge (ROWD). (Refer to Attachment J for the specific monitoring requirements.)

By **September 1, 2022**, the Discharger shall submit a Priority Pollutant Metal Monitoring Plan electronically via California Integrated Water Quality System (CIWQS) submittal outlining reporting levels (RLs), method detection limits (MDLs), and analytical methods for the priority pollutant metals identified in Attachment J. Three months prior to collecting the required Priority Pollutant Metal samples, the Discharger shall notify the Water Board of the ELAP-certified laboratory to be used that can conduct the analysis within the holding times specified in the approved methods in 40 C.F.R. part 136. The Discharger must comply with the monitoring and reporting requirements for the priority pollutant metals as outlined in section 2.3 and 2.4 of the SIP. The maximum required reporting levels for the priority pollutant metals shall be based on the Minimum Levels (MLs) contained in Appendix 4 of the SIP, determined in accordance with Section 2.4.2 and Section 2.4.3 of the SIP. In accordance with Section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Lahontan Water Board must include as RLs, in the Order, all ML

values, and their associated analytical methods, listed in Appendix 4 that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the Lahontan Water Board must select as the RL, the lowest ML value, and its associated analytical method, listed in Appendix 4 for inclusion in the Order. Table J-1 provides required maximum reporting levels in accordance with the SIP.

D. Annual Best Management Practices (BMP) Plan and Storm Water Pollution Prevention Plan (SWPPP) Reporting

The Discharger must annually (by **February 1** of each year) certify that the BMP Plan for Aquaculture Operations and the Facility SWPPP meet the requirements of this Order and are being implemented as written, or discuss the unmet requirements and indicate, if possible, when a return to compliance will occur. The annual report shall include documentation of staff training conducted during the previous calendar year in accordance with Special Provision VI.C.3.a.iv of this Order and the Discharger's BMP Plan. If changes to the BMP Plan or SWPPP are necessary to accurately reflect operations, maintenance, and the management and control of pollutants at the Facility, a revised plan shall be submitted to the Lahontan Water Board along with the above information. The annual report must include a specific section providing this analysis and a summary of changes, if any.

E. Visual Observations

Quarterly visual inspections of the Facility shall be made to identify any non-storm water discharge and its sources to ensure that BMPs are being implemented and are effective. Any non-storm water discharges observed, and their sources, must be reported and described in the next quarterly report following the discharge and summarized in the annual report.

F. Bioassessment Monitoring

The Discharger shall characterize impacts of Facility operations on aquatic life uses in the receiving waters by using biomonitoring (bioassessment) techniques to document the assemblages of aquatic communities and condition of physical aquatic habitat below the discharge points, and either above the discharge points or at another appropriate reference site. Biomonitoring shall be conducted at least once every 5 years, during a summer reference period between June 15 and September 15, beginning in 2023. Subsequent sampling shall be conducted within the same reference period within two weeks before or after the original sampling date. The final report shall be submitted by **February 1, 2024**. The biomonitoring shall be conducted in accordance with the State Resources Control Board's Statewide Ambient Monitoring Program (SWAMP) bioassessment protocol. The Discharger shall update the existing biomonitoring work plan as necessary to conduct bioassessment monitoring.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger must comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

2. The Discharger must submit a summary annual monitoring report. The report shall contain all data collected for the year in a table, and both tabular and graphical summaries of the monitoring data obtained during the previous year(s).
3. The Discharger must calculate and report the result of compliance with average monthly or annual effluent limitations, as necessary. Additional samples may be collected to demonstrate compliance.
4. The Discharger shall report to the Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act of 1986."
5. For constituents having an Effluent Limitation with a net allowed effluent increase over influent, the Discharger shall: (1) collect influent (spring) and effluent samples on the same day, (2) calculate and report the limit for each constituent where an increase over influent is allowed using the following formula, and (3) report compliance with respect to the limit as:
$$\text{Effluent Limit} = \text{Influent Concentration} + \text{Allowed Net Over Influent Concentration}$$
6. For each parameter with an effluent limitation listed in this Order, the Discharger must determine and report compliance with respect to the effluent limitation. The Discharger shall determine and report compliance with respect to each Receiving Water Limitation specified in the Order. For parameters with no monitoring required, the Discharger shall report "Not Determined".
7. As part of the Report of Waste Discharge (ROWD) submitted in accordance with Table 3 on the cover page of this Order, the Discharger must provide all reported data in an Excel tabular format that can be used to evaluate compliance with interim and/or final effluent limitations and conduct a reasonable potential analysis. Electronic submittal of data is required to be uploaded into the State Water Board's California Integrated Water Quality System (CIWQS) Program. If the State Water Board's Permit Entry Tool does not allow data to be submitted, it must be provided separately.

B. Self-Monitoring Reports (SMRs)

1. The Discharger must electronically submit SMRs using the CIWQS Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). The CIWQS Web site will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.
2. The Discharger must report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit quarterly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-6. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
1/Discharge Event/Reporting Period	Order effective date	Calendar day of first discharge event of the quarter (Midnight through 11:59 PM)	May 1 August 1 November 1 February 1 of following year
1/Month	Order effective date	1 st day of calendar month through last day of calendar month	May 1 August 1 November 1 February 1 of following year
1/Quarter	Order effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1 of following year
2/Year	Order effective date	January 1 through June 30 July 1 through December 31	August 1 February 1 of following year
1/Year	Order effective date	January 1 through December 31	February 1 of following year

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 C.F.R. part 136.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory’s MDL, shall be reported as “Detected, but Not Quantified,” or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (\pm a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- c. Sample results less than the laboratory’s MDL shall be reported as “Not Detected,” or ND.
- d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples

relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

- e. Sample collection date and time, sample analysis date and time, the name of individual(s) who collected the sample, the name of individual(s) who analyzed the sample, sample collection method(s) as listed in 40 C.F.R. part 136, sample analysis method(s) as listed in 40 C.F.R. part 136, sample preservation method(s) used between sample collection and analysis, and applicable QA/QC data will be included with reported analytical results.
- 5. Compliance Determination.** Compliance with effluent limitations shall be determined using sample reporting protocols defined above and in Attachment A. For purposes of reporting and administrative enforcement by the Lahontan Water Board and State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the pollutant in the monitoring sample is greater than the effluent limitation established in this Order and greater than or equal to the reporting level (RL).
- 6. Multiple Sample Data.** When determining compliance with an AMEL, MDEL, or Annual Average Effluent Limit, and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of “Detected, but Not Quantified” (DNQ) or “Not Detected” (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
- a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
- 7.** The Discharger must submit SMRs in accordance with the following requirements:
- a. The Discharger must arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
 - b. The Discharger must attach a cover letter to the SMR. The information contained in the cover letter must clearly identify violations of the waste

discharge requirements; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

C. Discharge Monitoring Reports

1. DMRs are USEPA reporting requirements. The Discharger must electronically certify and submit DMRs together with SMRs using Electronic Self-Monitoring Reports module eSMR 2.5 or any upgraded version. Electronic DMR submittal shall be in addition to electronic SMR submittal. Information about electronic DMR submittal is available at the DMR website at:

http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring.

D. Other Reports

1. Hazardous Substance Spill Report

In addition to any other reporting requirements, pursuant to CWC section 13271, the Discharger shall immediately notify the Governor’s Office of Emergency Services (OES) of any hazardous substance discharged into or onto State waters. Pursuant to CWC section 13267, the Discharger must also notify the Lahontan Water Board’s Victorville office of any spills reported to OES within 24 hours by telephone. CWC section 13271(a)(3) states that OES will immediately notify the Lahontan Water Board, local health officer, and administrator of environmental health. Immediately means: (1) as soon as there is knowledge of the discharge, (2) as soon as notification is possible, and (3) when notification can be provided without substantially impeding cleanup or other emergency measures. The reportable quantities for hazardous substances are those developed by the USEPA contained in 40 C.F.R. part 302.

2. Report of Waste Discharge (ROWD)

The Discharger shall file a ROWD in accordance with title 23, California Code of Regulations, as application for re-issuance of waste discharge requirements no later than specified in Table 3 of the Order. The ROWD must include a delimited formatted file, such as Excel®, that contains all monitored data that include, for each value, constituent, measurement date, measured value, MDL/RDL, and measurement units, and analysis method (for the previous permit cycle). In addition, the ROWD will also include annual average flow at Monitoring Locations EFF-001, EFF-002, EFF-003, and EFF-004. The data date range is from March 2021 through the month before the ROWD due date.

E. Summary of Reports

The following table summarizes all reports the Discharger is required to submit.

Table E-7. Summary of Reports

Report Name	Location of Requirement	Monitoring Period	Due Date
Quarterly Influent, Effluent, and Receiving Water Monitoring Report; Quarterly Visual Facility Inspection Findings Report	MRP sections III, IV, VIII, and IX.E	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1 of following year
Annual Influent, Effluent, and Receiving Water Monitoring Report; Quarterly Visual Facility Inspection Findings Report	MRP sections III, IV, VIII, and IX.E	January 1 through December 31	February 1 of following year
Updated BMP Plan	Order section VI.C.3.a	N/A	December 1, 2021
Quarterly Drug and Chemical Use Report	MRP section IX.A	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	Submit with quarterly SMR
Annual Feeding and Production Report	MRP section IX.B	January 1 through December 31	February 1 of each year
Priority Pollutant Metal Monitoring Plan	MRP section IX.C	N/A	September 1, 2022
Priority Pollutant Metal Monitoring Report	MRP section IX.C	January 1, 2023 through December 31, 2023	February 1, 2024
Annual BMP Plan and SWPP Plan Review and Certification	MRP section IX.D	January 1 through December 31	February 1 of each year
Bioassessment Monitoring Report	MRP section IX.E	June 15 through September 15, 2023	February 1, 2024
Hazardous Substance Spill Report	MRP section X.D.2	N/A	Immediately
Report of Waste Discharge (ROWD)	MRP section X.D.3	N/A	180 days before expiration date
Discharge Monitoring Report Quality Assurance Study	Fact Sheet section VII.E.7	N/A	Upon request of State Water Board

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	6B260801001
Discharger	California Department of Fish and Wildlife
Name of Facility	Hot Creek Fish Hatchery
Facility Address	121 Hot Creek Hatchery Road Mammoth Lakes, CA 93546 Mono County
Facility Contact, Title and Phone	Mike Escallier, Fish Hatchery Manager, (760) 934-2664
Authorized Person to Sign and Submit Reports	Mike Escallier, Fish Hatchery Manager, (760) 934-2664
Mailing Address	Same as Facility Address
Billing Address	Same as Facility Address
Type of Facility	Concentrated Aquatic Animal Production/Fish Hatchery (SIC Code 0921)
Major or Minor Facility	Minor
Threat to Water Quality	3
Complexity	C
Pretreatment Program	Not Applicable
Recycling Requirements	Not Applicable
Facility Permitted Flow	Not Applicable
Facility Design Flow	18 million gallons per day (MGD)
Watershed	Owens Hydrologic Unit/Long Hydrologic Area
Receiving Water	Hot Creek and Tributary to Hot Creek
Receiving Water Type	Inland surface water

- A. California Department of Fish and Wildlife (hereinafter Discharger) is the owner and operator of the Hot Creek Fish Hatchery (hereinafter Facility), a cold water concentrated aquatic animal production (CAAP) facility.
- For the purposes of this Order, references to the “discharger” or “Permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.
- B. The Facility discharges wastewater to Hot Creek and a tributary to Hot Creek, both waters of the United States, within the Long Hydrologic Area of the Owens Hydrologic Unit (CA Department of Water Resources No. 603.10). Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.
- C. When applicable, state law requires dischargers to file a petition with the State Water Board, Division of Water Rights and receive approval for any change in the point of discharge, place of use, or purpose of use of treated wastewater that decreases the flow in any portion of a watercourse. The State Water Board retains separate jurisdictional authority to enforce any applicable requirements under Water Code section 1211. This is not a National Pollutant Discharge Elimination System (NPDES) Permit requirement.
- D. The Discharger was previously regulated by Order No. R6V-2006-0027, adopted on June 14, 2006. The Discharger filed a Report of Waste Discharge (ROWD) and submitted an application for reissuance of its Waste Discharge Requirements (WDR) and NPDES permit on December 13, 2018. Supplemental information was provided on April 20, 2020. The application was deemed complete on April 23, 2020.
- E. Regulations at 40 C.F.R. section 122.46 limit the duration of NPDES Permits to a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the duration of the discharge authorization. However, pursuant to California Code of Regulations, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all federal NPDES requirements for continuation of expired permits. Waste discharge requirements do not expire; thus, state requirements for the Facility are in effect pending reissuance of NPDES requirements.

II. FACILITY DESCRIPTION

The Discharger owns and operates the Facility, which is located on 135 acres of land owned by Los Angeles Department of Water and Power and 66 acres of land owned by the United States Forest Service, approximately seven (7) miles east of the Town of Mammoth Lakes in Mono County, within Section 35, Township 3S, Range 28E, MDB&M, as shown in Attachment B.

The Facility produces around 0.25 million pounds of catchable rainbow trout and 1.25 million fingerling Kamloop rainbow trout, cutthroat trout, and golden trout per year. In addition, the Facility serves as one of the domestic broodstock facilities for the state, producing approximately 10 million domestic rainbow trout eggs annually. Around 1.75 million wild trout eggs are also brought to, and incubated at the Facility each year, including Lahontan cutthroat, golden, and Kamloop rainbow trout.

The Facility consists of two hatcheries (Hatchery I and Hatchery II), two spawning houses, fingerling tanks, fingerling troughs, brood ponds, production ponds, four production raceways and three settling ponds. The hatchery operates solely as a flow through system, with no water currently re-circulated. There are four concrete production raceways, each 1,000-feet long, and operated in series. Broodstock are reared in two separate concrete series ranging between 400 and 500 feet long. There are two earthen ponds for use in the rearing of future broodstock. The two hatchery buildings are used for egg incubation, hatching, and fry/fingerling rearing. Hatchery I is a smaller building containing 12 standard California troughs, 10 deep tanks, and an egg manifold capable of running 18 vertical flow egg jars. Hatchery II is a larger building which houses 16 standard California troughs, 38 deep tanks, and a manifold for 24 jars.

The Facility is located at the origin of Hot Creek, where four main geothermal springs supply a combined water flow of 16 to 29 cubic feet per second at a constant temperature of 12 to 16°C. Two of the spring supplies, referred to as “AB Spring” and “CD Spring”, are channeled into underground pipelines which run to the production raceways, and produce about 70 percent of the supply water for the Facility. The two remaining springs, referred to as “Hatchery I Spring” and “Hatchery II Spring” supply the two separate broodstock/hatchery systems. The water from the spring ponds is directed to each hatchery building via underground pipelines, with all excess flows going to the brood series. In the case of the Hatchery II system, water exiting the Hatchery II building flows to the head of the Brood II series.

Facility operations generate wastes that undergo minimal treatment in three flow-through settling ponds. Wastewater is discharged from Discharge Points 001, 002, and 003 to Hot Creek, and from Discharge Point 004 to a small tributary to Hot Creek, both waters of the United States. Hot Creek is a tributary to the Owens River within the Owens River Watershed. Attachment C provides a flow schematic of the Facility.

Current discharges from the Facility include unused food, fish excrement, and fish health additives to food and water. Aquaculture drugs and chemicals that may be used at the Facility to treat various fish disease and parasitic outbreaks include acetic acid, amoxicillin trihydrate, carbon dioxide, Chloramine-T, Chorulon®, Epsom salt, erythromycin, florfenicol, formalin, hydrogen peroxide, Ivermectin, MS-222, Ovaplant®, oxytetracycline dihydrate, oxytetracycline hydrochloride, penicillin G, PVP Iodine, SLICE, sodium bicarbonate, Romet-30, vibrio vaccine (fish are removed via a basket, dipped in vaccine, and then returned to the raceway), and enteric redmouth bacterin (fish are removed via a basket, dipped in vaccine, and then returned to the raceway). These aquaculture drugs and chemicals, prescribed by the Discharger’s Fish Health Laboratory, are to be used on an “as needed” basis to treat various fish disease and parasitic outbreaks. See Attachment G for additional information regarding aquaculture drugs and chemical use.

On January 11, 2010, the Discharger certified that “*the use of copper sulfate products has been discontinued at all DFG hatcheries.*” Additionally, copper plates are not used on the dam boards at this Facility.

Domestic wastewater is generated at the offices and employee housing. It is piped to a lift station and pumped into two 1,000- gallon septic tanks. Wastewater then flows from the septic tanks to four percolation/evaporation (p/e) ponds located on the south side of Hot Creek Road. Each pond is each 105 feet wide by 135 feet long by 10 feet deep. The

ponds have been in place since at least the early 1990's. In 2014, the Discharger dredged two of the Settling Ponds and transported the material to two of the p/e ponds for temporary storage while the dredged material dried out. After the sediment dried, the p/e ponds were returned to their original use.

Although the U.S. Forest Service's Special Use Permit for the Hatchery includes the p/e ponds, the ponds are not currently regulated by the Lahontan Water Board. It is the intention of the Lahontan Water Board to regulate the p/e ponds either under an existing General Waste Discharge Requirements for small domestic wastewater systems or through an amendment to this Order. It is also the intention of the Lahontan Water Board to require the Discharger to investigate whether the domestic wastewater percolate adversely influences the water quality of the CD Spring, Hatchery I Spring, or Hatchery II Spring.

A. Description of Wastewater Treatment and Controls

Wastewater produced from the Facility's four raceways receives sedimentation treatment in two parallel flow-through settling ponds before discharge. Settling Pond I has a retention time of 65 minutes with a dimension of 275 feet by 80 feet by 7 feet (average). Settling Pond II has a retention time of 58 minutes with a dimension of 250 feet by 70 feet by 7 feet (average). The wastewater produced from Hatchery I, the Hatchery I brood ponds, and the Hatchery I spawning house receives treatment in McBurney Pond prior to discharge. McBurney Pond has a retention time of 78 minutes with a dimension of 500 feet by 600 feet by 7 feet (average). The wastewater produced from Hatchery II, the Hatchery II brood ponds, and the Hatchery II spawning house receives no engineered treatment, but flows through a meandering stream channel then through a thickly vegetated marsh-like area, where solids are settled before entering Hot Creek.

Inventorying, grading, and harvesting are accomplished using an Aqua-Life Harvester fish pump. With a mechanical crowder, fish are crowded into the pump at an appropriate rate which reduces fish stress and mortalities. Ponds that are scheduled to be pumped are cleaned and withheld from feed for several days in order to minimize stress as well as the discharge of solids.

The production raceways are cleaned on a weekly basis to minimize waste buildup and promote fish health. No more than two of the raceway pond series are cleaned concurrently to decrease the concentration of solids being discharged into the settling ponds at one time. All screen and racks are checked several times daily, with any vegetation removed in a timely manner and disposed of at a designated upland site. Dead fish are collected and stored in the walk-in freezer and then placed in the hatchery garbage dumpster when it is scheduled to be emptied by the local disposal company at the local landfill. The Discharger occasionally dredges the settling ponds to remove solids that have accumulated on the pond bottoms in order to increase the capacity of the ponds.

B. Discharge Points and Receiving Waters

Wastewater from Settling Ponds I and II is discharged to Hot Creek through Discharge Points 001 and 002. Wastewater from McBurney Pond and is discharged to Hot Creek through Discharge Point 003. Untreated wastewater produced from

Hatchery II, the Hatchery II brood ponds, and the Hatchery II spawning house is discharged to a small tributary to Hot Creek through Discharge Point 004. Hot Creek is a tributary to Owens River, located within the Long Hydrologic Area of the Owens Hydrologic Unit (Hydrologic Unit No. 603.10).

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

- 1. Discharge Point 001.** Effluent limitations contained in Order No. R6V-2006-0027 for discharges of effluent from Settling Pond I through Discharge Point 001 (measured at Monitoring Location M-001 as defined in Order No. R6V-2006-0027) and representative monitoring data from the term of Order No. R6V-2006-0027 are presented in the table below.

Table F-2. Historic Effluent Limitations and Monitoring Data – Discharge Point 001

Parameter	Units	Effluent Limitation: Average Monthly	Effluent Limitation: Maximum Daily	Monitoring Data ¹ : Highest Average Monthly Concentration	Monitoring Data ¹ : Highest Daily Concentration
Flow	MGD	--	6.9	--	9.1
pH	S.U.	--	6.0-9.0	--	5.2 – 8.8
Total Suspended Solids (TSS)	mg/L	6.0	15.0 ²	7.0	7.8
Copper, Total Recoverable	µg/L	4.9	9.9	--	--
Chloramine-T	MPN	1.5	3.0	--	--
Formaldehyde	mg/L	0.65	1.3	--	--
Hydrogen Peroxide	mg/L	--	1.3	--	--
Nitrate + Nitrite (as N)	mg/L	0.23	0.31	0.72	0.73
Potassium Permanganate	mg/L	0.12	0.25	0.034	0.0903
Settleable Solids	mL/L	0.1	--	1.0 ³	
Total Dissolved Solids (TDS)	mg/L	283	297	203	204

¹ From January 2014 to August 2019

² This effluent limitation represents the instantaneous maximum.

³ Result is an average of two grab samples collected on the same day. One sample was ND, the other was 2.0 ml/L.

- 2. Discharge Point 002.** Effluent limitations contained in Order No. R6V-2006-0027 for discharges of effluent from Settling Pond II through Discharge Point 002 (measured at Monitoring Location M-002 as defined in Order No. R6V-2006-0027) and representative monitoring data from the term of Order No. R6V-2006-0027 are presented in the table below.

Table F-3. Historic Effluent Limitations and Monitoring Data – Discharge Point 002

Parameter	Units	Effluent Limitation: Average Monthly	Effluent Limitation: Maximum Daily	Monitoring Data ¹ : Highest Average Monthly Concentration	Monitoring Data ¹ : Highest Daily Concentration
Flow	MGD	--	6.5	--	8.7
pH	S.U.	--	6.0-9.0	--	5.4 – 8.9
Total Suspended Solids (TSS)	mg/L	6.0	15.0 ²	7.6	18
Copper, Total Recoverable	µg/L	4.9	9.9	--	--
Chloramine-T	MPN	1.5	3.0	--	--
Formaldehyde	mg/L	0.65	1.3	--	--
Hydrogen Peroxide	mg/L	--	1.3	--	--
Nitrate + Nitrite (as N)	mg/L	0.23	0.31	0.72	0.75
Potassium Permanganate	mg/L	0.12	0.25	0.066	0.09
Settleable Solids	mL/L	0.1	--	0.1	--
Total Dissolved Solids (TDS)	mg/L	283	297	228	273

¹ From January 2014 to August 2019

² This effluent limitation represents the instantaneous maximum.

- 3. Discharge Point 003.** Effluent limitations contained in Order No. R6V-2006-0027 for discharges of effluent from McBurney Pond through Discharge Point 003 (measured at Monitoring Location M-003 as defined in Order No. R6V-2006-0027) and representative monitoring data from the term of Order No. R6V-2006-0027 are presented in the table below.

Table F-4. Historic Effluent Limitations and Monitoring Data – Discharge Point 003

Parameter	Units	Effluent Limitation: Average Monthly	Effluent Limitation: Maximum Daily	Monitoring Data ¹ : Highest Average Monthly Concentration	Monitoring Data ¹ : Highest Daily Concentration
Flow	MGD	--	3.8	--	6.4
pH	S.U.	--	6.0 – 9.0	--	5.4 – 8.3

Parameter	Units	Effluent Limitation: Average Monthly	Effluent Limitation: Maximum Daily	Monitoring Data ¹ : Highest Average Monthly Concentration	Monitoring Data ¹ : Highest Daily Concentration
Total Suspended Solids (TSS)	mg/L	6.0	15.0 ²	8.2	13.6
Copper, Total Recoverable	µg/L	4.9	9.9	--	--
Chloramine-T	MPN	1.5	3.0	--	--
Formaldehyde	mg/L	0.65	1.3	<0.025	<0.025
Hydrogen Peroxide	mg/L	--	1.3	--	--
Nitrate + Nitrite (as N)	mg/L	0.23	0.31	0.88	0.96
Potassium Permanganate	mg/L	0.12	0.25	0.03	0.09
Settleable Solids	mL/L	0.1	--	1.0 ³	--
Total Dissolved Solids (TDS)	mg/L	283	297	191	194

¹ From January 2014 to August 2019

² This effluent limitation represents the instantaneous maximum.

³ Result is an average of two grab samples collected on the same day. One sample was ND, the other was 2.0 ml/L.

- 4. Discharge Point 004.** Effluent limitations contained in Order No. R6V-2006-0027 for discharges of effluent from through Discharge Point 004 (measured at Monitoring Location M-004 as defined in Order No. R6V-2006-0027) and representative monitoring data from the term of Order No. R6V-2006-0027 are presented in the table below.

Table F-5. Historic Effluent Limitations and Monitoring Data – Discharge Point 004

Parameter	Units	Effluent Limitation: Average Monthly	Effluent Limitation: Maximum Daily	Monitoring Data ¹ : Highest Average Monthly Concentration	Monitoring Data ¹ : Highest Daily Concentration
Flow	MGD	--	2.5	--	3.0
pH	S.U.	--	6.0 – 9.0	--	4.9 – 8.2
Total Suspended Solids (TSS)	mg/L	6.0	15.0 ²	6.0	24.9
Copper, Total Recoverable	µg/L	4.9	9.9	--	--

Parameter	Units	Effluent Limitation: Average Monthly	Effluent Limitation: Maximum Daily	Monitoring Data ¹ : Highest Average Monthly Concentration	Monitoring Data ¹ : Highest Daily Concentration
Chloramine-T	MPN	1.5	3.0	--	--
Formaldehyde	mg/L	0.65	1.3	0.39	0.95
Hydrogen Peroxide	mg/L	--	1.3	--	--
Nitrate + Nitrite (as N)	mg/L	0.23	0.31	0.82	0.86
Potassium Permanganate	mg/L	0.12	0.25	0.0097	0.022
Settleable Solids	mL/L	0.1	--	<0.1	<0.1
Total Dissolved Solids (TDS)	mg/L	283	297	197	210

¹ From January 2014 to August 2019

² This effluent limitation represents the instantaneous maximum.

D. Compliance Summary

A review of electronic self-monitoring data available from CIWQS, for the period from January 2014 through October 2019 indicates that the Discharger has experienced issues complying with flow limitations and effluent limitations for nitrate plus nitrite and TSS contained in Order No. R6V-2006-0027. All four springs providing water to the Facility have nitrate levels which are routinely higher than the effluent limits established in Order No. R6V-2006-0027 for nitrate plus nitrite. Time Schedule Order (TSO) No. R6V-2009-0016 established interim performance-based effluent limitations for nitrate plus nitrite as nitrogen and flow. The TSO was amended in 2010 (R6V-2009-0016-A1) to further clarify the interim limits for nitrate plus nitrite, and again in 2014 to extend the effluent limitation compliance date to May 11, 2019 and eliminate monthly monitoring requirements.

Each of the influent springs has a unique flow rate, as well as unique nitrate concentrations. In particular, nitrates from the springs that flow through the Hatchery I and II buildings are higher in nitrates than from the two main springs (AB and CD). The naturally occurring nitrate that flows through the hatcheries causes excessive algae growth, which poses a challenge for the Discharger to control and difficulties for the Discharger to meet TSS effluent limitations. Additionally, devices to control or divert water flow from the influent springs are not currently installed at the facility, and the flow rates of all springs vary due to the naturally occurring hydrogeologic conditions.

E. Planned Changes

The Discharger is investigating the feasibility of reducing the number of effluent discharge points. It may be possible to direct the water from Settling Pond I into Settling Pond II, thus eliminating Discharge Point 001. The Discharger may also pipe the water from Settling Pond II into the McBurney Pond, thus eliminating Discharge

Point 002. However, the Discharger may wish to maintain the option of discharging from Points 001 and 002 during periods of high natural flow or when a settling pond is being cleaned out. This Order allows the Discharger the flexibility to reduce the discharge points and associated monitoring, as described in section IV of the Monitoring and Reporting Program.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES Permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDRs in this Order.

B. California Environmental Quality Act

This action to adopt an NPDES Permit is exempt from the provisions of chapter 3 of California Environmental Quality Act (CEQA, Public Resources Code sections 21000, et seq.), pursuant to section 13389 of the Water Code. This action also involves the re-issuance of WDRs for an existing facility with a discharge to groundwater of the Long Valley Ground Water Basin and, as such, is also exempt from CEQA as an existing facility for which no expansion of its existing use is being Permitted pursuant to title 14, California Code of Regulations, section 15301.

C. State and Federal Laws, Regulations, Policies, and Plans

1. Water Quality Control Plan. The Lahontan Water Board adopted a Water Quality Control Plan for the Lahontan Region (hereinafter Basin Plan) on March 31, 1995, as amended from time to time. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Beneficial uses applicable to Hot Creek are as follows:

Table F-6. Surface Water Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001, 002, 003	Hot Creek	Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Industrial Service Supply (IND); Groundwater Recharge (GWR); Water Contact Recreation (REC-1); Noncontact Water Recreation (REC-2); Commercial and Sport Fishing (COMM); Aquaculture (AQUA); Cold Freshwater Habitat (COLD); Wildlife Habitat (WILD); Rare, Threatened, or Endangered Species (RARE); Migration of aquatic organisms (MIGR); and Spawning, Reproduction, and Development of Fish and Wildlife (SPWN).
004	Tributary to Hot Creek	

The Basin Plan also identifies beneficial uses of groundwater that are applicable in the Lahontan Region. Beneficial uses of specific groundwater basins in the Lahontan Region are designated in Table 2-2 of the Basin Plan. The Facility is located within the Long Valley Ground Water Basin. Unless otherwise designated by the Lahontan Water Board, all groundwaters are considered suitable, or potentially suitable, for MUN. The beneficial uses applicable to groundwater in the Long Valley Ground Water Basin are as follows.

Table F-7. Ground Water Basin Plan Beneficial Uses

Basin Name	Beneficial Use(s)
Long Valley Ground Water Basin	Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Industrial Service Supply (IND); and Freshwater Replenishment (FRSH).

2. **National Toxics Rule and California Toxics Rule.** USEPA adopted the National Toxics Rule (NTR) on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR are applicable in California. On May 18, 2000, USEPA adopted the California Toxics Rule (CTR). The CTR promulgated new toxics criteria for California in addition to the previously-adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain federal water quality criteria for priority pollutants.
3. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated through the NTR and to the priority pollutant objectives established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

- 4. Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes (65 Fed. Reg. 24641 [April 27, 2000]). New and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.
- 5. Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California"). Resolution No. 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Lahontan Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The Permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16.
- 6. Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES Permits. These anti-backsliding provisions require that effluent limitations in a reissued Permit must be as stringent as those in the previous Permit, with some exceptions in which limitations may be relaxed.
- 7. Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.
- 8. Consideration of California Water Code Section 106.3.** Water Code section 106.3 establishes a state policy that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes, and directs state agencies to consider this policy when adopting regulations pertinent to water uses described in the section, including the use of water for domestic purposes. This WDR implements effluent limitations and requirements to meet established receiving water objectives that will maintain all designated beneficial uses of water. Therefore, the requirement to consider access to safe, clean and affordable water has been met in this Order.
- 9. Regulation of Aquaculture Drugs and Chemicals.** CAAP facilities produce fish and other aquatic animals in greater numbers than natural stream conditions would allow; therefore, system management is important to ensure that fish do

not become overly stressed, making them more susceptible to disease outbreaks. The periodic use of various aquaculture drugs and chemicals is needed to ensure the health and productivity of cultured aquatic stocks and to maintain production efficiency.

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

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

It is the responsibility of the Discharger to know which aquaculture drugs and chemicals may be used in CAAP facilities in the Lahontan Region under all applicable federal, state, and local regulations and which aquaculture drugs and chemicals may be discharged to waters of the United States and waters of the State in accordance with this Order. A summary of regulatory authorities related to aquaculture drugs and chemicals is outlined below.

a. FDA Approved New Animal Drugs

Approved new animal drugs have been screened by the FDA to determine whether they cause significant adverse public health or environmental

impacts when used in accordance with label instructions. Currently, there are ten new animal drugs approved by FDA for use in food-producing aquatic species. These ten FDA-approved new animal drugs include the following:

- i. Chorionic gonadotropin (Chorulon®), used for spawning;
- ii. Oxytetracycline hydrochloride (Terramycin®), an antibiotic;
- iii. Oxytetracycline dihydrate (Terramycin® 200 for fish), an antibiotic;
- iv. Sulfadimethoxine-ormetoprim (Romet-30®), an antibiotic;
- v. Tricaine methanesulfonate (MS-222, Finquel® and Tricaine-S), an anesthetic;
- vi. Formalin (Formalin-F®, Paracide F® and PARASITE-S®), used as a fungus and parasite treatment;
- vii. Sulfamerazine, an antibiotic;
- viii. Chloramine-T (HALAMID® Aqua), a disinfectant;
- ix. Florfenicol (Aquaflor®), an antibiotic; and
- x. Hydrogen peroxide, used to control fungal and bacterial infections.

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

FDA-approved new animal drugs that are added to aquaculture feed must be specifically approved for use in aquaculture feed. Drugs approved by FDA for use in feed must be found safe and effective. Approved new animal drugs may be mixed in feed for uses and at levels that are specified in FDA medicated-feed regulations only. It is unlawful to add drugs to feed unless the drugs are approved for such feed use. For example, producers may not top-dress feed with a water-soluble, over-the-counter antibiotic product. Some medicated feeds, such as Romet-30®, may be manufactured only after the FDA has approved a medicated-feed application (FDA Form 1900) submitted by the feed manufacturer.

b. FDA Investigational New Animal Drug (INAD)

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

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

c. FDA Unapproved New Animal Drugs of Low Regulatory Priority (LRP drugs)

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

- i. Acetic acid, used as a dip at a concentration of 1,000-2,000 mg/L for one to ten minutes as a parasiticide.
- ii. Carbon dioxide gas, used for anesthetic purposes.
- iii. Povidone iodine (PVP) compounds, used as a fish egg disinfectant at rates of 100 mg/L for 30 minutes during egg hardening and 100 mg/L solution for ten minutes after water hardening.
- iv. Sodium bicarbonate (baking soda), used at 142-642 mg/L for five minutes as a means of introducing carbon dioxide into the water to anesthetize fish.
- v. Sodium chloride (salt), used at 0.5-1% solution for an indefinite period as an osmoregulatory aid for the relief of stress and prevention of shock. Used as 3% solution for ten to thirty minutes as a parasiticide.
- vi. Potassium permanganate is a LRP that regulatory action has been deferred pending further study.

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

- i. The aquaculture drugs are used for the prescribed indications, including species and life stages where specified.
- ii. The aquaculture drugs are used at the prescribed dosages (as listed above).
- iii. The aquaculture drugs are used according to good management practices.

- iv. The product is of an appropriate grade for use in food animals.
- v. An adverse effect on the environment is unlikely.

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

d. Extra-label Use of an Approved Animal Drug

Extra-label drug use is the actual or intended use of an approved animal drug in a manner that is not in accordance with the approved label directions. This includes, but is not limited to, use on species or for indications not listed on the label. Only a licensed veterinarian may prescribe extra-label drugs under FDA CVM's extra-label drug use policy. CVM's extra-label use drug policy (CVM Compliance Policy Guide 7125.06) states that licensed veterinarians may consider extra-label drug use in treating food-producing animals if the health of the animals is immediately threatened and if further suffering or death would result from failure to treat the affected animals. CVM's extra-label drug use policy does not allow the use of drugs to prevent diseases (prophylactic use), improve growth rates, or enhance reproduction or fertility. Spawning hormones cannot be used under the extra-label policy. In addition, the veterinarian assumes the responsibility for drug safety and efficacy and for potential residues in the aquatic animals.

D. Impaired Water Bodies on the CWA Section 303(d) List

The USEPA approved the State's 2014 and 2016 CWA section 303(d) list of impaired water bodies on April 6, 2018, prepared pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. The Lahontan Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for applicable pollutants in impaired water bodies on the 303(d) list where it has not done so already. TMDLs establish waste load allocations for point sources and load allocations for non-point sources and are established to achieve the water quality standards for the impaired water bodies. Hot Creek is not an impaired water body on the CWA 303(d) list.

E. Other Plans, Policies and Regulations

1. **Title 27.** Title 27 of the California Code of Regulations (hereafter title 27) contains regulatory requirements for the treatment, storage, processing, and disposal of solid waste. As discussed below, this Order requires compliance with the requirements of title 27 for discharges of wastewater to the settling ponds and disposal of solids.
 - a. **Settling Ponds.** Discharges of wastewater to land, including but not limited to evaporation ponds or percolation ponds, may be exempt from the requirements of title 27, California Code of Regulations, based on section

20090 et seq. The Facility includes settling ponds that may be exempt from title 27 pursuant to section 20090(b), the “wastewater exemption”. The wastewater exemption has the following preconditions for exemption from title 27:

20090(b) Wastewater – *Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leach fields if the following conditions are met:*

(1) the applicable [regional water quality control board] has issued WDRs, or waived such issuance;

(2) the discharge is in compliance with the applicable water quality control plan; and

(3) the wastewater does not need to be managed...as a hazardous waste...”

The settling ponds meet the preconditions for exemption from title 27 because the Lahontan Water Board has issued a WDR, the discharge is in compliance with the Basin Plan and will remain in compliance with the Basin Plan through compliance with the WDR, and the wastewater discharge is not a hazardous waste.

- b. Solids Disposal.** Special Provision VI.C.4.a of this Order specifies that collected screenings, sludges, and other solids, including fish carcasses, shall be disposed of in a manner approved by the Executive Officer and consistent with California Code of Regulations, title 27.

As discussed in section II.A of this Fact Sheet, vegetation is removed and disposed of at a designated upland site. Dead fish are stored in a walk-in freezer and then placed in the hatchery garbage dumpster when it is scheduled to be emptied by the local disposal company.

Acceptable methods of solid waste disposal include disposal at permitted sites (e.g., landfill, composting sites, soil amendment sites) that are operated in accordance with valid WDRs issued by a Regional Water Board, or located outside of California, unless the waste disposal is exempted from title 27. This Order seeks to clarify that onsite disposal of solid wastes is not authorized unless approved by the Lahontan Water Board in writing. In accordance with Special Provision VI.C.3.a of this Order, the Discharger’s updated Best Management Practices (BMP) Plan due on **December 1, 2021** shall specify BMPs for solid waste management that ensure disposal or land application of wastes is conducted in a manner approved by the Executive Officer or Designee and consistent with requirements in title 27.

- 2. Storm Water Requirements.** USEPA promulgated federal regulations for storm water on 16 November 1990 in 40 C.F.R. parts 122, 123, and 124. The State Water Board’s Water Quality Order 2014-0057-DWQ, General Permit for Storm Water Discharges Associated with Industrial Activities (NPDES General Order No. CAS000001) does not regulate storm water discharges from CAAP facilities/fish hatcheries. Nevertheless, the Lahontan Water Board finds that industrial wastes in storm water runoff from the Facility may impact water quality.

Therefore, this Order includes appropriate requirements to address storm water runoff from the Facility, including prohibitions, visual non-storm water monitoring and reporting, and development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES Permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 C.F.R. section 122.44(a) requires that Permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that Permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

Generally, mass-based effluent limitations ensure that proper treatment, and not dilution, is employed to comply with the final effluent concentration limitations. Section 122.45(f)(1) requires that all Permit limitations, standards or prohibitions be expressed in terms of mass units except under the following conditions: (1) for pH, temperature, radiation or other pollutants that cannot appropriately be expressed by mass limitations; (2) when applicable standards or limitations are expressed in terms of other units of measure; or (3) if in establishing technology-based Permit limitation on a case-by-case basis limitations based on mass are infeasible because the mass or pollutant cannot be related to a measure of production. The limitations, however, must ensure that dilution will not be used as a substitute for treatment.

The limitations in Order No. R6V-2006-0027, the CTR criteria, and the water quality objectives (WQOs) in the Basin Plan are expressed in concentration units. Because the final limitations in this Order are based on the limitations in the previous Order, the CTR criteria, and the WQOs in the Basin Plan, mass-based effluent limitations are not included. Instead, concentration-based limitations for pollutants for each discharge point are included in this Order.

A. Discharge Prohibitions

1. The discharge prohibitions established in this Order are from waste discharge prohibitions in the Basin Plan that apply to the entire Lahontan Region (section 4.1) or based on discharge prohibitions specified in the Water Code.
2. As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of a treatment facility. Federal Regulations, 40 C.F.R. section 122.41(m), defines “bypass” as the intentional diversion of waste streams from any portion of a treatment facility. This section of the Federal Regulations, 40 C.F.R. section 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Water Board’s prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the Federal Regulations, 40 C.F.R. section 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

3. Consistent with the Region-wide prohibition established in section 4.1 of the Basin Plan, this Order prohibits the discharge of pesticides to surface or groundwaters. Exemptions may be granted by the Water Board provided that specific exemption criteria specified in section 4.1 of the Basin Plan are satisfied.
4. This Order prohibits the use of hydrogen peroxide in more than one raceway at a time, due to estimated concentrations exceeding the applicable water quality objectives when more than one raceway is treated (see section IV.C.3 of this Fact Sheet).
5. Due to the nature of operations and chemical treatments at the Facility, the effluent generally contains only one known drug or chemical at any given time. Based on a review of the Discharger's quarterly drug and chemical use reports between 2014 and 2019, the Discharger did not apply more than one aquaculture drug or chemical at a time within any calendar quarter, except as follows:
 - a. In the second and third quarters of 2014, formalin was applied in Hatchery II and potassium permanganate was applied in the raceways within the same week.
 - b. In the fourth quarter of 2014, MS-222 was applied to the brood stocks and potassium permanganate was applied in the raceways within two (2) weeks of each other.
 - c. In the first quarter of 2019, formalin and sodium chloride were applied to Hatchery II and potassium permanganate was applied in the raceways within a few days of each other.

Therefore, as discussed further in section IV.C.3 and IV.C.5 of this Fact Sheet, this Order uses a chemical-specific approach to determine "reasonable potential" for discharges of aquaculture drugs and chemicals from the Facility and does not include whole effluent toxicity testing requirements. Some information is available to discern whether application of more than one aquaculture drug or chemical would produce toxic effects; however, defining the multitude of chemicals which could be applied concurrently would result in an even more complex Order. Therefore, this Order prohibits the application of more than one aquaculture drug or chemical to the raceways per treatment period (as defined in Attachment A).

6. This Order includes storm water runoff and storm water collection system prohibitions and requirements. This Order also establishes a requirement for quarterly non-storm water inspections.
7. This Order includes prohibitions on introduction of any aquaculture drug or chemical not already considered by this Order, or in a manner other than specified in this Order to protect the beneficial uses of the receiving waters and to meet water quality objectives from the Basin Plan.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA Permit regulations at 40 C.F.R. section 122.44 require that Permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent

effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Best Professional Judgment (BPJ) in accordance with 40 C.F.R. section 125.3.

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

- a. Best practicable treatment control technology (BPT) represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.
- b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.
- c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including biochemical oxygen demand (BOD), total suspended solids (TSS), fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.
- d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires USEPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 C.F.R. section 125.3 authorize the use of BPJ to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used (i.e., where no applicable ELGs exist), the Lahontan Water Board must consider specific factors outlined in 40 C.F.R. section 125.3.

A CAAP facility is defined in 40 C.F.R. section 122.24 as a fish hatchery, fish farm, or other facility that contains, grows, or holds cold water fish species or other cold water aquatic animals including, but not limited to, the *Salmonidae* family of fish (e.g., trout and salmon) in ponds, raceways, or other similar structures. In addition, the facility must discharge at least 30 calendar days per year, produce at least 20,000 pounds (9,090 kilograms) harvest weight of aquatic animals per year, and feed at least 5,000 pounds (2,272 kilograms) of food during the calendar month of maximum feeding. A facility that does not meet the above

criteria may also be designated a cold water CAAP facility upon a determination that the facility is a significant contributor of pollution to waters of the United States [40 C.F.R. § 122.24(c)]. Cold water, flow-through CAAP facilities are designed to allow the continuous flow of fresh water through tanks and raceways used to produce aquatic animals (typically cold water fish species). Flows from CAAP facilities ultimately are discharged to waters of the United States and of the State. 40 C.F.R. section 122.24 specifies that CAAP facilities are point sources subject to the NPDES program.

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

Fish raised in CAAP facilities may become vulnerable to disease and parasite infestations. Various aquaculture drugs and chemicals are used periodically at CAAP facilities to ensure the health and productivity of the confined fish population, as well as to maintain production efficiency. Aquaculture drugs and chemicals are used to clean raceways and to treat fish for parasites, fungal growths and bacterial infections. Aquaculture drugs and chemicals are sometimes used to anesthetize fish prior to spawning or “tagging” processes. As a result of these operations and practices, drugs and chemicals may be present in discharges to waters of the United States or waters of the State.

On August 23, 2004, USEPA published ELGs for the Concentrated Aquatic Animal Production Point Source Category (40 C.F.R. part 451). The ELGs became effective on September 22, 2004. The ELGs establish national technology-based effluent discharge requirements for flow-through and recirculation systems and for net pens based on BPT, BCT, BAT and NSPS. In its proposed rule, published on September 12, 2002, USEPA proposed to establish numeric limitations for a single pollutant – TSS – while controlling the discharge of other pollutants through narrative requirements. In the final rule, however, USEPA determined that, for a nationally applicable regulation, it would be more appropriate to promulgate qualitative TSS limitations in the form of solids control BMP requirements.

In the process of developing the ELGs, USEPA identified an extensive list of pollutants of concern in discharges from the aquaculture industry, including several metals, nutrients, solids, BOD, bacteria, drugs, and residuals of federally registered pesticides. USEPA did not include specific numerical limitations in the ELG for any pollutants on this list, believing that BMPs would provide acceptable control of these pollutants. USEPA did conclude during the development of the ELG that control of suspended solids would also effectively control concentrations of other pollutants of concern, such as BOD, metals and nutrients, because other pollutants are either bound to the solids or are incorporated into them. And,

although certain bacteria are found at high levels in effluents from settling basins, USEPA concluded that disinfection is not economically achievable. USEPA also allowed Permitting authorities to apply technology-based effluent limitations for other pollutants and WQBELs for pollutants considered in the ELG in order to comply with applicable water quality standards.

2. **Applicable Technology-Based Effluent Limitations**

Technology-based requirements in this Order are based on a combination of application of the ELGs for BMP requirements and case-by-case numeric limitations developed using BPJ and carried over from Order R6V-2006-0027 and previous permits.

- a. **Settleable Solids and Total Suspended Solids (TSS).** The effluent limitation for settleable solids was established as a technology-based effluent limit based on BPJ in previous Order No. 6-99-55 prior to the issuance of the CAAP ELGs in 2004 and were established as a means of controlling the discharge of solids from algae, silt, fish feces, and uneaten feed. Order No. R6V-2006-0027 retained the settleable solids effluent limit as a technology-based effluent limit based on BPJ. Section 402(o) of the CWA prohibits backsliding of effluent limitations that are based on BPJ to reflect a subsequently promulgated ELG which is less stringent.

The effluent limitations for TSS are carried forward from Order No. R6V-2006-0027, but with additional clarity. The average monthly limitation and the maximum daily limitation are expressed as a net increase over the influent concentration because the Discharger has no control over natural conditions and the resulting spring water quality. This allowance is continued as further clarified below.

Existing wastewater treatment technology (such as settling basins and vacuum cleaning) is capable of dependably removing solids (primarily fish feces and uneaten feed) from CAAP facility effluent prior to discharge. This Facility utilizes Settling Ponds I and II, and McBurney Pond prior to discharge. The raceways are also cleaned periodically. Existing self-monitoring data show the Facility is able to reliably meet the numeric effluent limitations for settleable solids and TSS using existing wastewater treatment and control technologies, and implementation of BMPs.

This Order does not contain mass effluent limitations for settleable solids and TSS because there are no standards that specifically require mass-based effluent limitations, and mass of the pollutant discharged is not specifically related to a measure of operation [40 C.F.R. § 122.45(f)(iii)]. This is consistent with Order R6V-2006-0027, which did not include mass effluent limitations.

Because the Discharger has no control over supply water quality, and because the supply water contains TSS (mainly as algae and other aquatic plants), the intent of the previous Order, as well as this Order, is to adjust the technology-based TSS effluent limitation to reflect credit for TSS in the Discharger's intake water, as allowed in 40 CFR 122.45(g). This adjustment

is warranted because TSS in the influent and the effluent is generally of the same magnitude, and because the Discharger has settling pond controls. Previous Order No. R6V-2006-0027, Table IV.A.1.b contained footnote “a” stating that the TSS “Limit is 6.0 mg/L net over levels in influent.” To clarify, this Order retains a “net over influent” intake allowance for both the Average Monthly limitation and the Maximum Daily limitation but provides a clearer definition of how the effluent limitation applies. The limitation applies to each influent-effluent pair; for example, the TSS limitation for EFF-003 is 6 mg/L higher than the TSS concentration in INF-003, and the TSS limitation for EFF-004 is 6 mg/L higher than the TSS concentration in INF-004.

Table F-8. Technology-Based Effluent Limitations for Discharge Points 001, 002, 003, and 004

Parameter	Units	Effluent Limitations: Average Monthly	Effluent Limitations: Instantaneous Minimum	Effluent Limitations: Instantaneous Maximum
Settleable Solids	ml/L	0.1	--	--
Total Suspended Solids (TSS)	mg/L	Footnote 1	--	Footnote 1

¹ Effluent Limit = Influent Concentration + 6.0 mg/L net over influent concentration, for each matching influent point and discharge point. Report compliance with respect to the limit by providing both the influent concentration and the discharge concentration for each discharge point.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA section 301(b) and 40 C.F.R. section 122.44(d) require that Permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) of 40 C.F.R. requires that Permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state’s narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan and achieve applicable water quality objectives and

criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply.

The federal CWA section 101(a)(2), states: *“it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.”* Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 C.F.R. sections 131.2 and 131.10, require that all waters of the State be regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 C.F.R., defines existing beneficial uses as those uses actually attained after November 28, 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 C.F.R. section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

a. Receiving Water and Beneficial Uses

The Facility discharges wastewater to Hot Creek and an unnamed tributary to Hot Creek, waters of the United States. The beneficial uses applicable to Hot Creek are presented in Table F-9.

b. Water Quality Objectives

The water quality objectives applicable to the receiving water for this discharge are from the Basin Plan; the CTR, established by USEPA at 40 C.F.R. section 131.38; and the NTR, established by USEPA at 40 C.F.R. section 131.36. Some pollutants have water quality objectives established by more than one of these sources.

- i. Basin Plan.** The Basin Plan specifies numeric and narrative water quality objectives applicable to all water bodies in the Lahontan Region. The narrative toxicity objective states, *“All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.”* The narrative chemical constituents objective states, *“Waters shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.”*

The Basin Plan includes the following site-specific numeric water quality objectives applicable to the Owens Hydrologic Unit at Hot Creek (at County Road):

Table F-9. Basin Plan Water Quality Objectives for Hot Creek

Parameter	Annual Average ¹ (mg/L)	90 th Percentile ² (mg/L)
Total Dissolved Solids (TDS)	275	380
Chloride	41	60
Sulfate	24	35
Fluoride	1.8	2.8
Boron	1.8	2.6
Nitrate (NO ₃) as Nitrate-Nitrogen	0.2	0.4
Total Nitrogen	0.3	1.5
Orthophosphate, Dissolved	0.65	1.22

¹ Arithmetic mean of all data collected in a 1-year period.

² Only 10 percent of data can exceed this value.

Effluent limitations and provisions contained in this Order are designed to implement these objectives, based on available information.

- ii. **CTR.** The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to all inland surface waters and enclosed bays and estuaries. Human health criteria are further identified as for “water and organisms” or for “organisms only.”
- iii. **NTR.** The NTR establishes numeric aquatic life criteria for selenium and numeric human health criteria for 33 toxic organic pollutants.

3. Determining the Need for WQBELs

Assessing whether a pollutant has reasonable potential to exceed a water quality objective in the water body is the fundamental step in determining whether or not a WQBEL is required.

a. Reasonable Potential Analysis (RPA) Methodology

According to SIP section 1.3, the RPA begins with identifying the observed maximum effluent concentration (MEC) for each pollutant based on effluent concentration data. There are three triggers in determining reasonable potential:

- i. Trigger one is activated if the MEC is greater than or equal to the lowest applicable water quality objective ($MEC \geq$ water quality objective), which has been adjusted, if appropriate, for pH, hardness, and translator data. If the MEC is greater than or equal to the adjusted water quality objective, then that pollutant has reasonable potential, and a WQBEL is required.
- ii. Trigger two is activated if the observed maximum ambient background concentration (B) is greater than the adjusted water quality objective (B

> water quality objective) and the pollutant is detected in any of the effluent samples.

- iii. Trigger three is activated if a review of other information determines that a WQBEL is required to protect beneficial uses, even though both MEC and B are less than the water quality objective.

To maintain consistency in methodology for permitting discharges of various constituents, the Lahontan Water Board used the same procedures required by the SIP for CTR constituents to evaluate reasonable potential and, where necessary, develop WQBELs for non-CTR constituents. For constituents with no promulgated numeric water quality criteria or objectives, the Lahontan Water Board interpreted narrative objectives from the Basin Plan to establish the basis for reasonable potential and effluent limitation calculations.

b. Data and Information Used for the RPA

The following describes the data used to perform an RPA for discharges from Discharge Points 001, 002, 003, and 004.

- i. **Effluent Data.** The effluent monitoring data collected by the Discharger during the term of Order No. R6V-2006-0027, and the nature of the discharge from Discharge Points 001, 002, 003, and 004 were analyzed to determine if the discharge has reasonable potential. The RPA was based on effluent monitoring data collected by the Discharger between January 2014 and August 2019.
- ii. **Hardness.** Some freshwater metal objectives are hardness-dependent. The lower the hardness, the more stringent the resulting criterion is. Upstream receiving water hardness monitoring was not required during the term of Order No. R6V-2006-0027.
- iii. **Ambient Background Data.** The receiving water data collected by the Discharger during the term of Order No. R6V-2006-0027 were analyzed to determine if the discharge has reasonable potential. The RPA was based on upstream receiving water monitoring data collected by the Discharger between March 2014 and July 2019.
- iv. **Assimilative Capacity/Mixing Zones.** A mixing zone has not been granted in this NPDES permit. Both effluent and receiving water limitations in the Order are end-of-pipe limits with no allowance for dilution within the receiving water.

c. RPA for Priority Pollutants

Section 1.3 of the SIP requires periodic monitoring for priority pollutants (at least once prior to the issuance and reissuance of a permit) for which criteria or objectives apply and for which no effluent limitations have been established. However, the Regional Water Board may choose to exempt low volume discharges, determined to have no significant adverse impact on water quality, from this monitoring requirement. As described in Order No. R6V-2006-0027, the Lahontan Water Board had determined that discharges from the Facility have no significant adverse impact on water quality for

priority pollutants, and priority pollutant monitoring was not required during the term of Order No. R6V-2006-0027, except for copper monitoring when copper sulfate was used at the Facility.

A potential source of copper (a priority pollutant identified in the NTR and CTR) in discharges from fish hatcheries is from the use of copper sulfate and chelated copper compounds to control the growth of external parasites and bacteria on fish. On January 11, 2010, the Director of Fish and Wildlife certified that "*the use of copper sulfate products has been discontinued at all DFG hatcheries.*" Therefore, effluent limits and monitoring requirements for copper are not required in this Order.

d. RPA for Non-Conventional Pollutants

For drugs and chemicals applied directly to water, the numeric value for the protection of beneficial uses are based on site-specific conditions and evaluations (either No Observable Effect Concentration, NOEC, or the No Adverse Effect Level, NOAEL), to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. This numeric value, if available, is specified for each respective drug or chemical applied as listed in the table below:

Table F-10. Concentrations for Drugs and Chemicals Applied Directly to Water

Drug/Chemical	Concentration	Basis
Acetic Acid	Not Available	Not Available
Carbon Dioxide	Not Available	Not Available
Chloramine-T	86.3 mg/L	96-hour NOEC for <i>C. dubia</i>
Formalin	1.3 mg/L	96-hour NOAEL for <i>C. dubia</i>
Hydrogen Peroxide	1.3 mg/L	96-hour NOAEL for <i>C. dubia</i>
MS-222	70 mg/L	96-hour NOEC for <i>C. dubia</i>
Oxytetracycline Hydrochloride	40.4 mg/L	96-hour NOAEL for <i>C. dubia</i>
Penicillin G	350 mg/L	7-day NOEC for <i>P. promelas</i>
Potassium Permanganate	0.038 mg/L	96-hour NOAEL for <i>C. dubia</i>
PVP Iodine	0.86 mg/L	96-hour NOAEL for <i>C. dubia</i>
Sodium Bicarbonate	Not Available	Not Available
Sodium Chloride	Not Available	Not Available

i. Constituents with No Reasonable Potential

(a) Basin Plan Table 3-17 Parameters. As described in Section IV.C.2.b of this Fact Sheet, the Basin Plan contains numeric water quality objectives for Hot Creek (at County Road) for TDS, chloride, sulfate, fluoride, boron, nitrate, total nitrogen, and orthophosphate. These objectives are applied as annual average and 90th percentile objectives. To conduct the RPA for these parameters, the Lahontan Water Board evaluated the annual average and 90th percentile values of the effluent and receiving water. The tables below summarize the RPA for these pollutants. The tables include the annual average and 90th percentile values of the effluent and receiving water for each parameter and the applicable water quality objectives from Basin Plan Table 3-17. As shown in the tables below, the maximum observed effluent 90th percentile and annual average results are below the applicable objectives, except for total nitrogen (see Section IV.C.3.d.ii of this Fact Sheet for a discussion of the RPA results for total nitrogen).

Order No. R6V-2006-0027 included final effluent limitations for nitrate plus nitrite (as N) based on the Basin Plan objective for nitrate as nitrogen. Because nitrate plus nitrite is faster and cheaper to measure than nitrate only, and per the Discharger's request, the Lahontan Water Board established limits and monitoring requirements for nitrate plus nitrite instead of nitrate only.

Based on monitoring data collected between 2014 and 2019, the annual average effluent concentrations of nitrate plus nitrite consistently exceed the applicable annual average water quality objective of 0.2 mg/L. However, despite the elevated effluent concentrations, the downstream receiving water annual average nitrate plus nitrite concentration only exceeded the objective once, with a concentration of 0.28 mg/L in 2017, a high flow year.

The 90th percentile effluent concentrations of nitrate plus nitrite occasionally exceeded the applicable 90th percentile water quality objective of 0.4 mg/L, primarily at Discharge Points 003 and 004. However, the 90th percentile downstream receiving water concentration of 0.40 mg/L in 2017 was not exceeded in any year.

These data suggest that the effluent does not consistently cause or contribute to an exceedance of the annual average or 90th percentile water quality objectives for nitrate plus nitrite. Elevated downstream receiving water concentrations were only observed in 2017; however, in 2017, limited receiving water data (i.e., two sampling dates during a high flow year) were available with which to evaluate compliance with the water quality objectives. Therefore, this Order does not retain the effluent limitations for nitrate plus nitrite.

This Order includes receiving water limitations for TDS, chloride, sulfate, fluoride, boron, nitrate, total nitrogen, and orthophosphate

based on the Basin Plan objectives. This Order also requires monitoring for these parameters.

Table F-11. Summary of RPA for Basin Plan Table 3-17 Parameters¹ (90th Percentile)

Parameter	90 th Percentile Objective (mg/L)	Maximum Observed 90 th Percentile Value (mg/L)						RP?
		M-001	M-002	M-003	M-004	R-001	R-002	
Total Dissolved Solids (TDS)	380	203	218	191	198	195	186	No
Chloride	60	4.7	4.7	8.7	16	1.7	4.5	No
Sulfate	35	12	11	13	14	4.4	11	No
Fluoride	2.8	0.31	0.36	0.32	0.28	0.18	0.28	No
Boron	2.6	0.27	0.28	0.19	0.19	--	0.21	No
Nitrate (NO ₃) as Nitrate-Nitrogen ²	0.4	0.72	0.70	0.85	0.80	0.27	0.39	No
Orthophosphate, Dissolved	1.22	0.28	0.27	0.22	0.24	0.10	0.21	No

¹ See Section IV.C.3.d.ii of this Fact Sheet for a discussion of RPA results for total nitrogen.

² Basin Plan objectives apply to nitrate as nitrogen. The maximum observed 90th percentile and annual average values represent monitoring data for nitrate plus nitrite (as N).

Table F-12. Summary of RPA for Basin Plan Table 3-17 Parameters¹ (Annual Average)

Parameter	Annual Average Objective (mg/L)	Maximum Observed Annual Average Value (mg/L)						RP?
		M-001	M-002	M-003	M-004	R-001	R-002	
Total Dissolved Solids (TDS)	275	198	201	181	184	151	170	No
Chloride	41	4.5	4.5	8.0	15	1.7	4.5	No
Sulfate	24	11	11	12	13	4.4	11	No
Fluoride	1.8	0.30	0.33	0.30	0.26	0.18	0.27	No
Boron	1.8	0.27	0.28	0.19	0.19	--	0.21	No
Nitrate (NO ₃) as Nitrate-Nitrogen ²	0.2	0.43	0.45	0.50	0.59	0.15	0.28 ³	No
Orthophosphate, Dissolved	0.65	0.25	0.26	0.21	0.21	0.09	0.16	No

¹ See Section IV.C.3.d.ii of this Fact Sheet for a discussion of RPA results for total nitrogen.

² Basin Plan objectives apply to nitrate as nitrogen. The maximum observed 90th percentile and annual average values represent monitoring data for nitrate plus nitrite (as N).

³ Maximum observed value occurred in 2017 and was based only two samples. The 90th percentile value for all other years was below the applicable Basin Plan objective.

(b) Acetic Acid, Carbon Dioxide and Sodium Bicarbonate. The Discharger does not currently use acetic acid at the Facility but may use it in the future for the control of external parasites as flush

and/or bath treatments. Carbon dioxide gas may be used in bath treatments to anesthetize fish prior to spawning. Sodium bicarbonate, or baking soda, may also be used in bath treatments as a means of introducing carbon dioxide into the water to anesthetize fish. While the discharge of acetic acid, carbon dioxide, or sodium bicarbonate may affect the pH of the receiving water, current effluent and receiving water limitations for pH are adequate to ensure that any potential discharges of acetic acid, carbon dioxide, or sodium bicarbonate do not impact water quality (in addition, carbon dioxide gas added to water will quickly equilibrate with atmospheric carbon dioxide with aeration). However, the use of these substances must be reported as specified in the Monitoring and Reporting Program (Attachment E).

(c) Amoxicillin, Erythromycin, Florfenicol, and Romet-30®.

Amoxicillin, erythromycin, florfenicol, and Romet-30® may be used by CAAP facilities. Amoxicillin is injected into fish to control acute disease outbreaks through a veterinarian's prescription for extra-label use. Erythromycin (injected or used in feed formulations) and florfenicol (used in feed formulations) are antibiotics used to control acute disease outbreaks. Erythromycin must be used under an INAD exemption or a veterinarian feed directive. Florfenicol is a NADA approved drug. Romet-30®, also known by the trade name Sulfadimethoxine-oremetroprim, is an antibiotic used in feed formulations and is FDA-approved for use in aquaculture for control of furunculosis in salmonids. Amoxicillin (when injected into fish), erythromycin (when injected into fish or used as a feed additive), florfenicol and Romet-30® (when used as feed additives) are used in a manner that reduces the likelihood of direct discharge of antibiotics to waters of the United States or waters of the State, particularly when CAAP facilities implement BMPs as required by this Order. Accordingly, this Order does not include WQBELs for these substances; however, this Order does require reporting of these substances as specified in the attached Monitoring and Reporting Program (Attachment E).

(d) Chloramine-T. Chloramine-T (sodium p-toluenesulfonchloramide), also known by the brand name HALAMID® Aqua, is approved through FDA's NADA program as a replacement for copper sulfate and formalin. Chloramine-T is not currently used but may be used by the Discharger in the future as a possible replacement for formalin in both the raceways, which discharge at Discharge Points 001 and 002, and Hatcheries I and II, which discharge at Discharge Points 003 and 004, respectively. Because operations at raceways and hatcheries generate similar type of waste and discharge wastewater to the same receiving water, the Lahontan Water Board has determined that Discharge Points 001, 002, 003, and 004 shall have identical effluent concentration limitations for Chloramine-T if necessary. The Discharger reports Chloramine-T may be used as a

flush or bath treatment at a concentration of up to 20 mg/L for one hour. Chloramine-T breaks down into para-toluene sulfonamide (p-TSA) and, unlike other chlorine-based disinfectants, does not break down into chlorine or form harmful chlorinated compounds.

Results of the Discharger's Pesticide Unit *C. dubia* test where the test animals were exposed to the toxicant for two hours followed by three exchanges of control water to remove residual compound and then observed for 96 hours determined the NOEC and LOEC to be 86.3 mg/L and 187 mg/L, respectively.

Effluent data for Chloramine-T are not available to assess the impact of Chloramine-T use at the Facility. Therefore, the following information and calculations were used to estimate the effluent Chloramine-T concentrations from flush treatments in the raceways at Discharge Points 001 and 002. The calculations assume the flow from the raceways mixes completely with the volume of water in the settling ponds and is discharged with no further concentration, breakdown, or dilution of Chloramine-T.

Estimated Concentration When Applied in Raceways

With a flow of 2.5 cfs, the dilution volume of water from one rearing raceway after one hour is 67,325 gallons (1 cfs = 26,930 gallons per hour).

The Facility has two sedimentation ponds, Sedimentation Ponds I & II. Pond I has average dimensions of 275 feet x 80 feet x 7 feet. The volume of Pond I is, therefore approximately 154,000 cubic feet, or 1,152,000 gallons (one cubic foot = 7.48052 gallons).

Pond II has average dimensions of 250 feet x 70 feet x 7 feet. The volume of Pond II is, therefore, approximately 122,500 cubic feet, or 916,364 gallons (one cubic foot = 7.48052 gallons).

The total dilution volume from the four raceways during one hour of flow, plus the volume of the two sedimentation ponds is 2,337,664 gallons [(67,325 gallons x 4 raceways) + (1,152,000 gallons x 1 Pond I) + (916,364 gallons x 1 Pond II)].

Flow and volume calculations use the total dilution volume of a one hour treatment at 2,337,664 gallons, or 8,849,021 liters (one gallon = 3.7854118 liters).

Total mass of Chloramine-T applied in milligrams = (# raceways treated) x (treatment time in hours) x (raceway flow in cfs) x (26,930 gallons/hour) x (3.7854118 liters/gallon) x (Chloramine-T concentration in mg/L).

The Discharger has specified to the Lahontan Water Board that the maximum number of raceways treated per day with Chloramine-T will be two.

The estimated final effluent concentration of Chloramine-T (in mg/L) = Total mass of Chloramine-T applied in milligrams / total dilution volume in liters. The estimated concentrations, based on the number of raceways treated, are summarized below:

Table F-13. Estimated Effluent Chloramine-T - Raceways

Number of Raceways Treated with Chloramine-T	Chloramine-T Treatment Conc. (mg/L)	Treatment Time in hours	Total Mass of Chloramine-T Applied (mg)	Total Dilution Volume in Liters	Estimated Final Effluent Chloramine-T
1	20	1	5,097,057	8,849,021	0.58
2	20	1	10,194,114	8,849,021	1.15
3	20	1	15291171	8,849,021	1.73
4	20	1	20388228	8,849,021	2.30

The estimated final effluent concentration of Chloramine-T at Discharge Points 001 and 002 is 0.58 mg/L if one raceway is treated and 1.15 mg/L if two raceways are treated.

Based on available information regarding Chloramine-T, if used at the Facility according to the reported treatment, Chloramine-T will not be discharged at levels that cause, have the reasonable potential to cause, or will contribute to an excursion of Basin Plan narrative water quality objectives for toxicity. Accordingly, this Order does not include WQBELs for Chloramine-T. However, use and monitoring of Chloramine-T must be reported as specified in the attached Monitoring and Reporting Program (Attachment E). The Lahontan Water Board will review this information, and other information as it becomes available, and this Order may be reopened to establish effluent limitations based on additional use and toxicity information in accordance with the reopener provision in section VI.C.1.b of this Order.

- (e) **Chloride and Electrical Conductivity.** Sodium chloride (salt) is used as needed at CAAP facilities as a fish cleansing agent to control parasites, fish disease, and as an osmoregulatory aid to reduce stress amongst the confined fish population. As discussed above, the Basin Plan contains numeric water quality objectives for TDS and chloride for Hot Creek downstream of the Facility at County Road. In addition, the Basin Plan contains a narrative objective for chemical constituents that states, "*Waters designated as AGR shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes).*" Water Quality for Agriculture, Food and Agriculture Organization of the United Nations-Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985), recommends that the conductivity level in waters used for agricultural irrigation not exceed 700 µmhos/cm (Agricultural Water Quality Goal) because it will reduce crop yield for sensitive

plants. There are no USEPA water quality criteria for the protection of aquatic organisms for electrical conductivity. Based on effluent TDS and chloride monitoring, the discharge of sodium chloride from the Facility will not cause, have a reasonable potential to cause, or contribute to an in-stream excursion of applicable water quality criteria or objectives. This Order requires effluent and receiving water monitoring for chloride and TDS, quarterly monitoring of effluent for electrical conductivity, and quarterly reporting on the use of sodium chloride. Additionally, because dissolved ions in water increase conductivity, monitoring of electrical conductivity is also required during sodium chloride use as specified in the Monitoring and Reporting Program (Attachment E).

- (f) **Chorulon®.** Chorulon® may be used by CAAP facilities. Chorulon® is injected into fish to aid in improving spawning function and is a NADA approved drug. Chorulon® (when injected into fish) is used in a manner that reduces the likelihood of direct discharge of this substance to waters of the United States or waters of the State, particularly when CAAP facilities implement BMPs as required by this Order. Accordingly, this Order does not include WQBELs for Chorulon®; however, this Order does require reporting of Chorulon® as specified in the attached Monitoring and Reporting Program (Attachment E).
- (g) **Epsom salt.** Epsom salt may be used by CAAP facilities. Epsom salt is used in medicated feed or fish pills to control internal parasites. Epsom salt (when used as a medicated feed or fish pills) is used in a manner that reduces the likelihood of direct discharge of this substance to waters of the United States or waters of the State, particularly when CAAP facilities implement BMPs as required by this Order. Accordingly, this Order does not include WQBELs for Epsom salt; however, this Order does require reporting of Epsom salt as specified in the attached Monitoring and Reporting Program (Attachment E).
- (h) **Ivermectin.** Ivermectin may be used by CAAP facilities. Ivermectin is injected into fish to control parasites. Ivermectin (when injected into fish) is used in a manner that reduces the likelihood of direct discharge of this substance to waters of the United States or waters of the State, particularly when CAAP facilities implement BMPs as required by this Order. Accordingly, this Order does not include WQBELs for Ivermectin; however, this Order does require reporting of Ivermectin as specified in the attached Monitoring and Reporting Program (Attachment E).
- (i) **MS-222®.** CAAP facilities use the anesthetic Tricaine methanesulfonate, commonly known as MS-222 (with trade names of Finquel® or Tricaine-S®). MS-222 has been approved by FDA for use as an anesthetic for *Salmonidae*. Results of toxicity tests using *C. dubia* where the test animals were exposed to MS-222 for two

hours, followed by three exchanges of control water to remove residual compound and then observed for 96 hours, determined the NOEC and Lowest Observed Effect Concentration (LOEC) to be 70 and 200 mg/L, respectively. MS-222 is generally used as a static treatment bath. The concentration is diluted well below 70 mg/L when discharged at CAAP facilities. Based on available information regarding MS-222 when used according to the reported treatment, MS-222 is not discharged at levels that cause, have the reasonable potential to cause, or will contribute to an excursion of Basin Plan narrative water quality objectives for toxicity. Accordingly, this Order does not include WQBELs for MS-222. However, use of MS-222 must be reported as specified in the attached Monitoring and Reporting Program (Attachment E).

- (j) **Ovaplant®.** Ovaplant® may be used by CAAP facilities. Ovaplant® is injected into fish to induce gamete maturation and may be used under an INAD exemption. Ovaplant® (when injected into fish) is used in a manner that reduces the likelihood of direct discharge of this substance to waters of the United States or waters of the State, particularly when CAAP facilities implement BMPs as required by this Order. Accordingly, this Order does not include WQBELs for Ovaplant®; however, this Order does require reporting of Ovaplant® as specified in the attached Monitoring and Reporting Program (Attachment E).
- (k) **Oxytetracycline Dihydrate and Oxytetracycline Hydrochloride.** Oxytetracycline dihydrate and oxytetracycline hydrochloride, also known by the brand names Terramycin 200® and Terramycin®, are antibiotics approved through FDA's NADA program for use in controlling ulcer disease, furunculosis, bacterial hemorrhagic septicemia, and pseudomonas disease in salmonids. CAAP facilities use the antibiotics during disease outbreaks. Oxytetracycline dihydrate and oxytetracycline hydrochloride are most commonly used at CAAP facilities as feed additives. However, oxytetracycline hydrochloride may also be used as an extra-label use under a veterinarian's prescription in an immersion bath of approximately six to eight hours in duration. Because oxytetracycline hydrochloride may be applied in an immersion bath for up to eight hours at a time, the Lahontan Water Board considered the results of acute and chronic aquatic life toxicity testing conducted by the Discharger's Pesticide Unit when determining whether WQBELs for oxytetracycline hydrochloride used in an immersion bath treatment were necessary. Results of acute toxicity tests using *C. dubia* showed a 96-hour No Observed Adverse Effects Level (NOAEL) of 40.4 mg/L. Results of chronic toxicity tests using *C. dubia* showed a seven day No Observed Effects Concentration (NOEC) for reproduction of 48 mg/L.

The information available regarding use and discharge of oxytetracycline hydrochloride at CAAP facilities indicates that it is discharged at levels well below the lowest NOEC and NOAEL. The Lahontan Water Board determined that oxytetracycline dihydrate, when used in feed, and oxytetracycline hydrochloride, when used in feed or in an immersion bath treatment, is not discharged at levels that cause, have the reasonable potential to cause, or contribute to an excursion of a narrative water quality objective for toxicity from the Basin Plan. Accordingly, this Order does not include effluent limitations for oxytetracycline dihydrate or oxytetracycline hydrochloride. However, the use of oxytetracycline dihydrate and oxytetracycline hydrochloride must be reported as specified in the attached Monitoring and Reporting Program (Attachment E). When used as an immersion bath, the estimated effluent concentrations of oxytetracycline hydrochloride must be reported as specified in the attached Monitoring and Reporting Program (Attachment E). The Lahontan Water Board will review this information, and other information as it becomes available and this Order may be reopened to establish effluent limitations based on additional use and toxicity information in accordance with the reopener provision in section VI.C.1.b of this Order.

- (I) **Penicillin-G.** Penicillin G is an antibiotic used for the control of bacterial infections and is administered as a six to eight hour immersion bath treatment. Penicillin G is not approved under FDA's NADA program and its extra-label use in aquaculture requires a veterinarian's prescription. Due to the length of treatment time, the Lahontan Water Board considered the results of acute and chronic aquatic life toxicity testing conducted by the Discharger's Pesticide Unit when determining whether WQBELs for Penicillin G were necessary in this Order. Results of acute toxicity tests using *C. dubia* showed a 96-hour NOAEL of 890 mg/L. Results of seven day chronic toxicity testing using *P. promelas* showed seven day NOEC for survival of 350 mg/L. Based on the information available Penicillin G is discharged at levels well below the lowest NOEC and NOAEL at CAAP facilities. Therefore, the Lahontan Water Board determined that Penicillin G, when used in an immersion bath treatment, is not discharged at levels that cause, have the reasonable potential to cause, or contribute to an excursion of a narrative water quality objective for toxicity from the Basin Plan. Accordingly, this Order does not include effluent limitations for Penicillin G. However, the use and estimated effluent concentrations of Penicillin G must be reported as specified in the attached Monitoring and Reporting Program (Attachment E). The Lahontan Water Board will review this information, and other information as it becomes available and this Order may be reopened to establish effluent limitations based on additional use and toxicity information

in accordance with the reopener provision in section VI.C.1.b of this Order.

- (m) **PVP Iodine.** PVP Iodine (Argentyne), is a solution composed of 10% PVP Iodine Complex and 90% inert ingredients. The FDA considers PVP Iodine an LRP drug for use in aquaculture. PVP Iodine is not currently used but may be used by the Discharger in the future as an egg disinfectant and fungicide. Because PVP Iodine typically is applied in short-term treatments of one hour or less, results of acute aquatic life toxicity testing conducted by the Discharger's Pesticide Unit were considered when determining whether WQBELs for PVP Iodine are necessary in this Order. Results of a single acute toxicity test with *C. dubia* showed a 96-hour NOAEL of 0.86 mg/L. This Order does not include WQBELs for PVP Iodine. However, use and monitoring of PVP Iodine must be reported as specified in the attached Monitoring and Reporting Program (Attachment E). The Lahontan Water Board will review this information, and other information as it becomes available, and this Order may be reopened to establish effluent limitations based on additional use and toxicity information in accordance with the reopener provision in section VI.C.1.b of this Order.
- (n) **SLICE.** The drug SLICE (Emamectin benzoate 0.2% Aquaculture premix) may be used by CAAP facilities to treat *Salmincola californiensis* (copepods) in finfish. SLICE must be used under an INAD exemption. SLICE is used in a manner that reduces the likelihood of direct discharge to waters of the United States or waters of the State, particularly when CAAP facilities implement BMPs as required by this Order. Medicated feed is prepared by coating SLICE Premix onto the surface of non-medicated fish feed pellets. Feeding occurs to ensure the food is consumed and then metabolized by the fish. This Order does not include WQBELs for SLICE; however, this Order requires reporting of this substance as specified in the attached Monitoring and Reporting Program (Attachment E).
- (o) **Vibrio Vaccine and Enteric Redmouth Bacterin.** The Discharger has not used Vibrio vaccine or enteric redmouth bacterin, but use may be required in the future to treat enteric redmouth disease. Enteric redmouth (or yersiniosis) bacterins are formulated from inactivated *Yersinia ruckeri* bacteria and are used as an immersion to help protect salmonid species from enteric redmouth disease caused by *Yersinia ruckeri*. These bacterins stimulate the fish's immune system to produce protective antibodies. Vibrio vaccine is used as an immersion and helps protect salmonid species from vibriosis disease caused by *Vibrio anguillarum* serotype I and *Vibrio ordalii*. Vibrio vaccine stimulates the fish's immune system to produce protective antibodies, helping the animal defend itself against vibriosis.

Vibrio vaccine and enteric redmouth bacterin are licensed for use by the U.S. Department of Agriculture's (USDA's) Center for Veterinary Biologics. According to USDA, most biologics leave no chemical residues in animals and most disease organisms do not develop resistance to the immune response by a veterinary biologic. Based upon available information regarding the use of these substances at CAAP facilities, the Lahontan Water Board does not believe that vibrio vaccine or enteric redmouth bacterins, when used according to label and veterinarian instructions, are discharged at levels that cause, have the reasonable potential to cause, or contribute to an excursion of Basin Plan narrative water quality objectives for toxicity. Accordingly, this Order does not include WQBELs for these substances; however, use of these substances must be reported as specified in the attached Monitoring and Reporting Program (Attachment E).

- (p) **Hydrogen Peroxide.** Hydrogen peroxide (35% H₂O₂) is used at the Facility for the control of external parasites as a raceway flush treatment at a concentration of 100 mg/L or less, for one hour. It may also be used in the hatcheries at a concentration of 500 to 1,000 mg/L for one hour. FDA approved hydrogen peroxide to control fungi on fish at all life stages, including eggs. Hydrogen peroxide may also be used to control bacterial gill disease in salmonids, and, through an INAD, external parasites. Hydrogen peroxide is a strong oxidizer that rapidly breaks down into water and oxygen; however, it exhibits toxicity to aquatic life during the oxidation process.

The Lahontan Water Board considered the results of acute aquatic life toxicity testing conducted by the Discharger's Pesticide Unit when determining whether WQBELs for hydrogen peroxide were necessary in this Order. Results of an acute toxicity test using *C. dubia* showed a 96-hour NOAEL of 1.3 mg/L based on continual constant exposure to hydrogen peroxide. When exposed to hydrogen peroxide for two hours followed by a triple lab water flush and normal test completion, *C. dubia* showed a 96-hour NOEC of 2 mg/L.

Effluent hydrogen peroxide data are not available to assess the impact of hydrogen peroxide use at the Facility. Therefore, the following information and calculations were used to determine the estimated effluent hydrogen peroxide concentration from flush treatments in the raceways at Discharge Points 001 and 002. The calculations assume the flow from the raceways mixes completely with the volume of water in the settling basin and is discharged with no further concentration, breakdown, or dilution of hydrogen peroxide.

Estimated Concentration When Applied in Raceways

With a flow of 2.5 cfs, the dilution volume of water from one rearing raceway after one hour is 67,325 gallons (1 cfs = 26,930 gallons per hour).

The Facility has two sedimentation ponds, Sedimentation Ponds I & II. Pond I has average dimensions of 275 feet x 80 feet x 7 feet. The volume of Pond I is, therefore approximately 154,000 cubic feet, or 1,152,000 gallons (one cubic foot = 7.48052 gallons).

Pond II has average dimensions of 250 feet x 70 feet x 7 feet. The volume of Pond II is, therefore, approximately 122,500 cubic feet, or 916,364 gallons (one cubic foot = 7.48052 gallons).

The total dilution volume from the four raceways during one hour of flow, plus the volume of the two sedimentation ponds is 2,337,664 gallons [(67,325 gallons x 4 raceways) + (1,152,000 gallons x 1 Pond I) + (916,364 gallons x 1 Pond II)].

Flow and volume calculations use the total dilution volume of a one hour treatment at 2,337,664 gallons, or 8,849,021 liters (one gallon = 3.7854118 liters).

The estimated final effluent concentration of hydrogen peroxide (in mg/L) = Total mass of hydrogen peroxide applied in milligrams / total dilution volume in liters. The estimated concentrations, based on the number of raceways treated, are summarized below:

Table F-14. Estimated Effluent Hydrogen Peroxide Concentrations - Raceways

Number of Raceways Treated with H ₂ O ₂	H ₂ O ₂ (35%) Treatment Conc. (mg/L)	H ₂ O ₂ Treatment Conc. (mg/L)	Treatment Time in hours	Total Mass of H ₂ O ₂ Applied (mg)	Total Dilution Volume in Liters	Estimated Final Effluent H ₂ O ₂
1	100	35	1	8,919,850	8,849,021	1.01
2	100	35	1	17,839,699	8,849,021	2.02
3	100	35	1	26,759,549	8,849,021	3.02
4	100	35	1	35,679,399	8,849,021	4.03

The estimated final effluent concentration of hydrogen peroxide at Discharge Points 001 and 002 is 1.01 mg/L if one raceway is treated, 2.02 mg/L if two raceways are treated, 3.02 mg/L if three raceways are treated and 4.03 mg/L if four raceways are treated. As shown in Table F-14 above, the use of hydrogen peroxide in more than one raceway would lead to an exceedance of the water quality objective of 1.3 mg/L. Actual concentrations are likely to be lower as the calculations assumed no breakdown of hydrogen peroxide. Since hydrogen peroxide is a strong oxidizer, concentrations are unlikely to persist for long periods.

This Order prohibits the Discharger from treating more than one raceway at a time with hydrogen peroxide. Therefore, hydrogen peroxide will not be discharged at levels that cause, have the reasonable potential to cause, or will contribute to an excursion of

Basin Plan narrative water quality objectives for toxicity. Accordingly, this Order does not include WQBELs for hydrogen peroxide. However, use and monitoring of hydrogen peroxide must be reported as specified in the attached Monitoring and Reporting Program (Attachment E). The Lahontan Water Board will review this information, and other information as it becomes available, and this Order may be reopened to establish effluent limitations based on additional use and toxicity information in accordance with the reopener provision in section VI.C.1.b of this Order. The Discharger may submit a request to apply hydrogen peroxide to more than one raceway at a time, in which case this Order will be reopened to modify the discharge prohibition and include effluent limitations for hydrogen peroxide.

II. Constituents with Reasonable Potential

(a) Total Nitrogen. As described in Section IV.C.2.b of this Fact Sheet, the Basin Plan contains numeric water quality objectives for Hot Creek (at County Road) for total nitrogen. These objectives are applied as annual average and 90th percentile objectives. To conduct the RPA for total nitrogen, the Lahontan Water Board evaluated the annual average and 90th percentile values of the effluent and receiving water. The tables below summarize the annual average and 90th percentile values of the effluent and receiving water and the applicable water quality objectives from Basin Plan Table 3-17. Based on monitoring data collected between 2014 and 2019, the maximum observed effluent annual average and downstream receiving water concentrations of total nitrogen consistently exceeded the applicable annual average water quality objective of 0.3 mg/L. However, the 90th percentile effluent and downstream receiving water concentrations of total nitrogen did not exceed the applicable 90th percentile water quality objective of 1.5 mg/L.

Therefore, total nitrogen in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the annual average Basin Plan objective. Accordingly, this Order contains a final average effluent limitation for total nitrogen. The effluent limitation is expressed as an annual average to directly correspond to the receiving water’s annual average objective.

Table F-15. Annual Average Total Nitrogen Concentrations

Year	M-001	M-002	M-003	M-004	R-001	R-002	Annual Average Water Quality Objective (mg/L)
2014	0.77*	0.81*	0.54*	0.62*	0.20	0.65*	0.3
2015	0.58*	0.49*	0.52*	0.49*	0.17	0.46*	

2016	0.58*	0.62*	0.39*	0.56*	0.27	0.31*
2017	0.84*	0.86*	0.66*	0.73*	0.27	0.50*
2018	0.85*	0.92*	0.36*	0.49*	0.30*	0.60*
2019	0.71*	0.71*	0.38*	0.43*	0.26	0.55*

Note: Values reported with asterisk (*) are greater than or equal to the water quality objective.

Table F-16. 90th Percentile Total Nitrogen Concentrations

Year	M-001	M-002	M-003	M-004	R-001	R-002	90 th Percentile Water Quality Objective (mg/L)
2014	1.05	1.05	0.73	0.81	0.41	0.93	1.5
2015	0.64	0.51	0.90	0.59	0.19	0.65	
2016	0.82	0.98	0.47	0.77	0.30	0.39	
2017	1.21	1.25	0.97	0.91	0.36	0.65	
2018	0.94	1.01	0.43	0.57	0.31	0.72	
2019	0.74	0.71	0.38	0.50	0.26	0.60	

(b) Potassium Permanganate. Potassium permanganate (also known by the trade name of Cairox™) is used at the Facility to control gill disease, bacteria, and parasites. Potassium permanganate has a low estimated lifetime in the environment, being readily converted by oxidizable materials to insoluble manganese dioxide (MnO₂). In non-reducing and nonacidic environments, MnO₂ is insoluble and has a very low bioaccumulative potential. In addition, potassium permanganate is rapidly converted to insoluble manganese dioxide under hatchery conditions. Potassium permanganate is a special category drug the FDA calls "regulatory action deferred."

Results of acute toxicity tests conducted by the Discharger's Pesticide Unit using *C. dubia* showed a 96-hour NOEC of 0.038 mg/L and a two-hour NOEC of 0.1975 mg/L, respectively, for potassium permanganate.

Potassium permanganate is used at the Facility as a flush or bath treatment of 2 mg/L or less for one hour. The following information and calculations were used to determine the estimated effluent potassium permanganate concentration from flush treatments in the raceways at Discharge Points 001 and 002. The calculations assume the flow from the raceways mixes completely with the volume of water in the settling basin and is discharged with no further concentration, breakdown, or dilution of potassium permanganate.

Estimated Concentration When Applied in Raceways

With a flow of 2.5 cfs, the dilution volume of water from one rearing raceway after one hour is 67,325 gallons (1 cfs = 26,930 gallons per hour).

The Facility has two sedimentation ponds, Sedimentation Ponds I & II. Pond I has average dimensions of 275 feet x 80 feet x 7 feet. The volume of Pond I is, therefore approximately 154,000 cubic feet, or 1,152,000 gallons (one cubic foot = 7.48052 gallons).

Pond II has average dimensions of 250 feet x 70 feet x 7 feet. The volume of Pond II is, therefore, approximately 122,500 cubic feet, or 916,364 gallons (one cubic foot = 7.48052 gallons).

The total dilution volume from the four raceways during one hour of flow, plus the volume of the two sedimentation ponds is 2,337,664 gallons [(67,325 gallons x 4 raceways) + (1,152,000 gallons x 1 Pond I) + (916,364 gallons x 1 Pond II)].

Flow and volume calculations use the total dilution volume of a one hour treatment at 2,337,664 gallons, or 8,849,021 liters (one gallon = 3.7854118 liters).

Total mass of potassium permanganate applied in milligrams = (# raceways treated) x (treatment time in hours) x (raceway flow in cfs) x (26,930 gallons/hour) x (3.7854118 liters/gallon) x (potassium permanganate concentration in mg/L).

The estimated final effluent concentration of potassium permanganate (in mg/L) = Total mass of potassium permanganate applied in milligrams / total dilution volume in liters. The estimated concentrations based on the number of raceways treated are summarized below:

Table F-17. Estimated Effluent Potassium Permanganate Concentrations - Raceways

Number of Raceways Treated with KMnO ₄	KMnO ₄ Treatment Conc. (mg/L)	Treatment Time in hours	Total Mass of KMnO ₄ Applied (mg)	Total Dilution Volume in Liters	Estimated Final Effluent KMnO ₄
1	2	1	509,706	8,849,021	0.058
2	2	1	1,019,411	8,849,021	0.115
3	2	1	1,529,117	8,849,021	0.173
4	2	1	2,038,823	8,849,021	0.230

The estimated final effluent concentration of potassium permanganate at Discharge Points 001 and 002 is 0.058 mg/L if one raceway is treated and 0.230 mg/L if four raceways are treated. As shown in the table above, the use of potassium permanganate could lead to an exceedance of the maximum daily water quality objective of 0.197 mg/L. Actual concentrations are likely to be lower as the calculations assumed no breakdown of potassium permanganate.

The MEC for potassium permanganate was 0.0903 mg/L based on samples collected between March 2014 and May 2019. Based on the effluent data, potassium permanganate may be discharged at levels that cause, or have the reasonable potential to cause or contribute to an excursion of Basin Plan narrative water quality objectives for toxicity. The Facility reported that it added potassium permanganate to Hatchery I, which discharges at Discharge Point 003, in April 2016 and Hatchery II, which discharges at Discharge Point 004, between February and March 2019, and the Facility may potentially add potassium permanganate to the Hatcheries in the future. Because operations at raceways and hatcheries generate similar type of waste and discharge wastewater to the same receiving water, the Lahontan Water Board has determined that Discharge Points 001, 002, 003, and 004 shall have identical effluent concentration limitations for potassium permanganate in the proposed Order. Accordingly, this Order includes WQBELs for potassium permanganate. A MDEL of 0.197 mg/L and an AMEL of 0.098 mg/L are calculated based on the 2-hour NOEC value and using the procedure in USEPA's TSD for calculating WQBELs as described in the section IV.C.4 of this Fact Sheet. These effluent limitations are more stringent than the effluent limitations for potassium permanganate included in Order No. R6V-2006-0027; however, an incorrect toxicity value was used in those calculations. The Lahontan Water Board has determined that it is more appropriate to use the 2-hour NOEC instead of the 96-hour NOAEL to calculate appropriate effluent limitations because the Discharger applies potassium permanganate for a one-hour period. Use and monitoring of potassium permanganate must be reported as specified in the attached Monitoring and Reporting Program (Attachment E).

- (c) **Formaldehyde (Formalin).** Formalin, a solution typically 37 percent by weight formaldehyde, (also known by the trade names Formalin-F®, Paracide-F®, PARASITE-S®) is FDA approved for use in CAAP facilities for controlling external protozoa and monogenetic trematodes on fish, and for controlling fungi of the family *Saprolegniaceae* in food-producing aquatic species. Formalin is used as a treatment for controlling external parasites in raceways where it would be discharged to surface waters. Formalin treatments are usually utilized as a batch or flush treatment which result in discharges from 3 to 8 hours. For control of other fungi, formalin may be used under an INAD exemption. Formalin can also be used as a "drip" treatment to control fungus on fish eggs at a concentration of 2,000 mg/L formalin, or less, for 15 minutes.

Formalin is used at the Facility in the hatcheries and may potentially be used at the raceways in the future. A portion of the hatchery water is dosed with formalin in troughs then mixed with the rest of the facility water. Typically, 850 mL of 37% formaldehyde solution is

added per trough for 1 hour. Normally two to eight troughs are used for dosing each time. The following information and calculations were used to determine the effluent formaldehyde concentration from treatment of fish eggs in Hatchery II at Discharge Point 004. The calculations assume that complete mixing occurs, and the wastewater is discharged with no further concentration, breakdown, or dilution of formaldehyde.

Estimated Concentration When Applied in Hatcheries

With a flow of 2.2 cfs, the dilution volume of water in Hatchery II is 59,246 gallons (1 cfs = 26,930 gallons per hour).

Data submitted by the Discharger shows that a maximum dose of 1,620 mL of 37% formalin was used between February 2014 and March 2019. Therefore, the number of troughs used is two (1,620 mL/850 mL = 1.9), and the number of dosing sequences is one, since a maximum of 8 troughs are used for dosing each time. The maximum amount of formalin applied in each one hour dosing sequence is 1,620 mL/hour.

The total mass of formaldehyde applied is 1,620 mL/hour x 1,000 mg/mL (density) x 37% = 599,400 mg.

Formaldehyde concentration in mg/L = Total mass of formaldehyde applied in milligrams / [(treatment time in hours) x (flow in cfs) x (26,930 gallons/hour) x (3.7854118 liters/gallon)]. The estimated concentration is summarized below:

Table F-18. Estimated Effluent Formaldehyde Concentration – Hatchery II

Maximum Formalin Usage (mL/hour)	Treatment Time in hours	Total Mass of Formaldehyde Applied (mg)	Flow (cfs)	Estimated Final Effluent Conc. (mg/L)
1,620	1	599,400	2.2	2.7

The State Water Board, Division of Drinking Water (DDW) does not have a maximum contaminant level (MCL) for formaldehyde; however, the historic DDW Drinking Water Action Level is listed as 0.1 mg/L based on calculation by standard risk assessment methods, with a Modifying Factor equal to ten. The USEPA Integrated Risk Information System (IRIS) lists a reference dose of 1.4 mg/L as a drinking water level. There are no recommended criteria for formaldehyde for the protection of aquatic life.

The Discharger’s Pesticide Unit conducted biotoxicity studies to determine the aquatic toxicity of formalin using *P. promelas* and *C. dubia*. A summary of the data submitted follows:

Table F-19. Aquatic Toxicity of Formalin¹

Species	7-day LC50 (mg/L)	LOEC (mg/L)	NOEC (mg/L)	LOAEL (mg/L)	NOAEL (mg/L)
<i>Ceriodaphnia dubia</i>	2.43	5.8 ² 1.3 ³	1.3 ² <1.3 ³	5.8	1.3
<i>Pimephales promelas</i>	23.3	9.09	2.28	--	--
<i>Selanastrum capricornutum</i>	<5.2	--	--	--	--

¹ From the Discharger’s laboratory report no. P-2251.1 dated June 30, 2001. Results as formaldehyde. Divide by 0.37 to obtain the equivalent formalin concentration.

² Survival

³ Reproduction

Since formalin treatments are usually utilized as a batch or flush treatment which result in discharges from three to eight hours, short-term tests were conducted with *C. dubia*, exposing the organisms for 2-hour and 8-hour periods, removing them from the chemical, and continuing the observation period for 7 days in clean water. The results were as follows:

Table F-20. Short-Term Aquatic Toxicity of Formalin¹

Species	7-day LC50 (mg/L)	LOAEL (mg/L)	NOAEL (mg/L)
<i>Ceriodaphnia dubia</i> – 2-hour exposure	73.65	46.3	20.7
<i>Ceriodaphnia dubia</i> – 8-hour exposure	13.99	15.3	6.7

¹ From the Discharger’s laboratory report no. P-2294.1 dated June 30, 2001. Results as formaldehyde. Divide by 0.37 to obtain the equivalent formalin concentration.

Results of both acute and chronic aquatic life toxicity testing conducted by the Discharger’s Pesticide Unit and the Basin Plan narrative toxicity objective were considered when determining whether WQBELs for formalin as formaldehyde were necessary. Results of seven day chronic toxicity tests indicated *C. dubia* was the most sensitive species, with a seven day NOEC value of 1.3 mg/L formaldehyde for survival and less than 1.3 mg/L for reproduction (the Lahontan Water Board used an NOEC of 1.3 mg/L). Acute toxicity tests conducted using *C. dubia* showed a 96-hour NOAEL of 1.3 mg/L formaldehyde. The additional acute toxicity tests with *C. dubia*, conducted using only an eight-hour exposure, resulted in a 96-hour NOAEL concentration of 6.7 mg/L formaldehyde.

The Lahontan Water Board has determined that if formalin is used, formaldehyde may be discharged at levels that cause, have the reasonable potential to cause, or contribute to an excursion of the Basin Plan narrative water quality objective. Accordingly, this Order includes WQBELs for formaldehyde. Although formaldehyde treatments are short in duration, exposure to formaldehyde in the receiving water as a result of discharges from the Facility may be long-term because of retention time in the settling pond and

potential application procedures (e.g., successive raceway treatments, drip treatments for eggs). Therefore, an AMEL of 0.65 mg/L and an MDEL of 1.3 mg/L are calculated based on the 96-hour NOAEL value and using the procedure in USEPA's March 1991 *Technical Support Document for Water Quality-based Toxics Control* (EPA/505/2-90-001) (TSD) for calculating WQBELs as described in the Section IV.C.4 of this Fact Sheet. These effluent limitations are carried over from Order R6V-2006-0027. Use and monitoring of formaldehyde must be reported as specified in the attached Monitoring and Reporting Program (Attachment E).

- (d) **pH.** The Basin Plan includes a water quality objective for pH, which states:

“In fresh waters with designated beneficial uses of COLD or WARM, changes in ambient pH levels shall not exceed 0.5 pH units. For all other waters of the Region, the pH shall not be depressed below 6.5 nor raised above 8.5.

The Regional Board recognizes that some waters of the Region may have natural pH levels outside of the 6.5 to 8.5 range. Compliance with the pH objective for these waters will be determined on a case-by-case basis.

Order No. R6V-2006-0027 contained effluent limitations for pH, requiring the discharge to have a pH of not less than 6.0 pH units nor greater than 9.0 pH units.

The Basin Plan's pH objective is an anti-degradation-based objective which requires that there be no change greater than 0.5 pH standard units in waters designated for the COLD and WARM beneficial uses. In the 12 upstream receiving water measurements collected by the Discharger between June 2014 and April 2019, the pH of Mammoth Creek naturally ranged from 7.1 to 8.4 standard units.

Based on the Basin Plan objective, this Order establishes effluent limitations for pH not to be depressed below 6.5 standard units nor raised above 8.5 standard units. Additionally, requiring the effluent pH to be substantially less than naturally-occurring background levels may result in adverse impacts to local fauna. Therefore, this Order includes effluent limitations for pH based on the respective site-specific water quality objectives established in the Basin Plan. The case-by-case basis in the Basin Plan is stated as sampling event by sampling event basis in the Order. In instances where the pH of an influent spring exceeds 8.5, this Order specifies that the Ph of the effluent at the corresponding discharge point shall not exceed the pH of the influent spring by more than 0.5 standard units. Similarly, when the pH of an influent spring is less than 6.5, then the pH of the effluent at the corresponding discharge location shall not

be less than the pH of the influent spring by more than 0.5 standard units.

4. **WQBEL Calculations**

a. **Pollutants That Did Not Demonstrate Reasonable Potential**

WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential or where it was undetermined whether WQBELs were necessary (e.g., where the reported detection levels are higher than the applicable criteria/objectives). However, monitoring during the term of this Order for those pollutants is required in accordance with Section 1.3 of the SIP. If concentrations of these constituents are found to have increased significantly, the Discharger will be required to investigate the sources of the increases. Remedial measures are required if the increases pose a threat to receiving water quality.

b. **Pollutants with Reasonable Potential**

This Order includes WQBELs for total nitrogen, potassium permanganate and formaldehyde at Discharge Points 001, 002, 003, and 004. WQBELs for potassium permanganate and formaldehyde were calculated based on water quality objectives and the procedures described below. For WQBELs based on Basin Plan objectives (i.e., total nitrogen and pH), the objectives are applied directly as the effluent limitations.

i. **Potassium Permanganate**

Effluent limitations for potassium permanganate were calculated based on the 2-hour NOEC value for *C. dubia* (0.1975 mg/L) using the procedure in USEPA's TSD assuming the following:

No in-stream dilution allowance

Coefficient of variation (CV) = 0.6 for the lognormal distribution of pollutant concentrations in effluent

Calculation of Aquatic Life AMEL and MDEL:

Effluent Characterization Allowance (ECA) based on NOAEL (acute toxicity) for *C. dubia*, with no dilution allowance:

$$ECA_{\text{acute}} = 0.1975 \text{ mg/L}$$

Long-Term Average concentration based on acute ECA:

$$LTA_{\text{acute}} = 0.1975 \text{ mg/L} \times 0.321 = 0.0634 \text{ mg/L (where } 0.321 = \text{acute ECA multiplier at 99\% occurrence probability and 99\% confidence)}$$

Average Monthly Effluent Limitation:

$$AMEL = LTA \times 1.55 \text{ (where } 1.55 = \text{AMEL multiplier at 95\% occurrence probability, 99\% confidence, and } n = 4)$$

$$AMEL_{\text{aquatic life}} = 0.0634 \text{ mg/L} \times 1.55 = 0.098 \text{ mg/L}$$

Maximum Daily Effluent Limitation:

MDEL = LTA x 3.11 (where 3.11 = MDEL multiplier at 99% occurrence probability and 99% confidence)

$$\text{MDEL}_{\text{aquatic life}} = 0.0634 \text{ mg/L} \times 3.11 = 0.197 \text{ mg/L}$$

Calculation of Human Health AMEL and MDEL:

This section is not applicable as the potassium permanganate limits are based on aquatic life criteria.

Determination of Final WQBELs:

The lower AMEL and MDEL based on aquatic life and human health is selected as the WQBEL.

AMEL _{aquatic life}	MDEL _{aquatic life}	AMEL _{human health}	MDEL _{human health}
0.098 mg/L	0.197 mg/L	Not Applicable	Not Applicable

The final AMEL of **0.098 mg/L** and MDEL of **0.197 mg/L** for potassium permanganate are based on limitations protective of aquatic life.

ii. Formaldehyde

Effluent limitations for formaldehyde were calculated based on the 96-hour NOAEL value for *C. dubia* (1.3 mg/L) using the procedure in USEPA’s TSD assuming the following:

No in-stream dilution allowance

Coefficient of variation (CV) = 0.6 for the lognormal distribution of pollutant concentrations in effluent

Calculation of Aquatic Life AMEL and MDEL:

Effluent Characterization Allowance (ECA) based on NOAEL (acute toxicity) for *C. dubia*, with no dilution allowance:

$$\text{ECA}_{\text{acute}} = 1.3 \text{ mg/L}$$

$$\text{ECA}_{\text{chronic}} = 1.3 \text{ mg/L}$$

Long-Term Average concentration based on acute ECA:

$$\text{LTA}_{\text{acute}} = 1.3 \text{ mg/L} \times 0.321 = 0.417 \text{ mg/L} \text{ (where 0.321 = acute ECA multiplier at 99\% occurrence probability and 99\% confidence)}$$

Long-Term Average concentration based on chronic ECA:

$$\text{LTA}_{\text{chronic}} = 1.3 \text{ mg/L} \times 0.527 = 0.685 \text{ mg/L} \text{ (where 0.527 = chronic ECA multiplier at 99\% occurrence probability and 99\% confidence)}$$

Most Limiting LTA concentration based on acute LTA:

$$\text{LTA} = 0.417 \text{ mg/L}$$

Average Monthly Effluent Limitation:

$$\text{AMEL} = \text{LTA} \times 1.55 \text{ (where 1.55 = AMEL multiplier at 95\% occurrence probability, 99\% confidence, and } n = 4)$$

$$AMEL_{\text{aquatic life}} = 0.417 \text{ mg/L} \times 1.55 = 0.65 \text{ mg/L}$$

Maximum Daily Effluent Limitation:

MDEL = LTA x 3.11 (where 3.11 = MDEL multiplier at 99% occurrence probability and 99% confidence)

$$MDEL_{\text{aquatic life}} = 0.417 \text{ mg/L} \times 3.11 = 1.3 \text{ mg/L}$$

Calculation of Human Health AMEL and MDEL:

This section is not applicable as the formaldehyde limits are based on aquatic life criteria.

Determination of Final WQBELs:

The lower AMEL and MDEL based on aquatic life and human health is selected as the WQBEL.

AMEL _{aquatic life}	MDEL _{aquatic life}	AMEL _{human health}	MDEL _{human health}
0.65 mg/L	1.3 mg/L	Not Applicable	Not Applicable

The final AMEL of **0.65 mg/L** and MDEL of **1.3 mg/L** for formaldehyde are based on limitations protective of aquatic life.

5. Whole Effluent Toxicity (WET)

The Basin Plan specifies a narrative objective for toxicity, requiring that "*All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration and/or other appropriate methods as specified by the Lahontan Water Board. (Bioassays, or biotoxicity testing, involves measuring the toxic effects of an effluent on specified organisms according to nationally approved protocols.) The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or when necessary, for other control water that is consistent with the requirements for "experimental water" as defined in Standard Methods for the Examination of Water and Wastewater (American Public Health Association, et al. 1992).

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

USEPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD) specifies two toxicity measurement techniques that can be employed in effluent characterization; the first is WET testing, and the second is chemical-specific toxicity analyses. WET testing is used when the toxic constituents in an effluent are not completely known; whereas chemical-specific analyses are used

when an effluent contains only one, or very few, well-known constituents. Due to the nature of operations and chemical treatments at the Facility, the effluent generally contains only one known chemical at any given a time. Based on a review of the Discharger's quarterly drug and chemical use reports between 2014 and 2019, the Discharger did not apply more than one aquaculture drug or chemical at a time within any calendar quarter, except on three occasions. Therefore, the Lahontan Water Board is using a chemical-specific approach to determine "reasonable potential" for discharges of aquaculture drugs and chemicals from this Facility.

Numeric water quality criteria or Basin Plan numeric objectives currently are not available for most of the aquaculture drugs and chemicals used by the Discharger or proposed for use at this facility. Therefore, the Lahontan Water Board used the narrative water quality objective for toxicity from the Basin Plan as a basis for determining "reasonable potential" for discharges of these drugs and chemicals. Furthermore, to address toxicity concerns from treatment with more than one drug or chemical at a time, this Order prohibits the application of more than one aquaculture drug or chemical to the raceways per treatment period. Therefore, the Lahontan Water Board is using a chemical-specific approach to determine "reasonable potential" for discharges of aquaculture drugs and chemicals. Compliance with the prohibition and chemical-specific effluent limitations will ensure that the discharge will not cause or contribute to an exceedance of the narrative toxicity objective in the receiving water. As such, it is not necessary to include an acute toxicity effluent limitation or require acute or chronic WET testing.

D. Final Effluent Limitation Considerations

1. Mass-based Effluent Limitations

Generally, mass-based effluent limitations ensure that proper treatment, and not dilution, are employed to comply with the final effluent concentration limitations. 40 C.F.R. section 122.45(f)(1) requires that all permit limitations, standards or prohibitions be expressed in terms of mass units except under the following conditions: (1) for pH, temperature, radiation or other pollutants that cannot appropriately be expressed by mass limitations; (2) when applicable standards or limitations are expressed in terms of other units of measure; or (3) if in establishing technology-based permit limitation on a case-by-case basis limitations based on mass are infeasible because the mass or pollutant cannot be related to a measure of production. This Order includes effluent limitations expressed in terms of concentration, as mass limitations are not necessary to protect the beneficial uses of the receiving water.

2. Anti-Backsliding Requirements

Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in Order No. R6V-2006-0027 with the exception of the nitrate

plus nitrite, TDS, copper, chloramine-T, hydrogen peroxide, pH, and flow effluent limitations.

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

As discussed above, the RPA results for nitrate plus nitrite suggest that the effluent does not consistently cause or contribute to an exceedance of the annual average or 90th percentile water quality objectives for nitrate plus nitrite. As shown in Table F-11, monitoring conducted between 2014 and 2019 found that the receiving water 90th percentile objective was not exceeded. As shown in Table F-12, monitoring conducted during the same five-year period shows that the receiving water exceeded the annual average nitrate plus nitrite water quality objective one time (in 2017), and then only by 0.08 mg/L. The 2017 monitoring data is from two sampling dates which does not provide a statistically significant dataset with which to evaluate compliance with the annual average water quality objective.

The downstream receiving water monitoring data from 2014 to 2019 on which the RPA was based constitutes updated information that was not available at the time Order No. R6V-2006-0027 was issued. In addition, all four springs providing water to the Facility have nitrate levels which are routinely higher than the effluent limits established in Order No. R6V-2006-0027 for nitrate plus nitrite. As described earlier in this Fact Sheet, some of the most significant pollutants discharged from CAAP facilities are solids from uneaten feed and fish feces that settle to the bottom of the raceways. These types of solids are primarily composed of organic matter including BOD, organic nitrogen, and organic phosphorus. Based on the type of waste discharged, a total nitrogen effluent limitation is more appropriate than a nitrate plus nitrite effluent limitation.

CWA section 402(o)(1) prohibits the establishment of less stringent WQBELs except in compliance with CWA section 303(d)(4). For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy.

Hot Creek is considered an attainment water for nitrate plus nitrite because the receiving water is not listed as impaired on the 303(d) list for this constituent. Notwithstanding the limited 2017 monitoring data, updated monitoring data demonstrates that the effluent does not cause or contribute to an exceedance of the applicable water quality criteria or objectives in the receiving water. The removal of WQBELs will not result in an increase in pollutant concentration or loading, a decrease in the level of treatment or control, or a reduction in water quality. As discussed in Section IV.D.3 of this Fact Sheet, removal of the effluent limitations for nitrate plus nitrite complies with federal and state antidegradation requirements. Thus, removal of the effluent limitations for nitrate plus nitrite meets the exception in CWA section 303(d)(4)(B).

Order No. R6V-2006-0027 established final effluent limitations for TDS. As shown in Table F-11 of this Fact Sheet, effluent data demonstrate that the discharge no longer demonstrates reasonable potential to cause or contribute to an exceedance of the water quality objectives.

Order No. R6V-2006-0027 contained final effluent limitations for copper based on the use of copper sulfate at the Facility. As discussed in section IV.C.3.c of this Fact Sheet, the use of copper sulfate products has been discontinued at all DFG hatcheries, therefore, effluent limitations and monitoring requirements for copper are not required in this Order.

Order No. R6V-2006-0027 contained final effluent limitations for Chloramine-T. As discussed in section IV.C.3.d.i.(e), the impact of Chloramine-T on the facility was determined using estimated effluent Chloramine-T concentrations compared to the 96-hour NOEC for *C. dubia*. The impact of Chloramine-T had been evaluated in Order No. R6V-2006-0027 through comparison of the estimated Chloramine-T concentration to the 48-hour NOEC for *Daphnia magna*, however, results of the Discharger's Pesticide Unit indicated the 96-hour NOEC for *C. dubia* to be a more appropriate method for evaluating impacts on the receiving water.

Order No. R6V-2006-0027 contained final effluent limitations for hydrogen peroxide. As discussed in section IV.C.3.d.i.(q) estimated effluent concentrations indicated that hydrogen peroxide, if used in only one raceway at a time, does not exhibit reasonable potential to cause or contribute to an exceedance of the water quality objectives. Accordingly, this Order contains a discharge prohibition prohibiting the use of hydrogen peroxide in more than one raceway at a time, so effluent limitations for hydrogen peroxide are not required in this Order.

The updated effluent data for TDS, use restrictions of copper sulfate at state fish hatcheries, updated biotoxicity testing results, and estimated effluent concentrations for hydrogen peroxide constitute new information, which permits the removal of effluent limitations consistent with CWA section 402(o)(2)(B). Therefore, the Order does not retain the effluent limitations for TDS, copper, Chloramine-T, and hydrogen peroxide.

Order No. R6V-2006-0027 included a final effluent limitation for pH specifying that the pH shall not be less than 6.0 standard units nor greater than 9.0 standard units. Order No. R6V-2006-0027 did not consider the Lahontan Water Board's Basin Plan in establishing pH limits. The Basin Plan states, "*In fresh waters with designated beneficial uses of COLD or WARM, changes in normal ambient pH levels shall not exceed 0.5 pH units. For all other waters of the Region, the pH shall not be depressed below 6.5 nor raised above 8.5.*" To be consistent with the water quality objective in the Basin Plan, this Order revises the effluent limitation minimum and maximum effluent limitations to 6.5 to 8.5 standard units and further revises the maximum effluent limitation to limit the discharge to no more than 0.5 standard units over or under the influent spring pH in instances where the influent spring pH exceeds 8.5 or is less than 6.5. This revision will allow for the discharge of increased and decreased pH levels over those allowed in Order R6V-2006-0027 in instances where the influent spring pH exceeds 8.5 or is less

than 6.5 (e.g., when influent spring is measured at 8.6 standard units, the applicable effluent limitation at the corresponding discharge point is 9.1 standard units, which is greater than the existing pH maximum effluent limitation of 9.0 standard units). Nevertheless, the revised effluent limitation will be more protective of the receiving water, as discharges with pH levels substantially less than naturally occurring background levels may result in adverse impacts to local fauna.

CWA section 402(o)(1) prohibits the establishment of less stringent WQBELs “except in compliance with Section 303(d)(4).” For waters in attainment, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy. Hot Creek is considered to be in attainment of standards for pH because the receiving water is not listed as impaired on the 303(d) list for this constituent¹. As discussed in section IV.D.4, below, relaxation of the effluent limits complies with federal and state antidegradation requirements. Thus, relaxation of the effluent limitations for pH from Order R6V-2006-0027 meets the exception in CWA section 303(d)(4)(B).

Order No. R6V-2006-0027 included effluent limitations for flow at Discharge Points 001, 002, 003, and 004. Inflow to the Facility is not regulated and is based on the natural flow of the Hot Creek Springs, so inclusion of flow limitations in the Order is believed to have been a technical mistake, which permits the relaxation of effluent limitations consistent with CWA section 402(o)(2)(B). Therefore, removal of the effluent limitations for flow meets the exception in CWA section 402(o)(2)(B).

3. Antidegradation Policies

Section 131.12 requires that the state water quality standards include an anti-degradation policy consistent with the federal policy. The State Water Board established California’s antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Lahontan Water Board’s Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies.

This Order does not provide for an increase in the permitted design flow or allow for an increase in mass or concentration of any pollutant. Therefore, the issuance of this Order is consistent with the State’s antidegradation policy.

This Order removes effluent limitations for nitrate plus nitrite based on updated monitoring data demonstrating that the effluent does not cause or contribute to an exceedance of the applicable water quality objectives in the receiving water. The removal of WQBELs for nitrate plus nitrite will not result in an increase in pollutant concentration or loading, a decrease in the level of treatment or control, or a

¹ “The exceptions in Section 303(d)(4) address both waters in attainment with water quality standards and those not in attainment, i.e., waters on the section 303(d) impaired waters list.” Reference: State Water Board Order WQ 2008-0006, Berry Petroleum Company, Poso Creek/McVan Facility.

reduction of water quality. Therefore, the Lahontan Water Board finds that the removal of the effluent limitations will not result in an increase in pollutants or any additional degradation of the receiving water. Thus, the removal of effluent limitations is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Resources Control Board Resolution No. 68-16.

This Order removes effluent limitations for flow, which were established in Order No. R6-2006-0027. Inclusion of flow limitations in the Order is believed to have been a technical mistake, as the Order does not contain rationale for their establishment. Flow into the Facility is not regulated and is based on the natural flow of the Hot Creek Springs. Accordingly, removing the flow limitations will not have an effect on the natural variation in spring flows, which has occurred throughout the history of the facility. Additionally, removal of these effluent limits will not result in a decrease in the level of treatment or control or a reduction of water quality.

This Order also changes the effluent limitations for pH to be consistent with the Basin Plan objective for pH. The change of WQBELs for pH will not result in a decrease in the level of treatment or control or a reduction of water quality. Therefore, the Lahontan Water Board finds that the change of the effluent limitations does not result in any additional degradation of the receiving water. Thus, the effluent limitation is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16.

4. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on settleable solids and TSS from Discharge Points 001, 002, 003, and 004. Restrictions on settleable solids and TSS are discussed in section IV.B of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

This Order includes WQBELs for total nitrogen, formaldehyde, potassium permanganate, and pH at Discharge Points 001, 002, 003, and 004. WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. The scientific procedures for calculating the WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

**Table F-21. Water Quality-Based Effluent Limitations
Discharge Points 001, 002, 003, and 004**

Parameter	Units	Average Monthly	Maximum Daily	Annual Average	Instantaneous Minimum	Instantaneous Maximum
pH	standard units	--	--	--	6.5 ¹	8.5 ¹
Nitrogen, Total (as N)	mg/L	--	--	0.3 ²	--	1.5
Formaldehyde	mg/L	0.65	1.3	--	--	--
Potassium Permanganate	mg/L	0.098	0.197	--	--	--

¹ The pH of discharges to Discharge Points 001, 002, 003, and 004 with compliance measured at Monitoring Locations EFF-001, EFF-002, EFF-003, and EFF-004 as described in the Monitoring and Reporting Program (Attachment E), shall not be depressed below 6.5 standard units nor raised above 8.5 standard units. However, when the pH of an influent spring exceeds 8.5 standard units, the pH of the effluent at the corresponding discharge location shall not exceed the pH of the influent spring by more than 0.5 standard units. When the pH of an influent spring is less than 6.5 standard units, then the pH of the effluent at the corresponding discharge location shall not be less than the pH of the influent spring by more than 0.5 standard units.

² Arithmetic mean of all data collected during a calendar year.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

The receiving water limitations in this Order are based upon the water quality objectives contained in the Basin Plan.

A. Surface Water

The Hot Creek Hatchery’s influent water is provided by four natural springs. The Facility uses the water for fish hatchery operations and discharges it to Hot Creek and to a tributary of Hot Creek. The discharge includes wastes from fish hatchery operations. During storm events, constituents in storm water may also be present in the discharge. The Discharger is responsible for constituents contributed by groundwater pumping, hatchery operations, and hatchery management.

The Basin Plan contains numeric and narrative water quality objectives applicable to all surface waters within the Lahontan Region. Water quality objectives include an objective to maintain the high-quality waters pursuant to federal regulations (section 131.12) and State Water Board Resolution No. 68-16. Additionally, *Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Bacteria Provisions and a Water Quality Standards Variance Policy* (Statewide Bacteria Provisions) contains numeric water quality objectives for bacteria in waters with the Water Contact Recreation (REC-1) beneficial use. Surface water limitations in this Order are included to ensure protection of beneficial uses of the receiving waters (see section V of this Order).

The narrative objective for chemical constituents in the Basin Plan states that “*Waters shall not contain concentrations of chemicals that adversely affect the water beneficial*

uses.” The receiving waters collectively have the following beneficial uses: Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Industrial Service Supply (IND); Groundwater Recharge (GWR); REC-1; Non-contact Water Recreation (REC-2); Commercial and Sport Fishing (COMM); Aquaculture (AQUA); Cold Freshwater Habitat (COLD); Wildlife Habitat (WILD); Rare, Threatened, or Endangered Species (RARE); Migration of Aquatic Organisms (MIGR); and Spawning, Reproduction and Development (SPWN).

B. Groundwater

The Basin Plan contains numeric and narrative water quality objectives applicable to all groundwaters within the Lahontan Region. Groundwater quality objectives include an objective to maintain the high quality waters pursuant to State Water Board Resolution No. 68-16. The Long Valley Ground Water Basin has the following beneficial uses: Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Industrial Service Supply (IND); and Freshwater Replenishment (FRSH. The prohibitions and special provisions incorporated into this Order are sufficient to ensure and protect beneficial uses of groundwater.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the permit. Section 123.25(a)(12) of 40 C.F.R. allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

These provisions are based on 40 C.F.R. section 122.62 and allow modification of this Order and its effluent limitations as necessary in response to updated water quality objectives, regulations, or other new relevant information that may be established in the future and other circumstances as allowed by law.

2. Special Studies and Additional Monitoring Requirements

- a. Chemical and Aquaculture Drug Use.** Prior to using any new chemical or aquaculture drug at the Facility, the Discharger is required to submit to the Lahontan Water Board supplemental information (e.g., name, purpose,

amount to be used) and toxicity testing data for the new chemical or aquaculture drug as specified in Section VI.C.2.a of this Order. These reporting and toxicity testing requirements are needed for the Lahontan Water Board to determine if the discharge of a new drug or chemical by the Facility has reasonable potential to cause or contribute to an in-stream excursion above any chemical-specific water quality criteria, narrative water quality objective for chemical constituents from the Basin Plan, or narrative water quality objective for toxicity from the Basin Plan.

- b. Reporting of Unanticipated Discharges.** This Order requires the Discharger to provide an oral report within 24 hours and a written report within seven days of: (1) discovery of the failure in, or damage to, the settling pond or an aquatic animal containment system resulting in an unanticipated material discharge of pollutants to waters of the United States or State; and (2) a spill of drugs, chemicals, pesticides, or feed that results in a discharge to waters of the United States or State.
- 3. Best Management Practices and Pollution Prevention**
 - a. Best Management Practices (BMP) Plan – Aquaculture Operations.** BMP plan requirements are established based on requirements in the ELGs for the Concentrated Aquatic Animal Production Point Source Category at 40 C.F.R. part 451. CAAP facilities that are subject to the federal ELGs are required to develop and maintain a BMP plan that addresses the following requirements: solids control, material storage, structural maintenance, recordkeeping, and training. The Discharger must make the BMP plan available to the Lahontan Water Board upon request and submit certification that the BMP plan has been developed.
 - b. Storm Water Pollution Prevention Plan (SWPPP).** This Order requires the Discharger to develop and implement a SWPPP, in accordance with Attachment I to the Order that describes site-specific BMPs for minimizing contamination of storm water runoff and for preventing contaminated storm water runoff from being discharged directly to waters of the State. Storm water runoff at the Facility has the potential to come in contact with pollutants associated with aquaculture activities such as chemicals, fuel, waste oil, vehicle wash water, and other storage of other materials.
- 4. Construction, Operation, and Maintenance Specifications**
 - a. Solid waste disposal provisions in this Order are based on the requirements of California Code of Regulations, title 27 and prevention of unauthorized discharge of solid wastes into waters of the United States or waters of the State. Other construction, operation, and maintenance specifications are required to prevent other unauthorized discharges to waters of the United States or waters of the State.
- 5. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable**
- 6. Other Special Provisions – Not Applicable**
- 7. Compliance Schedules – Not Applicable**

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

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

Water Code section 13267 specifies that the burden, including costs, of technical or monitoring program reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. The Lahontan Water Board finds that the costs associated with the monitoring and reporting requirements in this Order as they are necessary to characterize the influent, effluent, and receiving water quality and determine compliance with applicable effluent and receiving water limitations. In accordance with State Water Board Resolution No. 2013-0029, the Lahontan Water Board considered removal of overlapping monitoring requirements, reducing the monitoring frequency for parameters consistently in compliance, surrogate sampling, and eliminating unnecessary reports when renewing this Order.

A. Influent Monitoring

Influent monitoring of AB Spring, CD Spring, Hatchery I Spring, and Hatchery II Spring is required to collect data on the characteristics of the background upstream receiving water and to assess compliance with effluent limitations.

1. Monitoring Locations INF-001, INF-002, INF-001/002, INF-003, and INF-004

- a. This Order no longer requires water quality monitoring at locations INF-001 (AB Spring) and INF-002 (CD Spring), except for the Priority Pollutant Metals monitoring. It can be difficult to collect a representative sample at these locations due to floating algae and other vegetation. However, because the water from the two springs is mixed and enters a headbox prior to discharge to the four raceways, a sample collected from the headbox is more representative and reproducible. Therefore, influent water quality from the AB and CD Springs will be determined at the new influent monitoring point INF-001/002, which is at the headbox prior to the raceways. The influent flow from each spring will still be measured at historical monitoring points INF-001 and INF-002. Because there are USGS continuous flow monitoring stations at both INF-001 and INF-002, the Discharger may choose to use the flows reported by USGS instead of performing its own flow measurements. If this is the case, then the monitoring reports shall clearly state that USGS flow data is being reported.
- b. The monitoring frequency for dissolved oxygen and pH from Order No. R6V-2006-0027 is retained in this Order.
- c. The frequency of influent monitoring for pH and total suspended solids (TSS) has been increased from twice per year to monthly. This is because both the pH and the TSS effluent limits require a comparison between the

concentration of the influent and the concentration of the effluent. Similarly, the frequency of influent monitoring for settleable solids and turbidity has been increased to quarterly, to allow a comparison between the influent and the effluent concentrations.

- d. Monitoring for temperature and orthophosphate has been deleted, while the frequency of influent monitoring for nitrate + nitrite has been increased to quarterly and total nitrogen has been increased to monthly.

B. Effluent Monitoring

Pursuant to the requirements of 40 C.F.R. section 122.44(i)(2), effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, and to assess the impacts of the discharge on the receiving water and groundwater.

1. Monitoring Locations EFF-001, EFF-002, EFF-003, and EFF-004

- a. Operations at raceways and hatcheries generate similar type of waste, which discharge to the same receiving water. The characteristics of the wastewater discharged through Discharge Points 001, 002, 003, and 004 are similar, therefore the Lahontan Water Board has determined that effluent limitations will apply to all four Discharge Points and monitoring will be the same at all four Monitoring Locations.
- b. The Discharger is evaluating whether to combine Settling Ponds I and II (thereby eliminating Discharge Point 001), or whether to combine Settling Ponds I, II, and the McBurney Pond (thereby eliminating Discharge Points 001 and 002). This Order allows the consolidation; if there is no discharge from a discharge point for an entire month, then there is no need to collect an effluent sample from that point. If this is the case, then the monitoring report shall clearly state that there was no discharge and an effluent sample was not collected from the specific point.
- c. Effluent monitoring frequencies and sample types for Monitoring Locations EFF-001, EFF-002, EFF-003, and EFF-004 for all parameters with effluent limitations (i.e., TSS, pH, total suspended solids, potassium permanganate, and settleable solids) have been retained from Order No. R6V-2006-0027 to determine compliance with effluent limitations for these parameters.
- d. Effluent monitoring frequencies and sample type for Chloramine-T, dissolved oxygen, electrical conductivity, formaldehyde, hydrogen peroxide, PVP Iodine, temperature, and turbidity (i.e., parameters without limitations) have been retained from Order No. R6V-2006-0027, to assess the quality of the effluent for these pollutants.
- e. The monitoring frequency for boron, chloride, sulfate, and total dissolved solids has been reduced to once per permit term, as these parameters do not have a reasonable potential to exceed water quality objectives in the receiving water.
- f. The Discharger uses potassium permanganate to control gill disease, bacteria, and parasites. Total recoverable manganese data is required for

potassium permanganate analyses and calculations and total hardness data is necessary to determine the solubility of manganese. Therefore, monitoring for total recoverable manganese and hardness is established in this Order on a quarterly basis when potassium permanganate is used. This monitoring data will help to establish a correlation between potassium permanganate use with total recoverable manganese and hardness effluent concentrations.

- g. Monitoring data collected over the previous Order term for total nitrogen demonstrates reasonable potential to exceed water quality criteria for Hot Creek. Therefore, new effluent limitations for total nitrogen are established in the Order and monitoring requirements for total nitrogen have been increased from semi-annually to monthly to determine compliance with the effluent limitations.
- h. Monitoring data collected over the term of Order R6V-2006-0027 for Isoeugenol, Oxytetracycline HCl, Penicillin G Potassium, and MS-222 did not demonstrate reasonable potential to exceed water quality objectives/criteria and therefore the requirement to monitor for these constituents has been discontinued. However, the Discharger must continue to report when these constituents are used on the fish.
- i. Order No. R6V-2006-0027 included monitoring requirements for copper in the effluent based on the potential use of copper sulfate at the Facility. On January 11, 2010, the Director of Fish and Wildlife certified that "*the use of copper sulfate products has been discontinued at all DFG hatcheries.*" Therefore, monitoring requirements for copper at Monitoring Locations EFF-001, EFF-002, EFF-003, and EFF-004 are discontinued in this Order.
- j. Whole Effluent Toxicity Testing Requirements – Not Applicable

C. Receiving Water Monitoring

1. Surface Water

This Order requires receiving water monitoring upstream and downstream of discharges at Monitoring Locations RSW-001 and RSW-002, respectively. Monitoring Location RSW-001 is representative of upstream water quality in Mammoth Creek 200 feet upstream of its confluence with Hot Creek, prior to the discharge entering Hot Creek. Monitoring location RSW-002 is representative of downstream water quality approximately 50 feet downstream of the location where the tributary receiving discharge from Discharge Point 004 meets Hot Creek. This Order does not allow for a mixing zone and all effluent limitations must be met at the point of discharge.

To ensure that beneficial uses of waters of the State are protected, the Basin Plan lists numeric objectives that are applicable to: all surface waters, all ground waters, specific receiving surface waters, and specific ground waters. Water body specific objectives apply upstream to waters that are tributary to the water body specified for the numeric objective. This is called the "tributary rule." Numeric objectives that apply to Hot Creek include numeric objectives that are common to all waters in the Lahontan Region and numeric objectives that are applicable to Hot Creek (at County Road). These receiving water limitations serve to protect

the beneficial uses designated for the receiving waters that will be impacted by the discharge. Order No. R6V-2006-0027 includes upstream receiving water monitoring requirements for flow, pH, TSS, dissolved oxygen, nitrate plus nitrite, orthophosphate, TDS, total nitrogen, settleable solids, temperature and turbidity to assess background upstream receiving water conditions. Monitoring requirements and frequencies for these parameters are retained in this Order, with the addition of boron, chloride, fluoride, and sulfate once per permit term and the removal of orthophosphate

To demonstrate compliance with receiving water limitations established in this Order and to assess the impact of the discharge on the beneficial uses of the receiving water and receiving water objectives, downstream receiving water monitoring requirements and frequencies for flow, TSS, dissolved oxygen, formaldehyde, nitrate plus nitrite, total nitrogen, settleable solids, temperature, and turbidity required in Order No. R6V-2006-0027 are retained in this Order. The monitoring for boron, chloride, fluoride, sulfate, and total dissolved solids has been reduced to once per permit term since these parameters do not have a reasonable potential to exceed water quality objectives in the receiving water. Monitoring for pH has been increased from once per quarter to monthly.

Order No. R6V-2006-0027 included monitoring requirements for copper in the downstream receiving water based on the potential use of copper sulfate at the Facility. On January 11, 2010, the Director of Fish and Wildlife certified that *"the use of copper sulfate products has been discontinued at all DFG hatcheries."* Therefore, receiving water monitoring requirements for copper are discontinued in this Order.

2. **Sediment – Not Applicable**
3. **Groundwater – Not Applicable**

D. Other Monitoring Requirements

1. Quarterly Drug and Chemical Use Report

Quarterly reporting of drug and chemical use is required in this Order. The ELGs at 40 C.F.R. part 451 require reporting on the use of drugs, disinfectants, and other chemicals in discharges authorized by NPDES permits. To verify that aquaculture drugs and chemicals are applied at levels that will not cause or contribute to an exceedance of water quality objectives, this Order requires the Discharger to calculate and report the estimated effluent concentrations of drugs and chemicals applied directly to water. Reporting of the estimated effluent concentration is required whenever the drug or chemical is used, even if an effluent sample has been collected.

2. Priority Pollutant Metal Monitoring

Potential discharge of priority pollutants is based on the probability of the pollutants being present in the natural springs and from data collected from CAAP facilities. Data compiled from CAAP facilities, local drinking water wells and the State Water Board's Groundwater Ambient Monitoring Association (GAMA) database were used to determine the potential for metals and other priority pollutants to occur. Accordingly, the Lahontan Water Board requires

sampling and analysis of the influent (Monitoring Locations INF-001, INF-002, INF-003, and INF-004), effluent (Monitoring Locations EFF-001, EFF-002, EFF-003, and EFF-004), and upstream receiving water (Monitoring Location RSW-001) for priority pollutants listed in Attachment J at least once per permit cycle. The samples shall be analyzed for priority pollutants in the year 2023 and reported to the Water Board no later than February 1, 2024. (Refer to Attachment J for the specific monitoring requirements.) In order to ensure that the priority pollutant metal monitoring meet the specifications of this Order, this Order requires the Discharger to submit a Priority Pollutant Metal Monitoring Plan outlining reporting levels (RLs), method detection limits (MDLs), and analytical methods. The plan shall also identify the contract laboratory or laboratories selected to conduct the monitoring and demonstrate that they are ELAP-certified and can conduct the analysis within the holding times specified in the approved methods in 40 C.F.R. part 136.

3. Feeding and Production Reporting

This Order requires annual reporting of monthly food usage and annual production of aquatic animals.

4. Annual Best Management Practices (BMP) Plan and Storm Water Pollution Prevention Plan (SWPPP) Reporting

This Order requires annual certification that the BMP Plan and SWPPP meet the requirements of this Order and are being implemented as written.

5. Bioassessment Monitoring

This Order requires bioassessment monitoring once every 5 years to characterize the impacts of Facility operations on aquatic life uses in the receiving waters.

6. Visual Observations

The Order requires visual monitoring at Monitoring Locations RSW-001 and RSW-002 to determine compliance with Receiving Water Limitations V.A.2.f.h.j, and p.

7. Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program

Under the authority of section 308 of the CWA (33 U.S.C. § 1318), USEPA requires all dischargers under the NPDES Program to participate in the annual DMR-QA Study Program, including all minor dischargers beginning in 2017. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Discharger can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or (2) Per the waiver issued by USEPA to the State Water Board, the Discharger can submit the results of the most recent Water Pollution Performance Evaluation Study from its own laboratories or its contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory's ability to analyze wastewater samples to produce quality data that ensure the integrity of the

NPDES Program. The Discharger shall ensure that the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to USEPA's DMR-QA Coordinator and Quality Assurance Manager.

VIII. PUBLIC PARTICIPATION

The Lahontan Water Board has considered the issuance of this WDR that will serve as an NPDES permit for the Hot Creek Fish Hatchery. As a step in the WDR adoption process, the Lahontan Water Board staff has developed a tentative and proposed WDR and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Parties

The Lahontan Water Board notified the Discharger and interested agencies and persons of its intent to prescribe a WDR for the discharge and provided an opportunity to submit written comments and recommendations. Tentative WDRs were sent to the Discharger and known interested parties on December 21, 2020. Notification was also provided by posting on the Lahontan Water Board's website on January 8, 2021 and posting to the general Lyris list on January 20, 2021.

The public had access to the agenda and any changes in dates and locations through the Lahontan Water Board's website at: <http://www.waterboards.ca.gov/lahontan>

B. Written Comments

Interested persons were invited to submit written comments concerning the tentative and proposed WDR as provided through the notification process. Comments were due either in person or by mail to the Executive Officer at the Lahontan Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Lahontan Water Board, the written comments were due at the Lahontan Water Board office by 5:00 p.m. on January 26, 2021.

C. Public Hearing Opportunity

The Lahontan Water Board held a public meeting and provided an opportunity for interested parties to testify in a public hearing on the proposed WDR during its regular Board meeting on the following date and time and at the following location:

Date: March 10/11, 2021
Time: 9:00 a.m.
Location: Video and Teleconference only

Interested persons were invited to attend. At the public meeting, the Lahontan Water Board heard any testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

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

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

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

E. Information and Copying

The ROWD, draft Order, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Lahontan Water Board by calling (530) 542-5400.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDR and NPDES permit should contact the Lahontan Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Robert Tucker at (530) 542-5467.

ATTACHMENT G – AQUACULTURE DRUGS AND CHEMICALS APPROVED FOR USE

Drug or Chemical	Purpose of Application	Expected Method(s) of Application or Treatment
Acetic acid	Control of external parasites.	Flush: 1.5 to 2.2 gallons of glacial acetic acid added as a bolus to top of raceway. Gives a treatment of level of approximately 335 to 500 ppm acetic acid. Bath: used at a rate of 500 to 2,000 ppm for 1 to 10 minutes.
Amoxicillin trihydrate	Control and prevention of external and systemic bacterial infections).	Injected intraperitoneally: into broodstock twice a week, prior to spawning, at a dose of 40 mg/kg.
Carbon Dioxide	Anesthetic	Bath: bubbled in water. Usually used in small volumes of water.
Chloramine-T. (Halamide Aqua)	Control of external gill bacteria.	Flush or bath: concentration of 12-20 mg/L for one hour daily or every other day for 3 treatments or as prescribed.
Chorulon® - Chorionic Gonadotropin	Aid in improving spawning function.	Intramuscular injection: Males: 50-510 IU/lb, Females: 67-1,816 IU/lb, inject up to three doses; not to exceed 25,000 IU in fish for human consumption.
Enteric Redmouth (ERM) Vaccine	Prevent Redmouth disease.	Dip: Vaccine dumped after use. Not surface discharged.
Epsom Salt (Magnesium Sulfate)	Control internal parasites.	Feed: used in “medicated” feed or fish pills at a rate of 100 mg/kg of fish or top coated onto feed at 3% (30 g/kg) for 3 days.
Erythromycin	Control and prevention of external and systemic bacterial infections.	Injected intraperitoneally: at a rate of 40 mg/kg, at 30-day intervals or as prescribed. Feed: used in medicated feed or fish pills at a rate of 100 mg or less of erythromycin per kilogram of fish or as prescribed.
Florfenicol (Aquaflor®)	Control and prevention of external and systemic bacterial infections.	Medicated Feed: 10-15 mg/kg of fish for 10 consecutive days.
Formalin (37% formaldehyde solution)	Control of external parasites. Fungus control on fish eggs.	Bath: Low dose - used at a concentration of 25 ppm of formalin up to 8 hours. High dose - used at a concentration of 50 to 250 ppm formalin for one hour and repeat in 5 to 10 days if needed, or as prescribed. Eggs: used at a concentration of 2,000 ppm formalin, or less, for 15 minutes, or as prescribed.

Drug or Chemical	Purpose of Application	Expected Method(s) of Application or Treatment
Hydrogen peroxide (35% H ₂ O ₂)	Control of external parasites.	Flush: used at a rate of 100 ppm, or less, for 45 minutes to 1 hour. Eggs: 500-100 mg/L in continuous flow system once daily on consecutive or alternative days until hatch occurs
Ivermectin	Control of parasites.	Injected intramuscularly: (0.1 mg/kg) once a week up to 2 injections, or as prescribed.
MS-222 / tricaine methanesulfonate (Finquel®, Tricaine-S®)	Anesthetic or euthanasia.	Bath: used at a concentration of 10-1,000 mg/L, usually in a small volume of water and timed to effect.
Ovaplant® Salmon Gonadotropin-releasing hormone analogue (sGnRHa)	Induce gamete maturation.	Dorsal injection pellet-implant: 10 - 75 µg sGnRHa per kilogram (kg) body weight. Maximum 150 µg sGnRHa per kg body weight in certain situations involving very small brood fish (e.g., fish <1 kg bw), or as prescribed.
Oxytetracycline dihydrate (Terramycin® 200)	Control and prevention of external and systemic bacterial infections.	Additive to feed: 3.75 g/100 lbs of fish/day for 10 consecutive days.
Oxytetracycline HCl	Control and prevention of external and systemic bacterial infections).	Bath: used at a concentration of 100 ppm or less for up to 8 hours and up to three treatment days, or as prescribed.
Penicillin G potassium	Control and prevention of external and systemic bacterial infections.	Bath: used in tanks for 6-8 hours at a concentration of up to 150 IU/ml for up to three treatment days, or as prescribed.
Potassium Permanganate (Cairox™)	Control of external parasites and bacteria.	Flush or Bath: up to 2 ppm for one hour and up to three consecutive daily treatments.
PVP Iodine	Disinfect and control pathogens on fish eggs.	Bath: used at a concentration of 100 mg/L iodine for 10 to 30 minutes.
SLICE (emamectin benzoate;0.2% aquaculture premix)	Control of copepods.	Medicated feed: 50 µg emamectin benzoate/kg of fish for seven consecutive days.
Sodium bicarbonate	Anesthetic.	Bath: used at a rate of 142 to 642 mg/L, usually in a small volume of water.
Sodium chloride (salt)	Fish cleansing, disease control, and stress reduction.	Flush or Bath: up to 3% for one hour daily, if needed, or at a lesser concentration during transport.
Sulfadimethoxine-ormetoprim (Romet-30®)	Control and prevention of external and systemic bacterial infections.	Feed: used at a dose of 50 mg of drug per kg of fish for five consecutive days.
Vibrio vaccine	Prevention of Vibrio infections	Dip: Vaccine dumped after use. Not discharged.

ATTACHMENT H – DRUG AND CHEMICAL USAGE REPORT TABLE

The Discharger shall provide the information required in section IX.A of the Monitoring and Reporting Program (Attachment E) using the table below for all aquaculture drugs or chemicals used at the Facility, including those administered by injection or in medicated feed. See the Monitoring and Reporting Program for additional information for completing the table.

Drug or Chemical Name	Date & Time	Purpose	Amount Applied	Units	Location Where Applied	Treatment Type (immersion, feed, injected)	Flow Treated (MGD)	Total Effluent Flow (MGD)	Effluent Concentration (mg/L) ¹	Water Quality Objective (mg/L) ¹	Person Reporting

¹Completion of this column is only required for drugs and chemicals applied directly in water. See section IX.A of the Monitoring and Reporting Program (Attachment E) for additional information for completing this column.

DRUG AND CHEMICAL NON-USE TABLE

Drug or Chemical Name	Reporting Quarter	Used or Not Used
Acetic acid		
Amoxicillin trihydrate		
Carbon Dioxide		
Chloramine-T. Halamide Aqua		
Chorulon® - Chorionic Gonadotropin		
Epsom Salt (Magnesium Sulfate)		
Erythromycin		
Enteric Redmouth (ERM) Vaccine		
Florfenicol (Aquaflor®)		
Formalin (37% formaldehyde solution)		
Hydrogen peroxide		
Ivermectin		
MS-222 / tricaine methanesulfonate (Finquel®, Tricaine-S®)		
Ovaplant®		
Salmon Gonadotropin-releasing hormone analogue (sGnRHa)		
Oxytetracycline dihydrate (Terramycin® 200)		
Oxytetracycline HCl		
Penicillin G potassium		
Potassium Permanganate (Cairox™)		
PVP Iodine		
SLICE (emamectin benzoate;0.2% aquaculture premix)		
Sodium bicarbonate		
Sodium chloride (salt)		
Sulfadimethoxine-ormetoprim (Romet-30®)		
Vibrio vaccine		
List Other Chemical and Drugs used		

ATTACHMENT I – STORM WATER POLLUTION PREVENTION PLAN REQUIREMENTS

I. Objectives

The SWPPP has two major objectives: (a) to identify and evaluate sources of pollutants associated with Facility activities that may affect the quality of storm water discharges and authorized non-storm water discharges from the Facility; and (b) to identify and implement site-specific best management practices (BMPs) to reduce or prevent pollutants associated with Facility activities in storm water discharges and authorized non-storm water discharges. BMPs may include a variety of pollution prevention measures or other low-cost and pollution control measures. They are generally categorized as non-structural BMPs (activity schedules, prohibitions of practices, maintenance procedures, and other low-cost measures) and as structural BMPs (treatment measures, run-off controls, overhead coverage.) To achieve these objectives, the Discharger shall consider the five phase process for SWPPP development and implementation as shown in Table I-1.

The SWPPP requirements are designed to be sufficiently flexible to meet the needs of the Facility. SWPPP requirements that are not applicable to the Facility should not be included in the SWPPP.

A SWPPP is a written document that shall contain a compliance activity schedule, a description of Facility activities and pollutant sources, descriptions of BMPs, drawings, maps, and relevant copies or references of parts of other plans. The SWPPP shall be revised whenever appropriate, at least annually, and shall be readily available for review by facility employees or Lahontan Water Board inspectors.

Table I-1. Five Phases for Developing and Implementing Industrial SWPPPs

PLANNING AND ORGANIZATION Form Pollution Prevention Team Review other plans
ASSESSMENT PHASE Develop a site map Identify potential pollutant sources Inventory of materials and chemicals List significant spills and leaks Identify non-storm water discharges Assess pollutant risks
BEST MANAGEMENT PRACTICES IDENTIFICATION PHASE Non-structural BMPs Structural BMPs Select activity and site-specific BMPs

<p>IMPLEMENTATION PHASE</p> <p>Train employees Implement BMPs Conduct recordkeeping and reporting</p>
<p>EVALUATION / MONITORING</p> <p>Conduct annual site evaluation Review monitoring information Evaluate BMPs Review and revise SWPPP</p>

II. Planning and Organization

The SWPPP shall identify a specific individual or individuals and their positions within the Discharger’s organization as members of a storm water pollution prevention team responsible for developing the SWPPP, assisting the Facility manager in SWPPP implementation and revision, and conducting all monitoring program activities. The SWPPP shall clearly identify the permit-related responsibilities, duties, and activities of each team member. Storm water pollution prevention teams may consist of one individual where appropriate.

III. Site Map

The SWPPP shall include a site map. The site map size shall be at least 8-½ x 11 inches but no larger than 11 X 17 inches and include notes, legends, and other data as appropriate to ensure that the site map is clear and understandable. If necessary, facility operators may provide the required information on multiple site maps.

The following information shall be included on the site map:

- A. The Facility boundaries; the outline of all storm water drainage areas within the Facility boundaries; portions of the drainage area impacted by run-on from surrounding areas; and direction of flow of each drainage area, on-site surface water bodies, and areas of soil erosion. The map shall also identify nearby water bodies and storm drain inlets where the facility's storm water discharges and authorized non-storm water discharges may be received.
- B. The location of the storm water collection and conveyance system, associated points of discharge, and direction of flow. Include any structural control measures that affect storm water discharges, authorized non-storm water discharges, and run-on. Examples of structural control measures are catch basins, berms, detention ponds, secondary containment, oil/water separators, diversion barriers, etc.
- C. An outline of all impervious areas of the Facility, including paved areas, buildings, covered storage areas, or other roofed structures.
- D. Locations where materials are directly exposed to precipitation and the locations where significant spills or leaks identified have occurred.

- E. Locations of all chemical storage areas and storage tanks, fueling areas, vehicle and equipment storage/maintenance areas, cleaning and rinsing areas, and other areas of activity which are potential pollutant sources.

IV. List of Significant Materials

The SWPPP shall include a list of significant materials handled and stored at the Facility. For each material on the list, describe the locations where the material is being stored, as well as the typical quantities.

V. Description of Potential Pollutant Sources

- A. The SWPPP shall include a narrative description of the Facility activities, associated potential pollutant sources, and potential pollutants that could be discharged in storm water discharges or authorized non-storm water discharges. At a minimum, the following items related to the Facility's activities shall be considered:
 - 1. Describe the type, characteristics, and quantity of significant materials used in or stored on site and a description of the cleaning, rinsing, disposal, or other activities related to Facility's operation. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.
 - 2. **Material Handling and Storage Areas.** Describe each handling and storage area, type, characteristics, and quantity of significant materials handled or stored and the spill or leak prevention and response procedures. Where applicable, areas protected by containment structures and the corresponding containment capacity shall be described.
 - 3. Describe materials that have spilled or leaked in significant quantities in storm water discharges or non-storm water discharges. The description shall include the type, characteristics, and approximate quantity of the material spilled or leaked, the cleanup or remedial actions that have occurred or are planned, the approximate remaining quantity of materials that may be exposed to storm water or non-storm water discharges, and the preventative measures taken to ensure spill or leaks do not reoccur.
 - 4. **Non-Storm Water Discharges.** Investigate the Facility to identify all non-storm water discharges and their sources. As part of this investigation, all drains (inlets and outlets) shall be evaluated to identify whether they connect to a storm drain system. (Examples of prohibited non-storm water discharges are contact and non-contact cooling water, rinse water, wash water, etc.). The SWPPP must include BMPs to prevent or reduce contact of non-storm water discharges with significant materials or equipment.
- B. The SWPPP shall include a summary of all areas' potential pollutant sources, and potential pollutants. This information should be summarized similar to Table I-2.

Table I-2. Example Assessment of Potential Pollutant Sources and Corresponding BMP Summary

Area	Activity	Source	Pollutant	Best Management Practices
Vehicle & Equipment Fueling	Fueling	Spills and leaks during delivery. Spills caused by topping off fuel tanks. Hosing or washing down fuel oil fuel area. Leaking storage tanks. Rainfall running off fuel oil, and rainfall running onto and off fueling area.	Fuel oil	Use spill and overflow protection. Minimize run-on of storm water into the fueling area. Cover fueling area. Use dry cleanup methods rather than hosing down area. Implement proper spill prevention control program. Implement adequate preventative maintenance program to preventive tank and line leaks. Inspect fueling areas regularly to detect problems before they occur. Train employees on proper fueling, cleanup, and spill response techniques.

VI. Assessment of Potential Pollutant Sources

- A. The SWPPP shall include a narrative assessment of all Facility activities and potential pollutant sources to determine:
 - 1. Which areas of the Facility are likely sources of pollutants in storm water discharges and authorized non-storm water discharges; and
 - 2. Which pollutants are likely to be present in storm water discharges and authorized non-storm water discharges. Facility operators shall consider and evaluate various factors when performing this assessment such as current storm water BMPs; quantities of significant materials stored or disposed of; likelihood of exposure to storm water or authorized non-storm water discharges; history of spill or leaks; and run-on from outside sources.
- B. Facility operators shall summarize the areas of the facility that are likely sources of pollutants and the corresponding pollutants that are likely to be present in storm water discharges and authorized non-storm water discharges. Facility operators are required to develop and implement additional BMPs as appropriate and necessary to prevent or reduce pollutants associated with each pollutant source.

VII. Storm Water Best Management Practices

The SWPPP must include a narrative description of the storm water BMPs to be implemented at the Facility for each potential pollutant and its source identified in the site assessment phase. The BMPs shall be developed and implemented to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Each

pollutant and its source may require one or more BMPs. Some BMPs may be implemented for multiple pollutants and their sources, while other BMPs will be implemented for a very specific pollutant and its source.

The description of the BMPs must identify the BMPs as (1) existing BMPs, (2) existing BMPs to be revised and implemented, or (3) new BMPs to be implemented along with a schedule for implementation. The description shall also include a discussion on the effectiveness of each BMP to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. The SWPPP shall provide a summary of all BMPs implemented for each pollutant source. This information should be summarized similar to Table I-2.

Facility operators shall consider the following BMPs for implementation at the Facility:

A. Non-Structural BMPs

Non-structural BMPs generally consist of processes, prohibitions, procedures, schedule of activities, etc., that prevent pollutants associated with activity from contacting with storm water discharges and authorized non-storm water discharges. They are considered low technology, cost-effective measures. The Discharger and its Facility operator may consider possible non-structural BMPs options before considering additional structural BMPs. Below is a list of non-structural BMPs that should be considered:

1. **Good Housekeeping.** Good housekeeping generally consists of practical procedures to maintain a clean and orderly facility.
2. **Preventive Maintenance.** Preventive maintenance includes the regular inspection and maintenance of structural storm water controls (catch basins, oil/water separators, etc.) as well as other facility equipment and systems.
3. **Spill Response.** This includes spill clean-up procedures and necessary clean-up equipment based upon the quantities and locations of significant materials that may spill or leak.
4. **Material Handling and Storage.** This includes all procedures to minimize the potential for spills and leaks and to minimize exposure of significant materials to storm water and authorized non-storm water discharges.
5. **Employee Training.** This includes training of personnel who are responsible for (1) implementing activities identified in the SWPPP, (2) conducting inspections, sampling, and visual observations, and (3) managing storm water. Training should address topics such as spill response, good housekeeping, and material handling procedures, and actions necessary to implement all BMPs identified in the SWPPP. The SWPPP shall identify periodic dates for such training. Records shall be maintained of all training sessions held.
6. **Waste Handling/Recycling.** This includes the procedures or processes to handle, store, or dispose of waste materials or recyclable materials.
7. **Recordkeeping and Internal Reporting.** This includes the procedures to ensure that all records of inspections, spills, maintenance activities, corrective actions, visual observations, etc., are developed, retained, and provided, as necessary, to the appropriate facility personnel.

8. **Inspections.** This includes, in addition to the preventative maintenance inspections identified above, an inspection schedule of all potential pollutant sources. Tracking and follow-up procedures shall be described to ensure adequate corrective actions are taken and necessary modifications to the site SWPPP are made.
9. **Quality Assurance.** This includes the procedures to ensure that all elements of the SWPPP and Monitoring Program are adequately conducted.

B. Structural BMPs

Where non-structural BMPs as identified above are not effective, structural BMPs shall be considered. Structural BMPs generally consist of structural devices that reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Below is a list including, but not limited, to these structural BMPs that should be considered:

1. **Overhead Coverage.** This includes structures that provide horizontal coverage of materials, chemicals, and pollutant sources from contact with storm water and authorized non-storm water discharges.
2. **Retention Ponds.** This includes basins, ponds, surface impoundments, bermed areas, etc. that do not allow storm water to discharge from the facility.
3. **Control Devices.** This includes berms or other devices that channel or route run-on and runoff away from pollutant sources.
4. **Secondary Containment Structures.** This generally includes containment structures around storage tanks and other areas for the purpose of collecting any leaks or spills.
5. **Treatment.** This includes inlet controls, infiltration devices, oil/water separators, detention ponds, vegetative swales, etc., that reduce the pollutants in storm water discharges and authorized non-storm water discharges.

VIII. SWPPP General Requirements

- A. The SWPPP must be retained on site and made available upon request of a representative of the Lahontan Water Board.
- B. The Lahontan Water Board may notify the Facility operator when the SWPPP does not meet one or more of the minimum requirements of this Section. As requested by the Lahontan Water Board, the Discharger shall submit a SWPPP revision and implementation schedule.
- C. The SWPPP shall be revised, as appropriate, and implemented prior to changes which (i) may significantly increase the quantities of pollutants in storm water discharge, (ii) cause a new area of industrial activity at the facility to be exposed to storm water, or (iii) begin an activity which would introduce a new pollutant source at the facility.
- D. When any part of the SWPPP is infeasible to implement due to proposed significant structural changes, the Discharger shall submit a report to the Lahontan Water Board that (i) describes the portion of the SWPPP that is infeasible to implement, (ii) provides justification for a time extension, (iii) provides a schedule for completing and

implementing that portion of the SWPPP, and (iv) describes the BMPs that will be implemented in the interim period to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Such reports are subject to Water Board approval and/or modifications.

- E. The SWPPP is considered a report that shall be available to the public by the Lahontan Water Board under Section 308(b) of the CWA.

IX. Annual Comprehensive Site Compliance Evaluation

The Discharger shall conduct one annual comprehensive site compliance evaluation in the period January 1-December 31. Evaluations shall be conducted within 8-16 months of each other. The SWPPP shall be revised, as appropriate, and the revisions implemented within 90 days of the evaluation. Evaluations shall include the following:

- A. A review of all visual observation records, inspection records, and sampling and analysis results.
- B. A visual inspection of all potential pollutant sources for evidence of, or the potential for, pollutants entering the drainage system.
- C. A review and evaluation of all BMPs (both structural and non-structural) to determine whether the BMPs are adequate, properly implemented and maintained, or whether additional BMPs are needed. A visual inspection of equipment needed to implement the SWPPP, such as spill response equipment, shall be included.
- D. An evaluation report that includes, (i) identification of personnel performing the evaluation, (ii) the date(s) of the evaluation, (iii) necessary SWPPP revisions, and (v) any incidents of noncompliance and the corrective actions taken. The evaluation report shall be submitted as part of the site's annual report and retained for at least five years.

ATTACHMENT J – PRIORITY POLLUTANT METAL MONITORING REQUIREMENTS

- I. **Background.** The Lahontan Water Board has determined that, based on priority pollutant data collected from concentrated aquatic animal production (CAAP) facilities, discharge of priority pollutants other than metals is unlikely. Accordingly, the Lahontan Water Board is requiring, as part of the Monitoring and Reporting Program, that the Discharger sample the effluent and analyze the samples for priority pollutant metals. Sections 2.4.1 through 2.4.4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP) provide minimum standards for analyses and reporting. (Copies of the SIP may be obtained from the State Water Resources Control Board or downloaded from http://waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/final.pdf.) Upstream receiving water pH and hardness are required to evaluate the toxicity of metals where the toxicity of the constituents varies with pH and/or hardness.
- II. **Monitoring Requirements.** Priority pollutant metal samples shall be collected for the influent at Monitoring Locations INF-001, INF-002, INF-003, and INF-004 and for the effluent at Monitoring Locations EFF-001 or EFF-002, EFF-003, and EFF-004, and upstream receiving water at Monitoring Location RSW-001 and analyzed for the metals listed in Table J-1, as well as pH and hardness of the receiving water, **one time in the year 2023 and reported to the Lahontan Water Board no later than February 1, 2024 in the SMR, and included in the ROWD.**
- III. **Monitoring Plan.** By **September 1, 2022**, the Discharger shall submit a Priority Pollutant Metal Monitoring Plan electronically via CIWQS submittal outlining reporting levels (RLs), method detection limits (MDLs), and analytical methods for the priority pollutant metals identified in Attachment J. Three months prior to collecting the required Priority Pollutant Metal samples, the Discharger shall notify the Water Board of the ELAP-certified laboratory to be used that can conduct the analysis within the holding times specified in the approved methods in 40 C.F.R. part 136. The Discharger shall comply with the monitoring and reporting requirements for the priority pollutant metals as outlined in section 2.3 and 2.4 of the SIP. The maximum required reporting levels for the priority pollutant metals shall be based on the Minimum Levels (MLs) contained in Appendix 4 of the SIP, determined in accordance with Section 2.4.2 and Section 2.4.3 of the SIP. In accordance with Section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Lahontan Water Board shall include as RLs, in the Order, all ML values, and their associated analytical methods, listed in Appendix 4 that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the Lahontan Water Board shall select as the RL, the lowest ML value, and its associated analytical method, listed in Appendix 4 for inclusion in the Order. Table J-1 provides required maximum reporting levels in accordance with the SIP.

Table J-1. List of Required Priority Pollutant Metals^{1,2}

Constituent	Controlling Water Quality Criterion for Surface Waters: Basis	Controlling Water Quality Criterion for Surface Waters: Concentration, µg/L	Maximum Reporting Limit ³ ug/L
Antimony	Primary MCL	6.0	5
Arsenic	Primary MCL	10	10
Beryllium	Primary MCL	4	2
Cadmium	CTR Aquatic Life	1.8	0.5
Chromium (III)	CTR Aquatic Life	153	50
Chromium (VI)	CTR Aquatic Life	11	10
Copper	CTR Aquatic Life	6.8	0.5
Lead	CTR Aquatic Life	2.0	2
Manganese	Secondary MCL	50	20
Mercury	Statewide Mercury Provisions ³	0.012	0.0005 ⁵
Nickel	CTR Aquatic Life	38	20
Selenium	CTR Aquatic Life	5.0	5
Silver	CTR Aquatic Life	2.1	2
Thallium	CTR Human Health	1.7	1
Zinc	CTR Aquatic Life	87	20

¹ Monitoring shall be conducted according to test procedures approved under 40 C.F.R. part 136.

² The Discharger must sample for hardness of the effluent and receiving water during priority pollutant metal sampling and include the results in the priority pollutant metal sampling report, represented as [mg/L as CaCO₃].

³ The reporting levels required in this column for priority pollutant constituents are established based on section 2.4.2 and Appendix 4 of the SIP, except for Chromium (VI)

⁴ *Final Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California- Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions*

⁵ Total mercury samples collected as part of the CTR priority pollutant metals sampling requirement shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels, for collection of equipment blanks (section 9.4.4.2). The analysis of total mercury shall be by U.S. EPA method 1631 (Revision E) with a reporting limit of 0.5 ng/L (0.0005 µg/L).

