

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

**ORDER NO. R6V-2011-0081
NPDES NO. CA0102814**

**WASTE DISCHARGE REQUIREMENTS
FOR THE CALIFORNIA DEPARTMENT OF FISH AND GAME
MOJAVE RIVER FISH HATCHERY**

San Bernardino County

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 1. Discharger Information

WDID	6B360812001
Discharger	State of California, Department of Fish and Game
Name of Facility	Mojave River Fish Hatchery
Facility Address	12550 Jacaranda Avenue, Victorville CA 92395 San Bernardino County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a minor discharge.	

The discharge from the Mojave River Fish Hatchery from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude*	Discharge Point Longitude*	Receiving Water
001	Fish Hatchery Wastewater	34°, 28', 50" N	117°, 15', 36" W	Mojave River and adjacent wetlands
002	Fish Hatchery Wastewater	34°, 28', 47" N	117°, 15', 45" W	Upper Mojave River Valley Ground Water Basin. Also, Spring Valley Lake & other minor surface waters, including wetlands

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	October 12, 2011
This Order shall become effective on:	October 12, 2011
This Order shall expire on:	October 12, 2016
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations as application for issuance of new waste discharge requirements.	<u>April 15, 2016 (not later than 180 days in advance of the Order expiration date)</u>

I, Harold J. Singer, Executive Officer, do hereby certify the following is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on **October 12, 2011**.

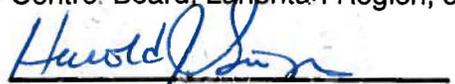

 Harold J. Singer, Executive Officer

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I. FACILITY INFORMATION

The following Discharger is authorized to discharge in accordance with the conditions set forth in this Order:

Table 4 Facility Information

Discharger	California Department of Fish and Game
Name of Facility	Mojave River Fish Hatchery
Facility Address	12550 Jacaranda Avenue
	Victorville, CA 92395
	San Bernardino County
Facility Contact, Title, and Phone	Robert M. Diaz, Hatchery Manager, (760) 245-9981
Mailing Address	SAME
Type of Facility	Concentrated Aquatic Animal Production/ Fish Hatchery
Facility Design Flow	Not Applicable

II. FINDINGS

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

A. Background.

The California Department of Fish and Game (hereinafter Discharger) is currently discharging under Order No. R6V-2006-0028 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0102814. The Discharger submitted a Report of Waste Discharge (ROWD), dated November 30, 2010, and applied for a NPDES permit renewal to discharge up to 8.9 million gallons per day (mgd) of treated wastewater from Mojave River Fish Hatchery (hereafter Facility) to the Mojave River, a water of the United States. 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. Facility Description.

The Discharger owns and operates a cold-water concentrated aquatic animal production (CAAP) facility. Based on the ROWD, as modified by the DFG on August 9, 2011, the Facility has the capacity for producing between 450,000 and 675,000 lbs of rainbow trout and between 15,000 lbs and 22,000 lbs of brown trout. About 65,000 to 98,000 pounds of food are fed to the fish in June, which is the month of maximum feeding. The Facility includes five ground water wells, three aeration towers, an ultraviolet (UV) disinfection system, an egg incubation building, six production raceways, one flow-through sedimentation treatment pond, two flow meters, a recirculation pond, and a recirculation pump. Attachment B provides a topographic map of the area around the Facility. Attachment C provides a wastewater flow schematic and diagram of the Facility. On January 11, 2010, the Director of Fish and Game certified “the use of copper sulfate products has been discontinued at all DFG hatcheries.” In addition, copper plates have not been used on the dam boards at this Hatchery.

Two to four pumps are used to pump ground water for use in the Facility. Well water from the supply wells is treated in an aeration tower to increase dissolved oxygen. After aeration, the water supply is split for use in two locations: the production raceways and the egg incubation building. Water in the raceways is aerated a second time by the mid-pond aeration tower. At the end of the production raceways, the waste water flows to the settling basin (North) and exits on the opposite side to a “Y” splitter box where about 30% of the water flows to a second basin. The second basin is used as an equalization basin. In the recirculation system, water is pumped from the second basin to a third aeration tower.

The recirculation water is then mixed with aerated well water at the head boxes and split to feed raceways C through F. Valves at the head boxes allow hatchery staff to control the ratio of well water to recirculation water.

In the treatment system, wastewater from the production raceways and egg incubation building pass through an effluent settling basin which allows solids to settle out prior to discharge, as described above. The other side of the “Y” splitter box flows through a flow meter and into another splitter box that splits the effluent into two discharges, Discharge Point 001 and Discharge Point 002. Monitoring point M-001 is the effluent limit and receiving water limit compliance point. M-001 is located at the flow meter prior to the splitter box for combined Discharge Points D-001 and D-002 flow measurements and in the splitter box where the water is well-mixed for the purpose of analyses of constituents required for effluent and receiving water monitoring.

Effluent discharged at Discharge Point 001 flows through a surface water channel on Victor Valley Community College property, and then flows to the Mojave River. Some of the water percolates to a shallow riparian aquifer prior to reaching the Mojave River. This channel and associated wetland habitat are considered “Waters of the United

States". As such, the effluent immediately upon leaving the Facility becomes a water of the United States.

Therefore, numeric effluent limitations and receiving water limitations apply to both Discharge Points 001 and 002 (also known as effluent Monitoring Location EFF-001 and receiving water Monitoring Location R-001), with compliance measured at M-001.

Effluent discharged at Discharge Point 002 percolates to the shallow ground water aquifer as it passes through six holding ponds on the Spring Valley Lake Homeowners Association (HOA) golf course where effluent from Discharge Point 002 is either diverted for irrigation of the HOA golf course or pumped to Spring Valley Lake. Water from additional sources, including storm water, is also provided to Spring Valley Lake. Spring Valley Lake water is discharged at two locations, either (1) directly to the Mojave River via an overflow pipe upstream of the Lower Narrows, or (2) to Pelican Lake. Water from Pelican Lake discharges through a channel to Horseshoe Lake. Overflow from Horseshoe Lake flows through a channel that joins the Mojave River at the Lower Narrows. Both Pelican Lake and Horseshoe Lake are located in the flood plain of the Mojave River on property managed by San Bernardino County Mojave Narrows Regional Park.

C. Legal Authorities.

This Order is 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 California Water Code (Water Code) (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this Facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

D. Background and Rationale for Requirements.

The 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 Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E and G through K are also incorporated into this Order.

E. California Environmental Quality Act (CEQA).

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code section 15301.

F. Technology-based Effluent Limitations.

Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (CFR)^a 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 Effluent Limitations Guidelines and Standards for the Concentrated Aquatic Animal Production Point Source Category in Part 451 and Best Professional Judgment (BPJ) in accordance with Part 125, section 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

G. Water Quality-based Effluent Limitations.

Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

40 CFR 122.44(d)(1)(i) mandates 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, water quality-based effluent limitations (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 40 CFR 122.44(d)(1)(vi). A detailed discussion of the WQBELs development is included in the Fact Sheet (Attachment F).

H. Water Quality Control Plans.

The Water Board adopted a Water Quality Control Plan for the Lahontan Region (hereinafter Basin Plan) that became effective on March 31, 1995 and has been subsequently amended. 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 Resources Control Board (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.

^a All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.

Requirements of this Order specifically implement the applicable Water Quality Control Plans.

Beneficial uses applicable to the Mojave River and the Upper Mojave River Valley Ground Water Basin are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Wetlands tributary to the Mojave River (and shallow ground water)	<u>Existing:</u> Municipal and domestic supply (MUN); agricultural supply (AGR); ground water recharge (GWR); contact water recreation (REC-1); non-contact water recreation (REC-2); commercial and sport fishing (COMM); warm freshwater habitat (WARM); cold freshwater habitat (COLD); and wildlife habitat (WILD).
002	Spring Valley Lake & other minor surface waters, including wetlands	<u>Existing:</u> Municipal and domestic supply (MUN); agricultural supply (AGR); ground water recharge (GWR); contact water recreation (REC 1); non-contact water recreation (REC-2); commercial and sport fishing (COMM); warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); rare, threatened, or endangered species (RARE); migration of aquatic organisms (MIGR); water quality enhancement (WQE); and flood peak attenuation/flood water storage (FLD).
001 & 002	Upper Mojave River Valley Ground Water Basin	<u>Existing:</u> Municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); freshwater replenishment (FRSH); and aquaculture (AQUA).

I. National Toxics Rule (NTR) and California Toxics Rule (CTR).

USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

J. 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 for California by the USEPA through the NTR and to the priority pollutant objectives established by the Water Board in the Basin Plans. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA 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.

K. Compliance Schedules and Interim Requirements.

This Order does not include compliance schedules and interim effluent limitations.

L. 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. (40 CFR 131.21; 65 Fed. Reg. 24641 (27 April 2000).) Under the revised regulation (also known as the Alaska rule), 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.

M. Stringency of Requirements for Individual Pollutants.

This Order contains both technology-based effluent limitations and numeric limitations that constitute WQBELs for individual pollutants. The technology-based effluent limitations consist of the requirements contained in 40 CFR Part 451 and restrictions on total suspended solids. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

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. To the extent that toxic pollutant WQBELs were derived from the CTR, the SIP is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the 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. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "*applicable water quality standards for purposes of the*

[Clean Water] Act pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

N. Regulations for Use of Aquaculture Drugs and Chemicals.

Drugs and chemicals used in aquaculture are strictly 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. The Discharger is responsible for complying with all regulations for drugs and chemicals as discussed in the Fact Sheet in Attachment F.

O. Antidegradation Policy.

40 CFR 131.12 requires that 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 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 quality of waters be maintained unless degradation is justified based on specific findings. The Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. As discussed in detail in the Fact Sheet (Attachment F) the permitted discharge is consistent with the antidegradation provision of 40 CFR 131.12 and State Water Board Resolution 68-16 because it does not allow increased degradation of water quality over the previous permit.

P. Anti-Backsliding Requirements.

Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR 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 and receiving water limitations in this Order are at least as stringent as the effluent and receiving water limitations in the previous Order.

Q. Endangered Species Act.

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 sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limitations, receiving water limitations, and other requirements to protect the beneficial uses of Waters of the United States. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

R. Monitoring and Reporting.

Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the Water Code authorize the Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

S. Standard and Special Provisions.

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42. The Water Board has also included in this Order special provisions applicable to the Discharger. The rationale for the special provisions contained in this Order is provided in the Fact Sheet.

T. Provisions and Requirements Implementing State Law.

Provisions/requirements in subsection VI.C.5 of this Order 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.

U. Notification of Interested Parties.

The Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.

V. Consideration of Public Comment.

The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet (Attachment F) of this Order.

IT IS HEREBY ORDERED, that Order No. RV-2006-0028 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the Water Code and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA), and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

A. General Waste Discharge Prohibitions

1. The discharge of waste^b that causes violation of any narrative water quality objective contained in the Basin Plan, including the Non-degradation Objective, is prohibited.
2. The discharge of waste that causes violation of any numeric water quality objective contained in the Basin Plan is prohibited.
3. 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. Section 402(o) of the Clean Water Act and 40 CFR 122.44(l) require that, with some exceptions, effluent limitations or conditions in reissued Orders be at least as stringent as those in the existing Order. Effluent limitations for total suspended solids, settleable solids, formaldehyde, and hydrogen peroxide are being carried over from Order No. R6V-2006-0028 and limits for pH are more stringent and listed in the Effluent Limitations and Receiving Water Limitations based on the Basin Plan objectives.
4. The discharge of untreated sewage, garbage, or other solid wastes, or industrial wastes into surface waters of the Region is prohibited.
5. The discharge of hatchery wastewater except to the authorized discharge points (Discharge Points 001 and 002) is prohibited.
6. There shall be no discharge, bypass, or diversion of hatchery wastewater from the transport or treatment facilities to surface waters except as in compliance with Standard Provisions for bypass (Attachment D).
7. The discharge shall not cause pollution as defined in Section 13050 of the Water Code, or a threatened pollution.
8. Neither the treatment nor the discharge of hatchery wastewater shall cause a nuisance as defined in Section 13050 of the Water Code.
9. The discharge shall not cause a violation of any applicable water quality standards for receiving water adopted by the Water Board or the State Water Board.

^b "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 the section 13050(d) of the Water Code.

- a. The discharge of any therapeutic or pharmaceutical aquaculture drug or chemical resulting in toxicity in receiving waters is prohibited.
 - b. This permit does not authorize the discharge of any pesticides resulting in detectable concentrations in receiving waters. Unless authorized by a separate permit or exemption by the Water Board, the discharge of any pesticides resulting in detectable concentrations in receiving waters is prohibited.
 - c. The use of any aquaculture drug or chemical not authorized for discharge in Section VI.C.2.a of this Order that may be potentially discharged to waters of the United States or of the State, is prohibited. Modifications to the authorized discharge of aquaculture drugs and chemicals at the Facility may be allowed by the Water Board as specified in Section VI.C.2.a of this Order.
10. The discharge of hazardous or toxic substances including cleaning chemicals, solvents, oil, grease or other petroleum products, is prohibited.
 11. Practices that may allow accumulation of sludge, grit, and solid residues that may be discharged to surface waters are prohibited.

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

1. This permit does not supersede the obligation to obtain coverage from the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ, the Industrial Storm Water General Permit Order 97-03-DWQ (General Industrial Permit) or any other permit when such permits are applicable.
 2. Unless otherwise authorized by a separate waste discharge permit or specifically authorized by this permit, discharges of material other than storm water to a separate storm sewer system, or waters of the State are prohibited. Prohibited non-storm water discharges must either be eliminated or permitted by a separate NPDES permit.
- 3. Visual Observations**
- a. The Discharger shall perform visual storm water monitoring, as described in Attachment E, within two business days (48 hours) after each qualifying rain event. These observations are to (1) identify whether BMPs were adequately designed, implemented, and effective, and (2) identify additional BMPs necessary and to revise the SWPPP accordingly.
 - b. Quarterly, the Discharger shall perform visual non-storm water inspections of the facility, as described in Attachment E, to ensure that BMPs are being implemented and are effective.
4. Unless specifically granted, authorization pursuant to this permit does not constitute an exemption to applicable discharge prohibitions in the Basin Plan.

5. Unless authorized by a separate NPDES permit or WDRs, storage and use of materials not designed for outdoor use must be protected from exposure to storm water.
6. 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 and 002 with compliance measured at Monitoring Location M-001

1. Final Effluent Limitations – Monitoring Location M-001

The discharge of fish hatchery wastewater shall maintain compliance with the following effluent limitations at Discharge Points 001 and 002, with compliance measured at Monitoring Location M-001 as described in the attached MRP:

Table 6. Effluent Limitations – Discharge Points D-001 and D-002 (Measured at M-001)

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	Standard Units	--	--	6.5	8.5
Formaldehyde	mg/L	0.65	1.3	--	--
Hydrogen Peroxide	mg/L	--	1.3	--	--
Settleable Solids ¹	ml/L	0.1 ¹	--	--	--
Total Suspended Solids ¹	mg/L	6.0 ¹	--	--	15.0 ¹

¹ The Discharger shall minimize the discharge of Total Suspended Solids and Settleable Solids through the implementation of the best management practices established in Special Provision VI.C.3 of this Order.

2. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications– Not Applicable

C. Reclamation Specifications – Not Applicable

D. Total Combined Flow Limitations – Discharge Points 001 and 002

The total flow of fish hatchery wastewater is required to be measured at Monitoring Location M-001 prior to the split of effluent flow to Discharge Point 001 and to Discharge Point 002 as described in the attached Monitoring and Reporting Program (Attachment E): However, the flow limitation has been removed since the Facility’s pumping infrastructure limits the amount of water used at the Facility. Additionally, compliance with effluent limitations for total suspended solids and settleable solids ensures that flows exceeding the treatment capacity of the Facility will not be discharged. Based on these factors there is no need for flow limits in this permit.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

1. The discharge shall not cause or contribute to a violation of any applicable water quality standard for receiving water adopted by the Water Board or the State Water Board as required by the CWA and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the federal Clean Water Act or amendments thereto, the Water Board may revise and modify this Order in accordance with such more stringent standards.
2. The following receiving water limitations are based on water quality objectives contained in the Basin Plan, which apply to all surface waters (including wetlands) within the Lahontan Region and are a required part of this Order. The discharge shall not cause or contribute to the following in surface waters of the Mojave 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 Attachment G, Tables G-1 and G-2. For temperature and pH values not explicitly in these tables, the most conservative value neighboring the actual value may be used or criteria can be calculated from numerical formulas available on page 3-4 of the Basin Plan.

- b. **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.
- c. **Chemical Constituents:** Waters shall not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.
 - i. 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 – Table 64431-A (MCLs for Inorganic Chemicals), Table 64444-A (MCLs for Organic Chemicals), Table 64449-A (Secondary MCLs, Consumer Acceptance Limits), and Table 64449-B (Secondary MCLs, Ranges). This incorporation-by-reference is prospective and therefore includes future changes to the incorporated provisions, as changes take effect.

- ii. Waters designated as agricultural supply (AGR) shall not contain concentrations of chemical constituents in amounts that adversely affect the water for agricultural use.
- d. **Color:** Waters shall be free of coloration that causes nuisance or adversely affects the water for beneficial uses.
- e. **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. The minimum dissolved oxygen concentration shall not be less than that specified for "COLD" beneficial use class in Table G-3 in Attachment G of this Order.
- f. **Floating Materials:** Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect the water for beneficial uses. The concentrations of floating material shall not be altered to the extent that such alterations are discernable at the 10 percent significance level.
- g. **Nondegradation of Aquatic Communities and Populations:** All wetlands shall be free from substances attributable to wastewater or other discharges that produce adverse physiological responses in humans, animals, or plants; or which 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 hydrological processes.
- h. **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. The concentration of oils, greases, or other film or coat generating substances in the receiving water shall not be altered.
- i. **Pesticides:** The Basin Plan defines pesticides to include insecticides, herbicides, rodenticides, fungicides, pesticides and all other economic poisons. An economic poison is any substance intended to prevent, repel, destroy, or mitigate the damage from insects, rodents, predatory animals, bacteria, fungi or weeds capable of infesting or harming vegetation, humans, or animals (CA Agricultural Code section 12753). Pesticide concentrations, individually or collectively, shall not exceed the lowest detectable levels, using the most recent detection procedures available. There shall not be an increase in pesticide concentrations found in bottom sediments. There shall be no detectable increase in bioaccumulation of pesticides in aquatic life. Waters designated as MUN shall not contain concentrations of pesticides or herbicides in excess of the limiting concentrations specified in Title 22 of the California Code of Regulations.

- j. **pH:** The discharge shall not change receiving water pH levels by more than 0.5 pH unit, and the receiving water pH shall not be depressed below 6.5 or raised above 8.5.
- k. **Radioactivity:** Radionuclides shall not be present in concentrations which are deleterious to human, plant, animal, or aquatic life, nor which result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life. Waters shall not contain concentrations of radionuclides in excess of limits listed in the subsequent table as specified in Title 22 of the California Code of Regulations :

Table 7. Radioactivity Receiving Water Limits

Constituent	Limit
Radioactivity, Gross Alpha	15 pCi/L
Radium-226 + Radium-228	5 pCi/L

- l. **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.
- m. **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 milliliters per liter.
- n. **Suspended Materials:** 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.
- o. **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. The taste and odor of waters shall not be altered.
- p. **Temperature:** The natural receiving water temperature shall not be altered unless it can be demonstrated to the satisfaction of the Water Board that such 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 five degrees Fahrenheit (5°F) above or below the natural temperature. For waters designated COLD, the temperature shall not be altered. [Note: The Basin Plan does not specify which reaches of the Mojave River have a COLD and which have a WARM beneficial use. Therefore, the most restrictive standard (e.g., no alteration of temperature for the COLD use) applies. However, for purposes of compliance and enforcement, the Water Board will consider

historical data and the impact of temperature alterations upon the beneficial uses of the Mojave River below Discharge Point No. 001.]

- q. **Toxicity:** 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 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. 1998).
 - r. **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.
3. **Specific Numeric Receiving Water Limitations**
 Surface (receiving) Water Limitations Specific to the Mojave River at Lower Narrows and at Victorville, Table 8, below, is based on Tables 3-20 and 3-21 (pages 3-52 and 3-54) of the Basin Plan. These limitations apply to surface waters tributary to the Mojave River above the Lower Narrows and to the shallow ground waters in the vicinity of and beneath the Mojave River channel. Discharges from the Facility shall not cause or contribute to exceedances of the following limitations.

Table 8 Surface Water Limitations

Constituent	Limit mg/L
Total Dissolved Solids (TDS)	312 (Instantaneous maximum)
Nitrate (NO ₃) as Nitrate-Nitrogen	5 (Instantaneous maximum)
Chloride	The annual average shall not exceed 75 mg/L and the 90th percentile shall not exceed 100 mg/L.
Sulfate	The annual average shall not exceed 40 mg/L and the 90th percentile shall not exceed 100 mg/L.
Fluoride	The annual average shall not exceed 0.2 mg/L and the 90th percentile shall not exceed 1.5 mg/L.
Boron	The annual average shall not exceed 0.2 mg/L and the 90th percentile shall not exceed 0.3 mg/L.
pH	The discharge shall not change surface water pH levels by more than 0.5 pH unit and the surface water pH shall not be depressed below 6.5 or raised above 8.5.

B. Groundwater Limitations

Shallow ground water adjacent to the Mojave River is highly influenced by the river. As such the limitations for this shallow ground water are the same as the Section V.A, above.

VI. PROVISIONS

A. Standard Provisions

1. Federal Standard Provisions. The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.

2. Water Board Standard Provisions for Waste Discharge Requirements.

a. Reporting Requirements

- i. Pursuant to Water Code section 13267(b), and Attachment D, the Discharger shall immediately notify the Water Board by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation shall follow within 5 days of the time the Discharger becomes aware of the circumstances. An adverse condition includes, but is not limited to, spills of petroleum products or toxic chemicals, or damage to control facilities that could affect compliance.
- ii. Pursuant to Water Code section 13260(c), and Attachment D, any proposed material change in the character of the waste, manner or method of treatment or disposal, increase of discharge, or location of discharge, shall be reported to the Water Board at least 140 days in advance of implementation of such proposal.
- iii. The owner(s) of, and discharge upon, property subject to WDRs shall be considered to have a continuing responsibility for ensuring compliance with WDRs in the operations or use of the owned property. Pursuant to Water Code section 13260(c), any change in the ownership and/or operation of property subject to the WDRs shall be reported to the Water Board. Notification of applicable WDRs shall be furnished in writing to the new owners and/or operators and a copy of such notification shall be sent to the Water Board.
- iv. If the Discharger becomes aware that any information submitted to the Water Board is incorrect, the Discharger shall immediately notify the Water Board, in writing, and correct the information.
- v. Reports required by the WDRs, and other information requested by the Water Board, must be signed by a duly authorized representative of the Discharger. Under section 13268 of the Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1000) for each day of violation.

- vi. If the Discharger becomes aware that their WDRs are no longer needed (because the Discharge will cease) the Discharger shall notify the Water Board in writing and request that their waste discharge requirements be rescinded.

b. Right to Revise Waste Discharge Requirements

The Water Board reserves the right to revise all or any portion of the WDRs upon legal notice to and after opportunity to be heard is given to all interested parties.

c. Duty to Comply

Failure to comply with the WDRs may constitute a violation of the Water Code and is grounds for enforcement action or for permit termination, revocation and re-issuance, or modification.

d. Waste Discharge Requirements Actions

The WDRs may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for waste discharge requirement modification, revocation, and re-issuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any of the WDR conditions.

e. Enforcement

The Water Code provides for civil liability and criminal penalties for violations or threatened violations of the WDRs including imposition of civil liability or referral to the Attorney General.

f. Availability

A copy of the WDRs shall be kept and maintained by the Discharger and be available at all times to operating personnel.

g. Severability

Provisions of the WDRs are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.

h. Definitions

- i. "Surface waters" as used in this Order, include, but are not limited to, live streams, either perennial or ephemeral, which flow in natural or artificial water courses and natural lakes and artificial impoundments of waters. "Surface waters" does not include artificial water courses or impoundments used exclusively for wastewater disposal.

- ii. "Ground waters" 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.

- i. Storm Protection

All facilities used for collection, transport, treatment, storage, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency from a storm or flood having a recurrence interval of once in 100 years.

B. Monitoring and Reporting Program Requirements

The Discharger shall comply with the Monitoring and Reporting Program, and future revisions thereto, in Attachment E of this Order.

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 Water Board will revise and modify this Order in accordance with such more stringent standards.
- b. If toxicity testing, or information specified below in Section VI.C.2 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.
- c. Toxicity testing requirements, as specified in Section VI.C.2. 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.
- d. If effluent monitoring data indicate the discharge may cause, have the reasonable potential to cause, or contribute to an excursion of the numeric Water Quality Objectives or narrative Water Quality Objectives contained in the Basin Plan for the Mojave River (at Victorville), then this Order may be reopened to establish effluent limitations for these parameters.

2. Special Studies and Additional Monitoring Requirements

a. Chemical and Aquaculture Drug Use

Attachment H 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 discharge of oxytetracycline, penicillin G, florfenicol, amoxicillin trihydrate, erythromycin, vibrio vaccine (fish are removed via a basket and then dipped in vaccine and then returned to the raceway), enteric redmouth bacterin (fish are removed via a basket and then dipped in vaccine and then returned to the raceway), Romet-30, MS-222, PVP Iodine, formaldehyde, hydrogen peroxide, potassium permanganate, sodium chloride, acetic acid, and Chloramine-T to surface waters in accordance with label directions, effluent and surface water limitations, best management plan requirements, monitoring and reporting requirements, and other conditions of this Order.

Other aquaculture chemicals or drugs that may enter the wastewater discharge can only be authorized if the Discharger notifies the 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. Material 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.

The Discharger shall also submit acute toxicity test information on any new chemical or drug applied in solution for immersive 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* (EPA 600/4-90/027) 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 the 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 EPA/21-R-02-013, *Short Term*

Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, October 2002, using *C. dubia*, to determine the No Observed Effect Concentration (NOEC) or Inhibition Concentration (IC₂₅).

b. Reporting of Unanticipated Discharges

- i. The Discharger shall provide to the Water Board an oral report within 24 hours of discovery of the failure in, or damage to, the settling ponds (effluent treatment system) or an aquatic animal containment system resulting in an unanticipated material discharge of pollutants to waters of the United States or to waters of the State, including surface waters or groundwater. 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.

The Discharger must provide a written report within 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.

- ii. In the event of a spill of drugs, chemicals, pesticides or feed occurs 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 Water Board within 24 hours of discovery of its occurrence and a written report within 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 shall certify in writing to the Water Board within **90 days of the issuance of this Order** that a BMP Plan has been updated to include the requirements specified in this Order and is being implemented as required by 40 CFR Part 451.3(d). An existing BMP plan may be modified for use under this section. The Discharger shall develop and implement the BMP Plan to prevent or minimize the generation and discharge of wastes and pollutants to waters of the United States and waters of the State and ensure disposal or land application of wastes is in compliance with applicable solid waste disposal regulations. The Discharger shall review and certify in writing to the Water Board the BMP Plan annually and must amend the BMP Plan whenever there is a change in the Facility or in the operation of the Facility which materially increases the generation of pollutants or their release or potential release to surface waters.

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

i. Solids Management

- 1) Conduct fish feeding in aquaculture ponds 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.
- 2) Clean aquaculture raceways and sediment 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.
- 3) Report the final disposition of all other solids and liquids, including aquaculture drugs and chemicals, not discharged to surface waters in the effluent.
- 4) Dead fish must be removed and properly disposed of on a regular basis to prevent discharge to waters of the U.S., except in cases where the discharge to surface waters is determined to benefit the aquatic environment. Procedures must be identified and implemented to collect, store, and dispose of fish and other solid wastes in an environmentally safe manner and in manner so as to minimize discharge to waters of the United States or waters of the State.

ii. Operations and Maintenance

- 1) Maintain the facility to prevent the overflow of any floating matter or bypassing of the settling ponds.
- 2) Inspect the facility and the settling ponds on a routine basis in order to identify and promptly repair any damage.
- 3) Ensure storage and containment of drugs, chemicals, fuel, waste oil, organic wastes, biocides/pesticides/herbicides or other materials to prevent spillage or release into the waters of the United States, or waters of the State.
- 4) Implement procedures for properly containing, cleaning, and disposing of any spilled material.
- 5) 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.
- 6) All drugs and pesticides must be used in accordance with applicable label directions (FIFRA or FDA), except under the following conditions, both of which must be reported in advance to the Executive Officer:
 - a) Participation in Investigational New Animal Drug (INAD) studies, using established protocols; or
 - b) Extra-label drug use, as prescribed by a veterinarian.

- 7) Implement protocols to ensure that pesticides stored or used on site will not spill, drift, or transport into the discharge, into waters of the US, or into waters of the State.
- 8) Limit the number of raceways treated during chemical treatments to insure compliance with effluent limitations and provisions of this Order.

iii. Recordkeeping

- 1) 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.
- 2) Maintain records documenting the frequency of cleaning, inspections, maintenance, repairs, spills and spill response.
- 3) Maintain records documenting compliance with training requirements.

iv. Training

- 1) 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.
- 2) Train staff on the proper operation and cleaning of production and wastewater treatment systems, including training in feeding procedures and proper use of equipment.
- 3) The Discharger shall ensure that its operations staff are familiar with the BMP Plan and have been adequately trained in the specific procedures it requires.

b. Best Management Practices (BMP) Plan - 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, landscaping supplies, landscaping wastes, and storage of other materials with the potential for discharge to surface waters. The Discharger shall develop, and implement in accordance with the requirements in Attachment K, 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 K, and updated to represent current site conditions.

4. Compliance Schedules – Not Applicable

5. Construction, Operation and Maintenance Specifications

- a. Collected screenings, sludges, and other solids, including fish carcasses, shall be disposed of in a manner approved by the Executive Officer and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, 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 shall be disposed of in an environmentally safe manner, according to label guidelines, Material Safety Data Sheet guidelines and the Discharger's BMP Plan (see Section VI.C.3 of this Order). Any other form of disposal requires approval from the Executive Officer. 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 ground water, is prohibited (see also Section III, Discharge Prohibitions).
- c. All facilities used for transport, and treatment of hatchery wastewater shall be adequately protected against either structural damage or signification reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.
- d. Solid waste, including dead fish, shall be discharged only at a legal point of disposal in accordance or in a manner approved by the Executive Officer.
- e. The vertical distance between the water surface elevation and the lowest point of a pond dike or the invert of an overflow structure shall not be less than 2 feet (0.46 meters).

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

7. Other Special Provisions - Order Continuation After Expiration Date

If this Order is not revised and renewed prior to expiration, then the Order shall be continued until revised and renewed, provided that compliance with the requirements contained herein is maintained and that the Discharger has applied for renewal of the Order at least 180 days prior to the expiration date.

VII. COMPLIANCE DETERMINATION

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

A. 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.

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 1 day only within the reporting period. For any 1 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. 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 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. 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 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.

B. Priority Pollutants

The Water Board may consider priority pollutants in intake water on a pollutant-by-pollutant and discharge-by-discharge basis when establishing and enforcing water quality-based effluent limitations, provided that the Discharger has demonstrated to the satisfaction of the Water Board that the following conditions are met:

1. The observed maximum ambient background concentration, and the intake water concentration of the pollutant exceeds the most stringent applicable Criterion/objective for that pollutant;
2. The intake water credits provided are consistent with any TMDL applicable to the discharge that has been approved by the RWQCB, State Water Board, and U.S. EPA;
3. The intake water is from the same water body as the receiving water body. The Discharger may demonstrate this condition by showing that:
 - a. the ambient background concentration of the pollutant in the receiving water, excluding any amount of the pollutant in the facility's discharge, is similar to that of the intake water;
 - b. there is a direct hydrological connection between the intake and discharge points;
 - c. the water quality characteristics are similar in the intake and receiving waters; and
 - d. the intake water pollutant would have reached the vicinity of the discharge point in the receiving water within a reasonable period of time and with the same effect had it not been diverted by the Discharger.
4. The Water Board may also consider other factors when determining whether the intake water is from the same water body as the receiving water body;
5. The Facility does not alter the intake water pollutant chemically or physically in a manner that adversely affects water quality and beneficial uses; and
6. The timing and location of the discharge does not cause adverse effects on water quality and beneficial uses that would not occur if the intake water pollutant had been left in the receiving water body.
7. Where the above conditions are met, the Water Board may establish effluent limitations allowing the facility to discharge a mass and concentration of the intake water pollutant that is no greater than the mass and concentration found in the

facility's intake water. A Discharger may add mass of the pollutant to its waste stream if an equal or greater mass is removed prior to discharge, so there is no net addition of the pollutant in the discharge compared to the intake water. Where proper operation and maintenance of a facility's treatment system results in the removal of an intake water pollutant, the Water Board may establish limitations that reflect the lower mass and concentration of the pollutant achieved by such treatment.

8. Where intake water for a facility is provided by a municipal water supply system and the supplier provides treatment of the raw water that removes an intake water pollutant, the concentration of the intake water pollutant shall be determined at the point where the water enters the water supplier's distribution system.
9. Where a facility discharges pollutants from multiple sources that originate from the receiving water body and from other water bodies, the Water Board may derive an effluent limitation reflecting the flow-weighted amount of each source of the pollutant provided that adequate monitoring to determine compliance can be established and is included in the permit.
10. When calculating the flow-weighted effluent limitation, the pollutant from the receiving water body shall be assumed to have a concentration that is no greater than the concentration in the facility's intake water; the same pollutant from other sources shall be assumed to have a concentration that is no greater than the most stringent applicable criterion/objective. The permit shall specify how compliance with mass- and concentration-based limitations for the intake water pollutant will be assessed. This may be done by basing the effluent limitation or receiving water limitation on ambient background concentration data. Alternatively, the Water Board may determine compliance by simultaneously monitoring the pollutant concentrations in the intake water and in the effluent. This monitoring may be supplemented by monitoring internal waste streams or by a Water Board evaluation of the use of "best management practices".

ATTACHMENT A – DEFINITIONS

DEFINITIONS

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

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:

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

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.

Best Management Practices (BMP): 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.

Best Practicable Treatment or Control (BPTC): BPTC is a requirement of State Water Resources Control Board Resolution 68-16 – “Statement of Policy with Respect to Maintaining High Quality of Waters in California” (referred to as the “Antidegradation Policy”). BPTC is the treatment or control of a discharge necessary to assure that, *“(a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.”* Pollution is defined in Water Code Section 13050(l). In general, an exceedance of a water quality objective in the Basin Plan constitutes “pollution”.

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.

Bypass: The intentional diversion of waste streams from any portion of a treatment facility [40 CFR §122.41(m)(1)(i)].

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): 40 CFR 122.24 defines CAAP facilities as 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 in 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 2,275 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 permit), 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.

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 waste load allocation (WLA) as used in U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Effluent Limitations Guidelines: Regulations published by USEPA pursuant to section 304(b) of the Clean Water Act.

Estimated Chemical Concentration: The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method that is below the ML value.

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 CFR 530),

FDA: Federal Food and Drug Administration.

FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act.

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.

Inhibition Concentration (IC₂₅): A point estimate of the toxicant concentration that would cause a 25 percent reduction in a non-lethal biological measurement of the test organisms (e.g., reproduction, growth).

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).

Lowest Observed Adverse Effect Level (LOAEL): The lowest level of a stressor that causes statistically and biologically significant differences in test samples as compared to other samples subjected to no stressor. The term is used in this Order when referring to acute toxicity testing.

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.

No Observed Adverse Effect Level (NOAEL): An exposure level at which there are no statistically or biologically significant increases in the frequency or severity of adverse effects between the exposed population and its appropriate control; some effects may be produced at this level, but they are not considered as adverse. This term is used in this Order when referring to acute toxicity testing.

No Observed Effect Concentration (NOEC): The highest measured concentration of an effluent or a toxicant that causes no statistically significant observed effect on exposed organisms compared with control organisms. The term is used in this Order when referring to chronic toxicity testing.

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 title 40 of the Code of Federal Regulations, 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: 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 less than the laboratory's MDL.

Off-line Settling Basin: 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.

Pesticide: For the purposes of this permit pesticides are defined to include insecticides, herbicides, rodenticides, fungicides, piscicides and all other economic poisons. An economic poison is any substance intended to prevent, repel, destroy, or mitigate the damage from insects, rodents, predatory animals, bacteria, fungi or weeds capable of infesting or harming vegetation, humans, or animals (CA Agriculture Code 12753).

Production: Means the amount of fish grown and fed in a given period of time for harvest, processing, or release.

Qualifying Rain Event: Any event that produces 0.5 inches or more precipitation. A rain event is defined as separate from a second rain event if at least 48 hours separates the two.

Reporting Level (RL): 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. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the 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.

Severe property damage: 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 CFR §122.41(m)(1)(ii)].

Solids: Sand, silt, or other debris collected from facility intake or source waters and accumulated waste material from aquaculture raceways and their quiescent zones, offline letting basins, full flow settling basins, ponds or other areas of accumulation.

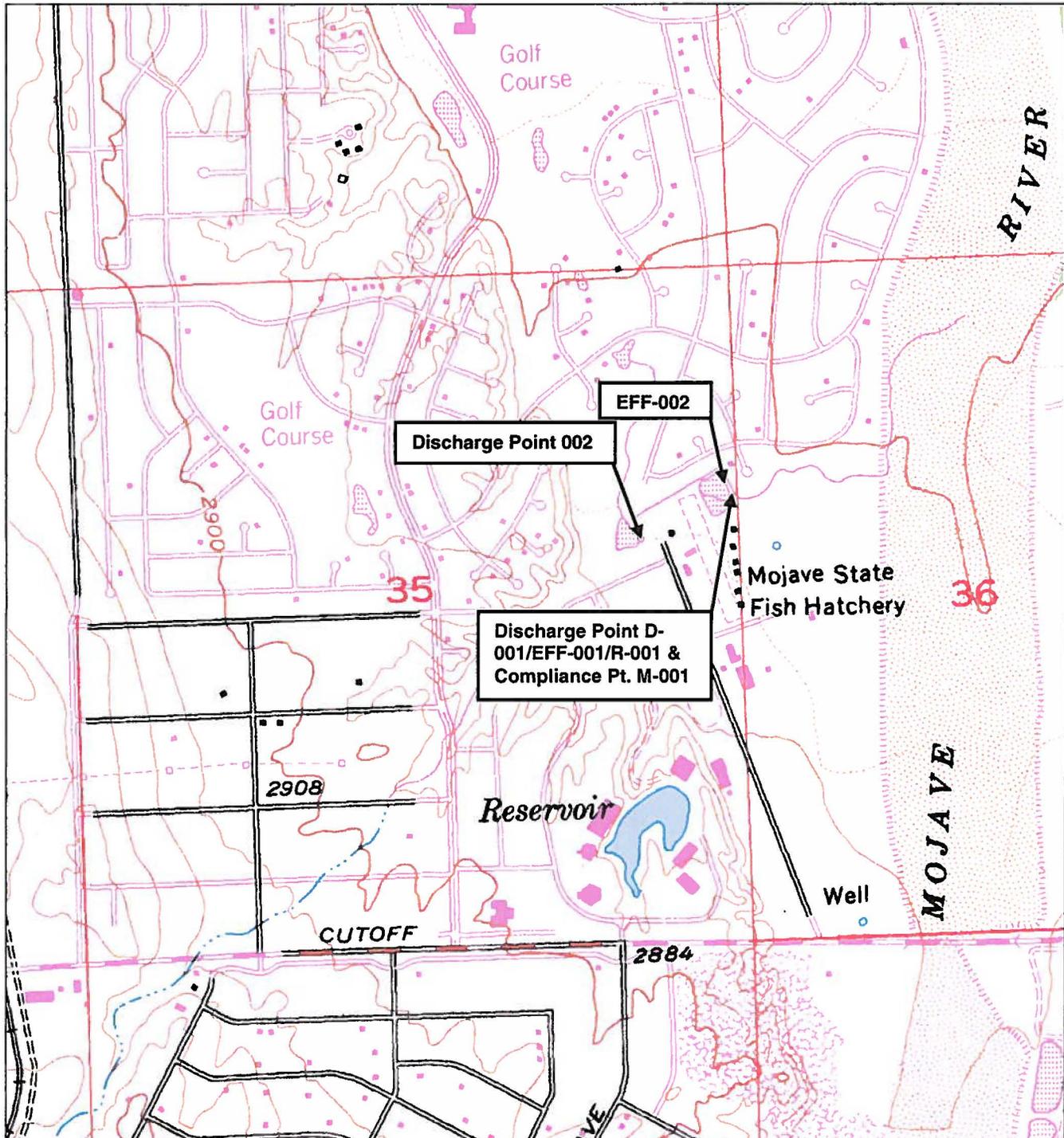
Upset: An exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly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

ACRONYMS & ABBREVIATIONS

AMEL	Average Monthly Effluent Limitation
B	Background Concentration
BAT	Best Available Technology Economically Achievable
BCT	Best Conventional Pollutant Control Technology
BMP	Best Management Practices
BPJ	Best Professional Judgment
BPT	Best practicable treatment control technology
C	Water Quality Objective
CAAP	Concentrated Aquatic Animal Production
CCC	Criterion Continuous Concentration
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CFS	Cubic Feet Per Second
CMC	Criterion Maximum Concentration
CTR	California Toxics Rule
CV	Coefficient of Variation
CVM	Center for Veterinary Medicine
CWA	Clean Water Act
WATER CODE	California Water Code
DFG	Department of Fish and Game
DPH	State of California Department of Public Health
DMR	Discharge Monitoring Report
ECA	Effluent Concentration Allowance
ELAP	California Department of Health Services Environmental Laboratory Accreditation Program
ELG	Effluent Limitations, Guidelines and Standards
FDA	United States Food and Drug Administration
GPD	Gallons Per Day
IC ₂₅	Inhibition Concentration (25%)
INAD	Investigational New Animal Drug
IRIS	Integrated Risk Information System
LA	Load Allocations
LC ₅₀	Lethal Concentration (50%)
LOAEL	Lowest Observed Adverse Effect Level
LOEC	Lowest Observed Effect Concentration
LRP	Low Regulatory Priority
LTA	Long-Term Average
MCL	Maximum Contaminant Level
MDEL	Maximum Daily Effluent Limitation
MDL	Method Detection Limit
MEC	Maximum Observed Effluent Concentration
MGD	Million Gallons Per Day
mg/L	Milligrams Per Liter
ML	Minimum Level
MRP	Monitoring and Reporting Program

NADA	New Animal Drug Application
ND	Not Detected
NOAEL	No Observed Adverse Effect Level
NOEC	No Observable Effect Concentration
NPDES	National Pollutant Discharge Elimination System
NTR	National Toxics Rule
POTW	Publicly-Owned Treatment Works
PPM	Parts Per Million
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
RPA	Reasonable Potential Analysis
ROWD	Report of Waste Discharge
RWQCB	Regional Water Quality Control Board or Water Board
SIP	State Implementation Policy (<i>Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California</i>)
SMCL	Secondary Maximum Contaminant Level
SMR	Self Monitoring Report
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board or State Water Board
TDS	Total Dissolved Solids
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TSD	Technical Support Document
TSS	Total Suspended Solid
USEPA	United States Environmental Protection Agency
WDR	Waste Discharge Requirements
WET	Whole Effluent Toxicity
WLA	Waste Load Allocations
WQBEL	Water Quality-Based Effluent Limitation
WQO	Water Quality Objectives
µg/L	Micrograms Per Liter
µS/cm	Microseimens Per Centimeter

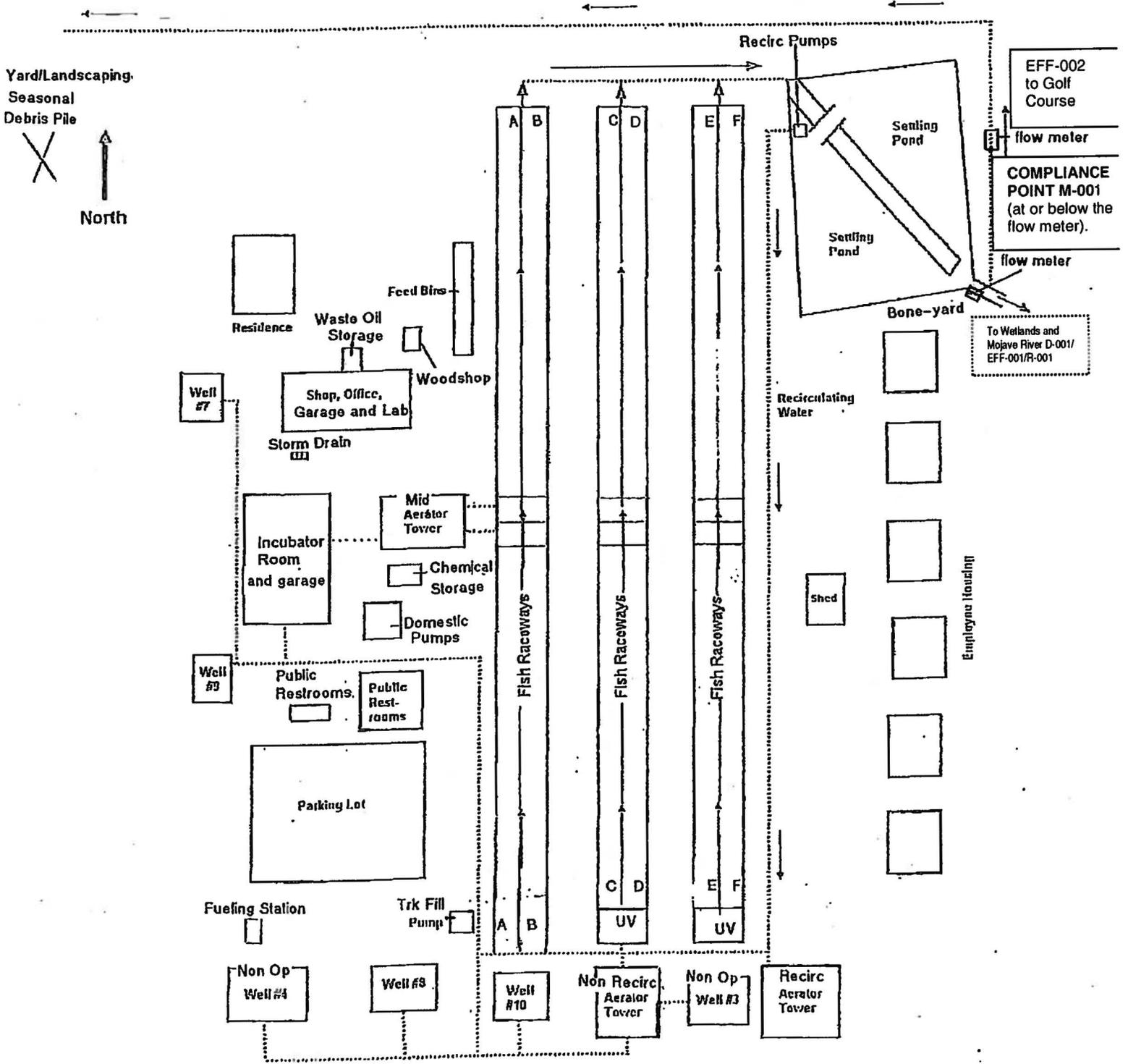
ATTACHMENT B – TOPOGRAPHIC MAP



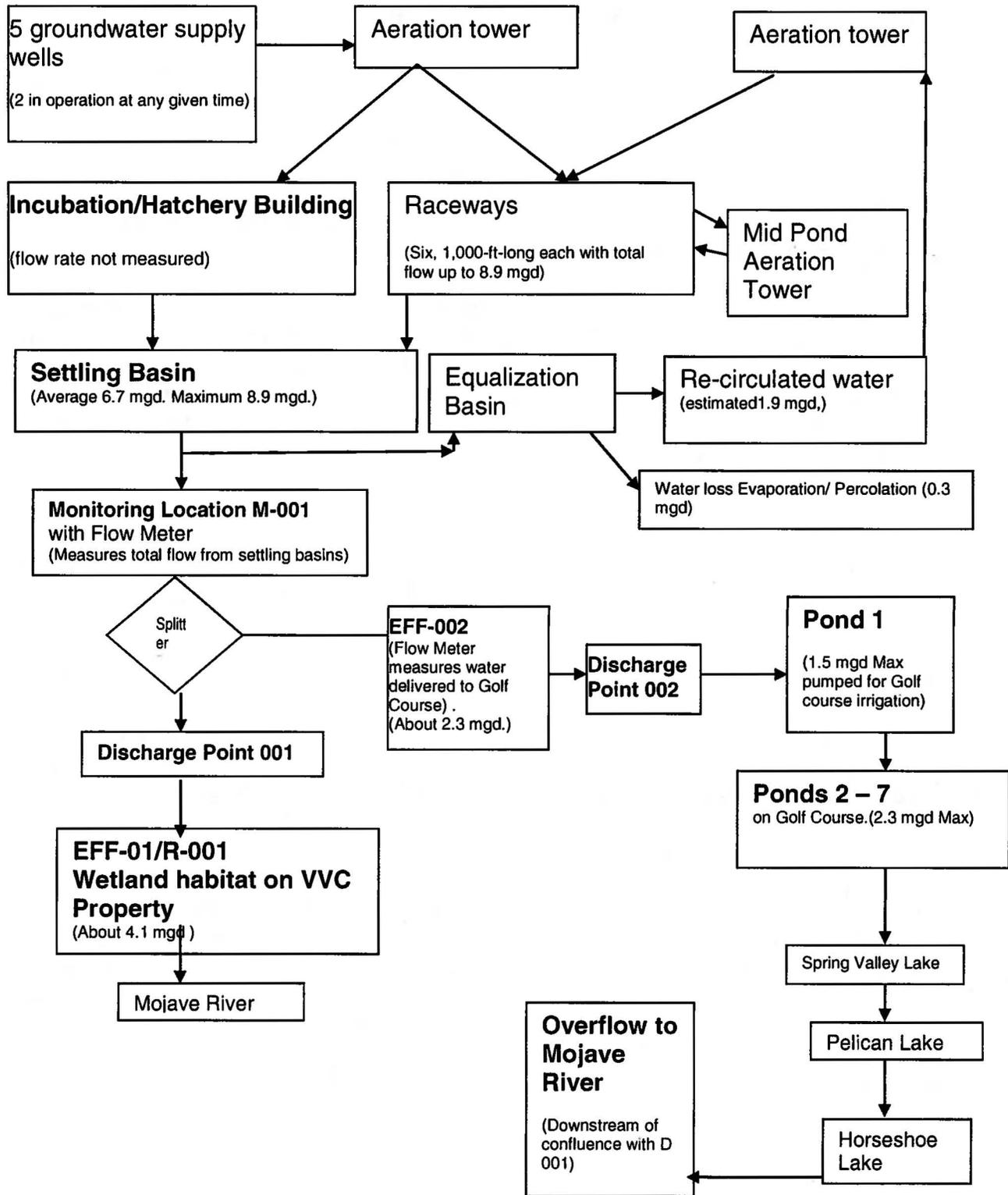
Mojave River Fish Hatchery
12550 Jacaranda Avenue
Victorville, CA 92395
San Bernardino County

Latitude: 34° 28' 45" N
Longitude: 117° 15' 38" W
Section 36, T5N, R4W, SBB&M
USGS Hesperia 7.5 Minute Quadrangle

ATTACHMENT C – FLOW SCHEMATIC



Flow Diagram



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (Water Code) and is grounds for enforcement action, for permit termination, revocation and re-issuance, or denial of a permit renewal application [40 CFR §122.41(a)].
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act 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 Order has not been modified to incorporate the requirement [40 CFR §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 Order [40 CFR §122.41(c)].

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

The Discharger shall 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 Order. Proper operation and maintenance also includes 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 Order [40 CFR §122.41(e)].

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges [40 CFR §122.41(g)].

2. The issuance of this Order 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 CFR §122.5(c)].

F. Inspection and Entry

The Discharger shall allow the Lahontan Water Quality Control Board (RWQCB), State Water Board, United States Environmental Protection Agency (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 [40 CFR §122.41(i)] [Water Code 13383(c)]:

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 Order [40 CFR §122.41(i)(1)];
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order [40 CFR §122.41(i)(2)];
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order [40 CFR §122.41(i)(3)];
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location [40 CFR §122.41(i)(4)].

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility [40 CFR §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 CFR §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 I.G.3 and I.G.5 below [40 CFR §122.41(m)(2)].
3. Prohibition of bypass – Bypass is prohibited, and the Water Board may take enforcement action against a Discharger for bypass, unless [40 CFR §122.41(m)(4)(i)]:

- a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage [40 CFR §122.41(m)(4)(A)];
 - 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 [40 CFR §122.41(m)(4)(B)]; and
 - c. The Discharger submitted notice to the Water Board as required under Standard Provision – Permit Compliance I.G.5 below [40 CFR §122.41(m)(4)(C)].
4. The Water Board may approve an anticipated bypass, after considering its adverse effects, if the Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above [40 CFR §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 a notice, if possible at least 10 days before the date of the bypass [40 CFR §122.41(m)(3)(i)].
 - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below [40 CFR §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 CFR §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 paragraph H.2 of this section 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 CFR §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 CFR §122.41(n)(3)]:

- a. An upset occurred and that the Discharger can identify the cause(s) of the upset [40 CFR §122.41(n)(3)(i)];
 - b. The permitted facility was, at the time, being properly operated [40 CFR §122.41(n)(3)(i)];
 - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b [40 CFR §122.41(n)(3)(iii)]; and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above [40 CFR §122.41(n)(3)(iv)].
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof [40 CFR §122.41(n)(4)].

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

This Order is not transferable to any person except after notice to the Water Board. The Water Board may require modification or revocation and re-issuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code [40 CFR §122.41(l)(3)] [40 CFR §122.61].

III. STANDARD PROVISIONS – MONITORING

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity [40 CFR §122.41(j)(1)].

- B.** Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order [40 CFR §122.41(j)(4)] [40 CFR §122.44(i)(1)(iv)].

IV. STANDARD PROVISIONS – RECORDS

- A.** Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the Discharger shall 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 Order, and records of all data used to complete the application for this Order, 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 Water Board Executive Officer at any time [40 CFR §122.41(j)(2)].

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements [40 CFR §122.41(j)(3)(i)];
2. The individual(s) who performed the sampling or measurements [40 CFR §122.41(j)(3)(ii)];
3. The date(s) analyses were performed [40 CFR §122.41(j)(3)(iii)];
4. The individual(s) who performed the analyses [40 CFR §122.41(j)(3)(iv)];
5. The analytical techniques or methods used [40 CFR §122.41(j)(3)(v)]; and
6. The results of such analyses [40 CFR §122.41(j)(3)(vi)].

C. Claims of confidentiality for the following information will be denied [40 CFR §122.7(b)]:

1. The name and address of any permit applicant or Discharger [40 CFR §122.7(b)(1)]; and
2. Permit applications and attachments, permits and effluent data [40 CFR §122.7(b)(2)].

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Water Board, State Water Board, or USEPA within a reasonable time, any information which the Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or

terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Water Board, State Water Board, or USEPA copies of records required to be kept by this Order [40 CFR §122.41(h)] [Water Code 13267].

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with paragraph (2.) and (3.) of this provision [40 CFR §122.41(k)].
2. All permit applications shall be signed as follows:
 - a. For a corporation: By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures [40 CFR §122.22(a)(1)];
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively [40 CFR §122.22(a)(2)]; or
 - c. For a municipality, State, federal, or other public agency: 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 CFR §122.22(a)(3)].
3. All reports required by this Order and other information requested by the Water Board, State Water Board, or USEPA shall be signed by a person described in paragraph (b) of this provision, 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 paragraph (2.) of this provision [40 CFR §122.22(b)(1)];
 - b. The authorization specified 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 CFR §122.22(b)(2)]; and

- c. The written authorization is submitted to the Water Board, State Water Board, or USEPA [40 CFR §122.22(b)(3)].
4. If an authorization under paragraph (3.) of this provision 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 paragraph (3.) of this provision must be submitted to the Water Board, State Water Board or USEPA prior to or together with any reports, information, or applications, to be signed by an authorized representative [40 CFR §122.22(c)].
5. Any person signing a document under paragraph (2.) or (3.) of this provision shall 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 CFR §122.22(d)].

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order [40 CFR §122.41(l)(4)].
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices [40 CFR §122.41(l)(4)(i)].
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Water Board [40 CFR §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 Order [40 CFR §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 Order, shall be submitted no later than 14 days following each schedule date [40 CFR §122.41(l)(5)].

E. Twenty Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance [40 CFR §122.41(l)(6)(i)].
2. The following shall be included as information that must be reported within 24 hours under this paragraph [40 CFR §122.41(l)(6)(ii)]:
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Order [40 CFR §122.41(l)(6)(ii)(A)].
 - b. Any upset that exceeds any effluent limitation in this Order [40 CFR §122.41(l)(6)(ii)(B)].
 - c. Violation of a maximum daily discharge limitation for any of the pollutants listed in this Order to be reported within 24 hours [40 CFR §122.41(l)(6)(ii)(C)].
3. The Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours [40 CFR §122.41(l)(6)(iii)].

F. Planned Changes

The Discharger shall give notice to the 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 CFR §122.41(l)(1)]:

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 40 CFR §122.29(b) [40 CFR §122.41(l)(1)(i)]; or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. [40 CFR §122.41(l)(1)(ii)].

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 [40 CFR §122.41(l)(1)(iii)].

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements [40 CFR §122.41(l)(2)].

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. [40 CFR §122.41(l)(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 Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information [40 CFR §122.41(l)(8)].

VI. STANDARD PROVISIONS – ENFORCEMENT

The Water Board is authorized to enforce the terms of this Order under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Water Board as soon as they know or have reason to believe [40 CFR §122.42(a)]:

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [40 CFR §122.42(a)(1)]:
 - a. 100 micrograms per liter (µg/L) [40 CFR §122.42(a)(1)(i)];
 - b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony [40 CFR §122.42(a)(1)(ii)];

- c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [40 CFR §122.42(a)(1)(iii)]; or
 - d. The level established by the Water Board in accordance with 40 CFR §122.44(f) [40 CFR §122.42(a)(1)(iv)].
2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" [40 CFR §122.42(a)(2)]:
 - a. 500 micrograms per liter ($\mu\text{g/L}$) [40 CFR §122.42(a)(2)(i)];
 - b. 1 milligram per liter (mg/L) for antimony [40 CFR §122.42(a)(2)(ii)];
 - c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge [40 CFR §122.42(a)(2)(iii)]; or
 - d. The level established by the Water Board in accordance with 40 CFR §122.44(f) [40 CFR §122.42(a)(2)(iv)].

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (CFR) at 40 CFR 122.48 requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements which implement the 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 of the Water Board.
- B. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. Calculated flows shall be calculated consistent with accepted engineering practices. The Discharger must provide information on how the flow measurement is obtained at each location where flow monitoring is required. The information must include the instrument used, last calibration date and results and the name of the person who conducted the measurement.
- C. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the Department of Public Health (DPH; formerly the Department of Health Services). Laboratories that perform sample analyses shall be identified in all monitoring 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 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 Water Board staff. The QA/QC Program must conform to USEPA guidelines or to procedures approved by the 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. A QA/QC program approved by the Executive Officer is followed, and
 - 2. Detection limits, accuracy, and precision of the kits and meters meet EPA and Surface Water Ambient Monitoring Program (SWAMP) standards, and
 - 3. All results for field testing must be reported to Lahontan Water Board in quarterly and annual self monitoring reports with supporting QA/QC data.
- D. 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.

E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program. The results of all monitoring required by this Order shall be reported to the Water Board and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order.

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-1a. Monitoring Station Locations

Discharge Type	Name
Influent	INF-001
Effluent and Receiving Water Analyses	M-001
Total Combined Effluent Flow	M-001
Effluent Flow to Unnamed Channel (Calculated)	EFF-001
Effluent Flow to Golf Course	EFF-002
Visible Monitoring	D-002

Table E-1b. Description of Monitoring Locations

Name	Description
INF-001	Raceway head boxes where a representative sample of influent water can be collected prior to fish rearing ponds or mixture with recirculation water.
M-001	Total Flow Meter: Is located at the outfall of the effluent settling pond after the return water split to the second settling pond and prior to the final splitter box and sluice gate. This location is used to monitor total flow from facility. For the remainder of the constituents, the compliance point samples are collected from the splitter box.
D-001/R-001	This location is after the splitter box at the fence line just prior to entering the wetland habitat.
EFF-002	Flow is measured at the flow meter located in the channel to Spring Valley Lake Home Owners Golf Course, after the splitter box and before the channel terminates at Pond 1.
D-002	At property line, where the channel, described above, terminates near the Golf Course Pond 1.

III. INFLUENT MONITORING REQUIREMENTS (INF-001)

The influent shall be sampled on the same days that the effluent and receiving water samples are taken for the constituents listed. The Discharger shall monitor the influent to the facility at Monitoring Location INF-001 as follows:

Table E-2. Influent Monitoring (INF-001)

Parameter	Units	Sample Type	Minimum Sampling Frequency
Boron	mg/L	Grab	1 / quarter ¹
Chloride	mg/L	Grab	1 / quarter ¹
Electrical Conductivity	µS/cm	Grab	1 / month
Fluoride	mg/L	Grab	1 / quarter ¹
Hardness	mg/L	Grab	1/quarter ¹
Nitrate (as N)	mg/L	Grab	1/quarter ¹
Nitrogen, Total (as N)	mg/L	Grab	1/quarter ¹
pH	standard units	Grab	1 / month
Sulfate	mg/L	Grab	1 / quarter ¹
Temperature	Degrees C	Instantaneous	1/month
Total Dissolved Solids (TDS)	mg/L	Grab	1 / quarter ¹
Total Orthophosphate (as P)	mg/L	Grab	1 / quarter ¹

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-001

For the purpose of assessing compliance with effluent and receiving water limitations of this Order, the Discharger shall monitor wastewater discharged from the Facility at Monitoring Location M-001.

Table E-3. Effluent and Receiving Water Monitoring (M-001)

Parameter	Units	Sample Type	Minimum Sampling Frequency
Ammonia (as Nitrogen)	mg/L	Grab	1 / quarter ²
Boron	mg/L	Grab	1 / year
Chloramine-T	mg/L	Grab	1/month during use ¹
Chloride	mg/L	Grab	1 / quarter ²
Dissolved Oxygen	mg/L	Grab	1 / quarter
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1 / month during cleaning operations (or other operational modes that provides the worst case for affecting the electrical conductivity of the effluent)
Flow (Total Combined)	mgd	Meter	1 / month
Fluoride	mg/L	Grab	1 / year
Formaldehyde	mg/L	Grab	1/month during use ¹
Hardness	mg/L	Grab	When monitoring for other constituents at least 1 / month ³
Hydrogen Peroxide	mg/L	Grab	1/month during use ¹
Nitrate (as Nitrate)	mg/L	Grab	1 / quarter ²
Nitrogen, Total (as N)	mg/L	Grab	1 / quarter ²
Orthophosphate Total	mg/L	Grab	1 / quarter ²

Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	standard units	Grab	1 / month during cleaning operations (or other operational modes that provides the worst case for affecting the pH of the effluent)
Potassium Permanganate	mg/L	Grab	1/month during use ¹
PVP Iodine (iodophor)	mg/L	Grab	1/month during use ¹
Settleable Solids	ml/L	Grab	1 / month during cleaning operations (or other operational modes which increase the discharge of total suspended or settleable solids)
Sulfate	mg/L	Grab	1 / quarter ²
Temperature	°F	Instantaneous	Minimum of 1 / month
Total Dissolved Solids	mg/L	Grab	1 / quarter ²
Total Suspended Solids (TSS)	mg/L	Grab	1 / month during cleaning operations (or other operational modes which increase the discharge of total suspended or settleable solids)

- ¹ 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 a calculated final effluent concentration upon approval by the Executive Officer.
- ² After at least 4 quarterly samples, the Executive Officer may reduce sample frequency to 1/year for specific constituents if the Discharger requests a reduction and can demonstrate constituent results are less than the method detection limit (MDL) the concentrations indicate no reasonable potential to exceed numeric receiving water limitations or the constituent concentrations have less than significant statistical variation (at a 90% confidence level).
- ³ After at least 12 monthly samples, the Executive Officer may reduce monitoring frequency to 1/year for specific constituents if the Discharger requests a reduction and can demonstrate constituent results are less than the method detection limit (MDL), the concentrations indicate no reasonable potential to exceed numeric receiving water limitations or the constituent concentrations have less than significant statistical variation (at a 90% confidence level).

B. Monitoring Location EFF-002

The Discharger shall monitor wastewater flow discharged from the Facility (Discharge Point 002) at Monitoring Location EFF-002 as follows:

Table E-4. Flow Monitoring (EFF-002)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Test Method
Flow	mgd	Meter	1 / Month ¹	40 CFR Part 136 Methods

¹ The volume of wastewater discharged shall be recorded every month. For each discharge period, the Discharger shall calculate and report the total volume of wastewater discharged and the average flow rate in gallons per day.

C. Discharge Point D-001/EFF-001/R-001

The Discharger shall calculate wastewater flow discharged from the site at D-001 once per month in millions of gallons per day (mgd). The flow rate at this location is the total flow rate (M-001) minus the flow rate at EFF-002.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS – NOT APPLICABLE

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

Monitoring Location R-001 (Surface Water)

Because the receiving water at Discharge Point D-001 is an effluent dominated channel that flows to an effluent dominated wetland, the Discharger shall monitor Receiving Water (R-001) for determination of compliance with Section V, Receiving Water Limitations at Monitoring Point M-001, as described in Table E-3, above.

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. This information shall be reported at quarterly intervals and submitted with the quarterly self monitoring reports using the drug and chemical usage report table found in Attachment I of this Order. At such time as the Discharger is required to begin submitting self-monitoring reports electronically, it shall continue to submit paper copies of the quarterly drug and chemical use reports to the Water Board:

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, administered in feed), 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, pond or raceway where application was made, and the flow measured in million gallons per day (mgd) in the treatment units.

5. The total flow through the Facility measured in mgd to the discharge point after mixing with the treated water.
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, flush treatment) and for which effluent monitoring is not otherwise required, the estimated concentration in the effluent at the point of discharge.

Calculation of Concentration

For drugs or chemicals used in an immersion bath, "drip" treatment, or in other direct application to waters at the Facility, use the following formula to calculate concentration (C) at the point of discharge.

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

$C = (\text{treatment concentration}) \times (\text{flow in treatment area}) \div (\text{flow at point of discharge})$

Example: Potassium permanganate (KMNO₄) concentration

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

$C = 2.0 \text{ mg/L} \times 0.09$

C = 0.18 mg/L potassium permanganate 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*.

B. Priority Pollutant Monitoring

Potential discharge of priority pollutants is based on the probability of the pollutants being present in the groundwater pumped from source wells and from data collected from CAAP facilities. Data compiled from CAAP facilities, local drinking water wells and the State Board's Groundwater Ambient Monitoring Association (GAMA) database were used to determine the potential for metals and other priority pollutants to occur. Accordingly, the Water Board requires sampling and analysis of the influent and effluent for priority pollutants listed in Attachment J at least once per permit cycle. The samples shall be analyzed for priority pollutants **in the year 2014 and reported to the Water Board no later than February 1, 2015.** (Refer to Attachment J for the specific monitoring requirements.)

C. ANNUAL BMP AND SWPPP REPORTING

The Discharger must annually (February 1) certify that the BMP Plan for Aquaculture Operations and the Facility Storm Water Pollution Prevention Plan meet the requirements of this permit and the Plans are being implemented as written. If changes 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 Water Board along with the above certification.

D. Visual Observations

1. Within two business days (48 hours) after each qualifying rain event the Discharger shall observe and record the presence or absence of floating and suspended materials, a sheen on the surface, discolorations, turbidity, odors, and source(s) of any observed pollutants. These observations shall be made at D-002, after stormwater co-mingles with effluent flows. Visual Observations shall be submitted in the next quarterly Self-Monitoring Report after the observations and summarized in the annual report.
2. 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 are reported and described in the next quarterly report following the discharge and are summarized in the annual report.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). Until such notification is

given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal. At such time as the Discharger is required to begin submitting self-monitoring reports electronically, it shall continue to submit paper copies of the quarterly drug and chemical use reports to the Water Board.

2. The Discharger shall submit quarterly SMRs including the results for all monitoring specified in this Monitoring and Reporting Program. The Discharger shall submit SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. Quarterly reports shall be due on **May 1, August 1, November 1, and February 1** following each calendar quarter. 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	Reporting Due with SMR on...
1 / First discharge event/reporting period	Calendar day of first discharge event/quarter. (Midnight through 11:59 PM)	May 1 August 1 November 1 February 1
1 / day	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	May 1 August 1 November 1 February 1
1 / month	1 st day of calendar month through last day of calendar month	May 1 August 1 November 1 February 1
1 / quarter, and 2 / quarter	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
1 / year	January 1 through December 31	February 1
1 / permit cycle	In the year 2014	By February 1, 2015

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR 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 ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

- b. Sample results less than the ML, 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 as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). 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 (+ 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.

5. The Discharger shall 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.
6. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; 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.
7. SMRs must be submitted to the Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

California Regional Water Quality Control Board
Lahontan Region
14440 Civic Drive, Suite 200
Victorville, CA 92392

C. Discharge Monitoring Reports (DMRs) – Not Applicable

D. Other Reports – Not Applicable

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ATTACHMENT F – FACT SHEET

As described in Findings in Section II 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	6B360812001
Discharger	California Department of Fish and Game
Name of Facility	Mojave River Fish Hatchery
Facility Address	12550 Jacaranda Avenue
	Victorville, CA 92395
	San Bernardino County
Facility Contact, Title and Phone	Robert M. Diaz, Hatchery Manager, (760) 245-9981
Authorized Person to Sign and Submit Reports	Robert M. Diaz, Hatchery Manager, (760) 245-9981
Mailing Address	12550 Jacaranda Avenue Victorville, CA 92395
Billing Address	Same as Mailing Address
Type of Facility	Concentrated Aquatic Animal Production/ Fish Hatchery (SIC 0921)
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	C
Pretreatment Program	Not Applicable
Reclamation Requirements	Not Applicable
Facility Permitted Flow	8.9 million gallons per day
Facility Design Flow	Not Applicable
Watershed	Upper Mojave Hydrologic Area
Receiving Water	Mojave River, minor surface waters tributary to the Mojave River and ground water
Receiving Water Type	Inland Surface Water

- A. The California Department of Fish and Game (hereinafter Discharger) is the owner and operator of the Mojave River 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 the Mojave River, a water of the United States, minor surface waters that are tributary to the Mojave River and groundwater. The Discharge is currently regulated by Order No. R6V-2006-0028 which was adopted on June 14, 2006. Order No. R6V-2006-0028 expires on June 14, 2011.
- C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit dated November 30, 2010.

II. FACILITY DESCRIPTION

The Discharger owns and operates a CAAP facility. Based on the ROWD, as modified by the DFG on August 9, 2011, the Facility has the capacity for producing between 450,000 and 675,000 lbs of rainbow trout and between 15,000 lbs and 22,000 lbs of brown trout. About 65,000 to 98,000 pounds of food are fed to the fish in June, which is the month of maximum feeding. The Facility includes five ground water wells, three aeration towers, an ultraviolet (UV) disinfection system, an egg incubation building, six production raceways, one flow-through sedimentation treatment pond, two flow meters, a recirculation pond, and a recirculation pump. Attachment B provides a topographic map of the area around the Facility. Attachment C provides a wastewater flow schematic and diagram of the Facility.

Well water from five ground water supply wells (with two to four wells used at a time) is treated for dissolved oxygen in an aeration tower. After aeration, the water supply is split. Some of the aerated water flows to the flow-through production raceways and some flows to an egg incubation building. Water in the raceways is aerated a second time in the mid pond aeration tower. Some of the effluent from the production raceways is pumped to a third aeration tower and re-circulated with aerated well water for reuse in the production raceways. This reused water is referred to as recirculation water. Mixture of re-circulated water and well water is controlled with valves at the head boxes.

Wastewater from the production raceways and egg incubation building is treated in one flow-through effluent settling basin prior to discharge. Treated effluent flow is split to a recirculation basin and then by a gate valve system immediately downstream of the outlet from the settling basin at Monitoring Location M-001. The gate valve directs effluent to either the Mojave River (Discharge Point 001) or to property owned by Spring Valley Lake Home Owner’s Association (HOA) (Discharge Point 002). Effluent from the Facility ultimately reaches the Mojave River surface and ground waters at three locations: the Mojave River near Discharge Point 001, overflow from Spring Valley Lake to the Mojave River, and overflow from Horseshoe Lake to the Mojave River at the Lower Narrows after passing through Mojave Narrows Regional Park.

Receiving waters affected by effluent include channels that connect a series of minor surface waters, wetlands, and perennial flows in the Mojave River at the Lower Narrows; subsurface flows in the riparian aquifer under the dry Mojave River bed upstream of the Lower Narrows; and seasonal flows in the Mojave River upstream of the Lower Narrows.

Effluent discharged from the splitter box (Discharge Point 001) flows through a stream channel with ponds and wetlands on Victor Valley Community College property, and through a culvert to the Mojave River. Some of the water percolates to the riparian aquifer prior to reaching the Mojave River (surface water).

Effluent discharged at Discharge Point 002 passes through a series of channels that connect holding ponds, Spring Valley Lake, Pelican Lake, Horseshoe Lake, and the Mojave River at the Lower Mojave Narrows. Effluent from Discharge Point 002 also percolates to the riparian aquifer under the Mojave River bed. After Discharge Point 002, the effluent passes through six holding ponds on HOA property. Water from the holding ponds is either used for irrigation of the HOA golf course or pumped to Spring Valley Lake. Effluent mixed with water from additional sources in Spring Valley Lake is discharged at two locations to either (1) directly to the Mojave River upstream of the Lower Narrows or (2) to Pelican Lake. Water from Pelican Lake flows to Horseshoe Lake. Overflow from Horseshoe Lake flows down a channel that meets the Mojave River at the Lower Narrows. Both Pelican Lake and Horseshoe Lake are located in the flood plain of the Mojave River on property managed by San Bernardino County Mojave Narrows Regional Park.

While flows are forced to the surface year round at the Mojave Narrows by uplifted bedrock, flows in the vicinity of the Facility are normally below the surface of the normally dry riverbed. After storm events or snowmelt, water volume in the river may be sufficient to support above ground flows near the Facility. During dry periods, effluent from Discharge Point 001 percolates into the riparian aquifer under the river bed. Even during dry seasons, wetlands and riparian habitat created and maintained by Facility effluent are often present in the Mojave River. Beaver activity in effluent dominated portions of the effluent channel and riverbed often creates ponds and wetlands in the riverbed that extend beyond Victor Valley Community College property.

Attachment B provides a topographic map of the area around the facility. Attachment C provides a wastewater flow schematic and diagram of the Facility.

Current discharges from the Facility include unused food, fish excrement, and fish health additives to food and water. The Discharger currently uses, or has previously used during the last permit term, the following chemicals and drugs: sodium chloride (salt) as a flush treatment in the raceways as a fish-cleansing agent to control the spread of fish disease; potassium permanganate to control gill bacteria on fish; formalin (formaldehyde) as a fungicide treatment on fish in the raceways; hydrogen peroxide to control external parasites; and copper sulfate to control the growth of external parasites and bacteria on fish. On January 11, 2010, the Director of Fish and Game certified "the use of copper sulfate products has been discontinued at all DFG hatcheries."

In addition to the above aquaculture chemicals, the Discharger and the California Department of Fish and Game (DFG) Fish Health Laboratory requested to include in this Order a list of aquaculture drugs and chemicals (see Attachment H) that may be used at all DFG hatcheries in the Region. These aquaculture drugs and chemicals, prescribed by the DFG Fish Health Laboratory, are to be used on an "as needed" basis to treat various fish disease and parasitic outbreaks.

A. Description of Wastewater and Biosolids Treatment or Controls

Wastewater from the raceways and incubation building is discharged to one flow-through settling basin. Recirculation water is channeled into a second basin where it is pumped. The wastewater recycled back to the raceways (approximately 1.9 million gallons per day or mgd) is pumped directly from the recirculation basin to the aerator prior to mixing with the aerated influent well water. Each settling basin is triangle shaped, with a surface area of 18,200 square feet and a depth that tapers from 12 feet to 16 feet.

A schematic of the Facility is shown in Attachment C.

B. Discharge Points and Receiving Waters

Wastewater from the settling basins flows to a sluice gate where flow is controlled by valves to either a series of ponds located on property owned by Victor Valley College (Discharge Point 001), and/or into a series of six to seven holding ponds located on a golf course owned by Spring Valley Lake HOA (Discharge Point 002). Based on flow monitoring data from the flow meter from the settling basins (Monitoring Location M-001) the average flow from the settling basins is 8.2 mgd, with a maximum of 8.9 mgd. This flow reading at Monitoring Location M-001 represents the total flow being discharged from the Facility.

Wastewater diverted from the splitter box to the receiving water consisting of a series of ponds located on property owned by Victor Valley College and flows through a wetland habitat area, over a berm, past a weir, and is eventually discharged into the Mojave River. The Mojave River is located within the Upper Mojave Hydrologic Area (Hydrologic Unit No. 628.20) of the Mojave Hydrologic Unit, and the ground waters of the Upper Mojave River Valley Ground Water Basin (Basin No. 6-42). The Mojave River is normally dry with subsurface flows and seasonal surface water runoff.

Approximately 3.3 mgd of the settling basin effluent is diverted from the sluice gate to Discharge Point 002, which discharges into a series of six to seven holding ponds located on the Spring Valley HOA Golf Course. Up to 1.5 mgd of this discharge from holding Pond 1 is used for irrigation supply water at an adjacent golf course (Spring Valley Lake Country Club), the remaining water is piped to Spring Valley Lake. The water from Spring Valley Lake flows into a canal, into Pelican Bay, into Horseshoe Lake, and eventually into an earthen ditch which discharges to the Mojave River.

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

2. Discharge Point 001

Effluent limitations contained in the previous Order for discharges from the effluent settling basins to Discharge Point 001 (Monitoring Location M-001) and representative monitoring data from the term of the previous Order are as follows:

Table F-2. Summary of Existing Requirements and SMR Results – Monitoring Location M-001

Parameter	Units	Effluent Limitation		Monitoring Data (From June 2006 to December 2010)	
		Monthly Average	Instantaneous Maximum	Highest Monthly Average Discharge	Highest Instantaneous Maximum Discharge
pH ¹	standard units	not less than 6.0 nor greater than 9.0		--	7.12 (lowest) 8.23 (highest)
Copper, Total Recoverable	µg/L	4.99	10.0	No samples were collected or analyzed	
Formaldehyde	mg/L	0.65	1.3	No samples were collected or analyzed	
Hydrogen Peroxide	mg/L	--	1.3	No samples were collected or analyzed	
Total Suspended Solids (TSS) ¹	mg/L	6.0	15.0	4.0	4.5
Settleable Solids ¹	ml/L	0.1	--	<0.1	<0.1

¹ Grab pair sampling was conducted for the constituents (two grab samples collected on the same day, not less than 2 hours, or greater than 4 hours, apart from each other).

2. Combined Flow for Discharge Points 001 and 002

The previous Order contained a flow limitation on the combined average flow of wastewater discharged to the Mojave River (Discharge Point 001) and the golf course (Discharge Point 002) during any 30 day period to not exceed 8.9 mgd.

Flow monitoring data from June 2006 to December 2010 showed the total average monthly flow leaving the effluent settling basins (Monitoring Location M-001) ranged from 3.78 to 8.6 mgd, with an average of 6.42 mgd. The flow from Discharge Point 002 ranged from 0.71 to 4.6 mgd, with an average of flow of 2.93 mgd. The calculated average flow to the Mojave River (Discharge Point 001) ranged from 0.67 to 6.3 mgd, with an average flow of 3.48 mgd.

3. Other Required Monitoring at Discharge Point 001

Order No. R6V-2006-0028 did not include effluent limitations at Discharge Point 001 (Monitoring Location M-001) for boron, chloride, dissolved oxygen, electrical conductivity, fluoride, total dissolved solids, turbidity, nitrate, nitrogen, orthophosphate, sulfate, and temperature. However, monitoring for these parameters was required at Monitoring Location M-001. Representative monitoring data at Discharge Point 001 (sampled at Monitoring Location M-001) for these constituents from the term of the previous Order are as follows:

Table F-3. Other Required Monitoring and SMR Results – Monitoring Location M-001/D-001

Parameter	Units	Monitoring Data (From June 2006 to December 2010)		
		Lowest Instantaneous Minimum	Average for June 2006 to June 2010	Highest Instantaneous Maximum
Temperature	°F	50	59	62
Boron ¹	mg/L	ND (0.1)	--	ND (0.1)
Chloride ¹	mg/L	13	--	14
Dissolved Oxygen ¹	mg/L	3.2	5.87	8.9
Electrical Conductivity ¹	µS/cm	219	234	279
Fluoride ¹	mg/L	0.25	0.29	0.32
Total Dissolved Solids ¹	mg/L	130	151	216
Turbidity ¹	NTU	0.18	1.42	2.3
Nitrate ¹ as N	mg/L	0.64	0.94	1.2
Sulfate ¹	mg/L	12	--	14
Total Nitrogen ¹	mg/L	0.73	0.86	1.0
Dissolved Orthophosphate ¹	mg/L	0.16	0.37	0.91

¹ Grab pair sampling was conducted for the constituents (two grab samples collected on the same day, not less than 2 hours, or greater than 4 hours apart from each other).

The Discharger reported that 175,800 lbs of salt (sodium chloride) was used between July 2006 and December 2010. The Discharger sampled the influent and effluent for electrical conductivity (EC) between July 2007 and June 2010 on 33 days during salt treatments. The influent EC ranged between 208 and 270 µS/cm and the effluent EC ranged between 219 and 279 µS/cm. The maximum increase on any one day between influent and effluent was reported as 48 µS/cm. The overall average increase between influent and effluent for the 33 samples was 1.7 µS/cm. It should be noted that on 11 of the 33 days sampled the effluent EC was reported as less than the influent EC.

D. Compliance Summary

1. Discharge Point 001

Order No. R6V-2006-0028 required the Discharger to sample the effluent at Discharge Point 001 (Monitoring Location M-001) during chemical usage at a time when the concentration of the chemical in the effluent is expected to be at a maximum. The Discharger reported that 5 lbs of copper sulfate was used on May 31, 2008. The Discharger reported that 230 gallons of Formalin (formaldehyde) was used between July 2006 and March 2010 and 150 gallons of hydrogen peroxide was used between August 2007 and June 2010. Between July 2006 and June 2010 the Discharger reported the use of 1268.5 ounces (79.28 lbs) of potassium permanganate. No samples were collected or analyzed for the above chemicals as required in the previous Order No. R6V-2006-0028.

2. Receiving Water Monitoring at Monitoring Locations R-001U and R-001D

Order No. R6V-2006-0028 required the Discharger to monitor the Mojave River at Monitoring Locations R-001U (upstream) and R-001D (downstream) quarterly for temperature, pH, and dissolved oxygen. Monitoring for boron, chloride, fluoride, and sulfate was required once per year. Copper (total recoverable) and formaldehyde samples were required for one discharge event during use. The Discharger did not monitor the receiving water as required by Order No. R6V-2006-0028.

3. Sediment Monitoring at Monitoring Location R-001D

Order No. R6V-2006-0028 required the Discharger to monitor the Mojave River sediment at Monitoring Location R-001D (downstream) for copper once per year and for manganese twice during the permit term during the 1st and 4th years. The Discharger did not monitor the sediment as required by Order No. R6V-2006-0028.

E. Planned Changes – Copper Sulfate is no longer used by the facility.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order is 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 a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100 through 21177.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Water Board adopted a Water Quality Control Plan for the Lahontan Region (hereinafter Basin Plan) which became effective on March 31, 1995 that 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, State Water Resources Control Board (State Water Board) Resolution No. 88-63 requires that, with certain exceptions, the Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. Beneficial uses applicable to the Mojave River and the Upper Mojave River Valley Ground Water Basin are as follows:

Table F-4. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Wetlands tributary to the Mojave River (and shallow ground water)	<u>Existing:</u> Municipal and domestic supply (MUN); agricultural supply (AGR); ground water recharge (GWR); contact water recreation (REC-1); non-contact water recreation (REC-2); commercial and sport fishing (COMM); warm freshwater habitat (WARM); cold freshwater habitat (COLD); and wildlife habitat (WILD).
002	Spring Valley Lake & other minor surface waters, including wetlands	<u>Existing:</u> Municipal and domestic supply (MUN); agricultural supply (AGR); ground water recharge (GWR); contact water recreation (REC-1); non-contact water recreation (REC-2); commercial and sport fishing (COMM); warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); rare, threatened, or endangered species (RARE); migration of aquatic organisms (MIGR); water quality enhancement (WQE); and flood peak attenuation/flood water storage (FLD).
002	Upper Mojave River Valley Ground Water Basin	<u>Existing:</u> Municipal and domestic supply (MUN); agricultural supply (AGR); industrial service supply (IND); freshwater replenishment (FRSH); and aquaculture (AQUA).

2. **Thermal Plan.** The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.
3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18,

2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

4. **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 for California by the USEPA through the NTR and to the priority pollutant objectives established by the Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA 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.
5. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes (40 CFR 131.21, 65 Fed. Reg. 24641 (April 27, 2000)). Under the revised regulation (also known as the Alaska rule), 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.
6. **Antidegradation Policy.** 40 CFR 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. 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 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 CFR 131.12 and State Water Board Resolution No. 68-16. This permit meets the antidegradation policy because it does not allow additional degradation of water quality beyond what was allowed by the previous permit.
7. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR §122.44(l) prohibit 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. All effluent limitations and/or receiving water limitations in the Order are at least as stringent as the effluent limitations in the previous Order.

8. **Monitoring and Reporting Requirements.** Section 122.48 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the Water Code authorize the Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement federal and State requirements. This MRP is provided in Attachment E.

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 strictly 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 U.S. Food and Drug Administration (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 diagnosed by fish pathologists. 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 Discharger's responsibility 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 permit. 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 eight new animal drugs approved by FDA for use in food-producing aquatic species. These eight FDA-approved new animal drugs include the following:

- (1) Chorionic gonadotropin (Chlorulun®), used for spawning;
- (2) Oxytetracycline (Terramycin®), an antibiotic;
- (3) Sulfadimethoxine-ormetoprim (Romet-30®), an antibiotic;
- (4) Tricaine methanesulfonate (MS-222, Finquel® and Tricaine-S), an anesthetic;
- (5) Formalin (Formalin-F®, Paracide F® and PARASITE-S®), used as a fungus and parasite treatment;
- (6) Sulfamerazine, an antibiotic;
- (7) Florfenicol (Aquaflor®), an antibiotic; and
- (8) 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:

- (1) Acetic acid, used as a dip at a concentration of 1,000-2,000 mg/L for 1-10 minutes as a parasiticide.
- (2) Carbon dioxide gas, used for anesthetic purposes.
- (3) Povidone iodine (PVP) compounds, used as a fish egg disinfectant at rates of 50 mg/L for 30 minutes during egg hardening and 100 mg/L solution for 10 minutes after water hardening.
- (4) Sodium bicarbonate (baking soda), used at 142-642 mg/L for 5 minutes as a means of introducing carbon dioxide into the water to anesthetize fish.
- (5) 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 10-30 minutes as a parasiticide.
- (6) 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:

- (1) The aquaculture drugs are used for the prescribed indications, including species and life stages where specified.

- (2) The aquaculture drugs are used at the prescribed dosages (as listed above).
- (3) The aquaculture drugs are used according to good management practices.
- (4) The product is of an appropriate grade for use in food animals.
- (5) 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 New Animal Drug*

Extra-label drug use is the actual or intended use of an approved new 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 CWA 303(d) List

The Mojave River reach between the Upper Narrows and Lower Narrows is an impaired water body segment on the CWA 303(d) List for the following pollutants: fluoride, sulfate, and total dissolved solids.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

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, receiving water limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 CFR 122.44(a) requires that

permits include applicable technology-based limitations and standards; and 40 CFR 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. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs may be established: (1) using USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) on an indicator parameter for the pollutant of concern; or (3) using 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 40 CFR 122.44(d)(1)(vi).

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 CFR 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 CFR 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 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 CFR 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(s) authorized by this Order must meet minimum federal technology-based requirements based on effluent limitations guidelines and standards (ELGs) for the Concentrated Aquatic Animal Production Point Source Category in 40 CFR Part 451.

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

- Best practicable treatment control technology currently available (BPT) represents the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and nonconventional pollutants.

- 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 nonconventional pollutants.
- Best conventional pollutant control technology (BCT) is a standard for the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering the “cost reasonableness” of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.
- 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 ELGs representing application of BPT, BAT, BCT, and NSPS. CWA section 402(a)(1) and section 40 CFR 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where effluent limitation guidelines are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the permit writer must consider specific factors outlined in 40 CFR 125.3.

A CAAP facility is defined in 40 CFR 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 CFR 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 CFR 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., total suspended solids (TSS), oil and grease (O&G), biochemical oxygen demand (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 CFR 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 constituent – TSS – while controlling the discharge of other constituents 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 best management practices (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 limits 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

- a. **Total Suspended Solids (TSS).** 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-2006-0028. The effluent limitations for TSS, 6.0 mg/L as an average monthly effluent limitation (AMEL) and 15 mg/L as an instantaneous maximum, are continued in this Order from Order R6V-2006-0028. 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. Removal of the numeric limitations for TSS would constitute backsliding under CWA Section 402(o). These limitations were established prior to the issuance of the ELG and were established as a means of controlling the discharge of solids from algae, silt, fish feces and uneaten feed.

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 one full-flow settling basin prior to discharge. Existing self-monitoring data show the Facility is able to reliably meet the numeric effluent limitations for TSS using existing wastewater treatment and control technologies, and implementation of BMPs.

This Order does not include mass effluent limitations for TSS because there are no standards that specifically require a mass-based effluent limitation, and mass of the pollutant discharged is not specifically related to a measure of operation [40 CFR 122.45(f)(iii)]. In addition, mass-based effluent limitations for TSS are not necessary because this Order includes a concentration-based limitation and a maximum daily flow limitation. This is consistent with Order No R6V-2006-0028, which did not include mass effluent limitations.

b. Flow. The previous Order R6V-2006-0028 contained a 30-day average flow limitation of 8.9 mgd for the combined discharge to the Mojave River and the golf course. The total flow of fish hatchery wastewater is still required to be measured at Monitoring Location M-001 prior to the split of effluent flow to Discharge Point 001 and to Discharge Point 002 as described in the attached Monitoring and Reporting Program (Attachment E). However, the flow limitation has been removed since the Facility’s pumping infrastructure limits the amount of water used at the Facility. Additionally, compliance with effluent limitations for total suspended solids and settleable solids ensures that flows exceeding the treatment capacity of the Facility will not be discharged. Based on these factors there is no need for flow limits in this permit.

3. Final Technology-Based Effluent Limitations

Table F-5. Summary of Technology-based Effluent Limitations - Discharge Point 001

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Suspended Solids (TSS) ¹	mg/L	6.0	--	--	15.0

¹ The Discharger shall minimize the discharge of Total Suspended Solids and Settleable Solids through the implementation of the best management practices established in Special Provision VI.C.3 of this Order.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

40 CFR 122.44(d)(1)(i) mandates 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 40 CFR 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. 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 CFR sections 131.2 and 131.10, require that all waters of the United States regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. 40 CFR 131.3(e) 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 CFR 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

As described previously in this Fact Sheet, existing beneficial uses of the Mojave River include municipal and domestic supply (MUN), agricultural supply (AGR), ground water recharge (GWR), contact (REC-1) and non-contact (REC-2) water recreation, warm freshwater habitat (WARM), cold freshwater habitat (COLD), wildlife habitat (WILD), commercial and sport fishing (COMM), rare, threatened, or endangered species (RARE), migration of aquatic organisms (MIGR), water quality enhancement (WQE), and flood peak attenuation/flood water storage (FLD).

b. Water Quality Criteria and Objectives

The Basin Plan includes both narrative and numeric water quality objectives (WQOs) applicable to all water bodies in the Lahontan Region. The Basin Plan also includes the following site-specific numeric water quality objectives applicable to the Mojave River (at Victorville) which is located downstream of the Facility discharge:

Table F-6. Basin Plan Water Quality Objectives for the Mojave River (at Victorville)

Parameter	Annual Average ¹ (mg/L)	90th Percentile ² (mg/L)
Boron	0.2	0.3
Chloride	75	100
Fluoride	0.2	1.5
Sulfate	40	100

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

² Only 10 percent of data can exceed this value.

The Basin Plan also contains the following site-specific numeric WQOs for the West Fork Mojave River (at Lower Narrows). The Lower Narrows are downstream of Discharge Point 001. Flows from Discharge Point 002 enter the Mojave River at the Lower Narrows:

Table F-7. Basin Plan Water Quality Objectives for the West Fork Mojave River (at Lower Narrows)

Parameter	Maximum (mg/L)
Nitrate (as NO3)	5
Total Dissolved Solids (TDS)	312

In addition, WQOs that apply to all surface waters (including wetlands) within the Lahontan Region are described in Pages 3-3 through 3-7 of the Basin Plan. These WQOs have been incorporated into the Order as Receiving Water Limitations.

c. Assimilative Capacity/Mixing Zone

The Basin Plan does not contain provisions for calculating dilution credits. Therefore, the worst-case dilution is assumed to be zero to provide protection for the receiving water beneficial uses. The impact of assuming zero assimilative capacity within the receiving water is that both effluent and receiving water limitations in the Order are end-of-pipe limits with no allowance for dilution within the receiving water.

3. Determining the Need for WQBELs

The Water Board conducted the reasonable potential analysis (RPA) in accordance with section 1.3 of the SIP. The Water Board analyzed effluent and receiving water data to determine if a pollutant in a discharge has the reasonable potential to cause or contribute to an excursion above a state water quality standard. For all parameters that have the reasonable potential to cause or contribute to an excursion above a water quality standard, numeric WQBELs are required. The RPA considered criteria from the CTR, NTR, and water quality objectives specified in the Basin Plan. To conduct the RPA, the Water Board identified the maximum observed effluent concentration (MEC) and maximum background concentration (B) in the receiving water for each constituent, based on data provided by the Discharger.

Section 1.3 of the SIP provides the procedures for determining reasonable potential to exceed applicable water quality criteria and objectives. The SIP specifies three triggers to complete a RPA:

- 1) Trigger 1 – If the MEC is greater than or equal to the CTR water quality criteria or applicable objective (C), a limit is needed.
- 2) Trigger 2 – If background water quality (B) > C and pollutant is detected in effluent, a limit is needed.
- 3) Trigger 3 – If other related information such as CWA 303(d) listing for a pollutant, discharge type, compliance history, etc. indicates that a WQBEL is required.

Sufficient effluent and ambient data are needed to conduct a complete RPA. If data are not sufficient, the Discharger is required to gather the appropriate data for the Water Board to conduct the RPA. Upon review of the data, and if the Water Board determines that WQBELs are needed to protect the beneficial uses, the permit will be reopened for appropriate modification.

The RPA was performed for the priority pollutants for which effluent data were available. The Discharger collected samples for priority pollutants analysis at the Facility influent ("headbox" of raceways, consisting of influent water from the five groundwater supply wells) and effluent on May 28, 2004. The Discharger also performed an additional effluent sampling for dioxins on September 16, 2004. The

RPA for the priority pollutants did not demonstrate reasonable potential to exceed applicable water quality criteria based on these two sampling events.

- a. **Constituents with No Reasonable Potential.** WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential; however, numeric receiving water limitations have been established using the Bain Plan water quality objectives. These limitations apply to the receiving water at the discharge points. Monitoring for some of those pollutants are established in this Order as required by the SIP and/or to verify compliance with the numeric receiving water limitations.

The procedures in the SIP for determining reasonable potential and calculating WQBELs specifically apply only to priority pollutant criteria promulgated through the NTR and CTR and to priority pollutant objectives established by Water Boards in their Basin Plans. For other constituents, the Water Board must determine what procedures it will use to evaluate reasonable potential and calculate effluent limitations.

For constituents with no promulgated numeric water quality criteria or objectives, the Water Board also must interpret narrative objectives from the Basin Plan to establish the basis for reasonable potential and effluent limitation calculations. In addition to USEPA National Recommended Water Quality Criteria, the Central Valley Regional Water Board has developed *A Compilation of Water Quality Goals* that it uses to help select the appropriate basis for interpreting narrative criteria in NPDES calculations. These goals include USEPA-recommended criteria for protection of aquatic life, drinking water Maximum Contaminant Levels (MCLs), agricultural water quality goals, and other water quality goals designed to protect various beneficial uses. Appropriate selection of criteria or goals to interpret narrative criteria depends on the specific beneficial uses of the receiving water. For example, drinking water MCLs and secondary MCLs (or SMCLs) are used to interpret narrative criteria if the receiving water is a source of municipal drinking water (MUN). The Water Board proposes to use *A Compilation of Water Quality Goals* in selecting numerical water quality goals to interpret narrative water quality objectives from the Basin Plan.

- i. **Chloride, Sulfate, Fluoride, Boron, Nitrate, TDS, Electrical Conductivity and Orthophosphate.**

As described in Section IV.C.2.b of this Fact Sheet, the Basin Plan contains numeric WQOs for the Mojave River for chloride, sulfate, fluoride, boron, nitrate, and total dissolved solids. This Order establishes water quality based numeric receiving water limitations for chloride, sulfate, fluoride, boron, nitrate, and total dissolved solids, and the discharge from the Facility must meet these limits. This Order requires the monitoring of these parameters.

The Basin Plan does not contain numeric WQOs for the Mojave River for phosphorus, but does contain narrative WQOs for 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.” The Water Board has received complaints regarding nuisance algae and has made its own observations of algae in waters affected by the Facility’s discharge. Increases in phosphorus (primarily orthophosphate) and nitrogen in surface waters are considered biostimulatory substances that may contribute to increase aquatic growths. The previous Order did require effluent monitoring of orthophosphate so there is some data for the effluent but there is no data for the influent or receiving water. This Order requires the monitoring of total orthophosphate in the influent and effluent to determine if Facility operations are contributing biostimulatory substances.

The table below summarizes the reasonable potential analysis for non-CTR parameters at Discharge Point 001 (Monitoring Location M-001). The table includes the maximum concentration of each parameter present in the Discharger’s effluent at quantifiable levels, the background concentrations (concentrations in receiving water upstream of the discharge), and the most stringent applicable recommended water quality criterion, objective, or goal along with the basis of that criterion, objective, or goal.

Table F-8. Summary of Reasonable Potential Analysis for Non-CTR Pollutants for Discharge Point 001

Parameter	Maximum Observed Effluent Conc. (mg/L)	Most Stringent Applicable Recommended Water Quality Criterion or Goal (mg/L)	Basis for Minimum Applicable Water Quality Criterion or Goal	Reasonable Potential?
Boron	ND (0.1)	0.2 (annual average) 0.3 (90 th percentile)	Basin Plan Objective – Mojave River at Victorville	No
Chloride	14	75 (annual average) 100 (90 th percentile)	Basin Plan Objective – Mojave River at Victorville	No
Fluoride	0.32	0.2 (annual average) 1.5 (90 th percentile)	Basin Plan Objective – Mojave River at Victorville	Additional Monitoring Required
Nitrate as NO ₃	5.4 (1.2 as N)	5 (instantaneous maximum)	Basin Plan Objective – West Fork Mojave River at Lower Narrows	Additional Monitoring Required
Sulfate (SO ₄)	14	40 (annual average) 100 (90 th percentile)	Basin Plan Objective – Mojave River at Victorville	No
Total Dissolved Solids (TDS)	216	312 (instantaneous maximum)	Basin Plan Objective – West Fork Mojave River at Lower Narrows	No

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 chloride for the Mojave River (at Victorville). 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 $\mu\text{mhos/cm}$ (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 (EC). Based on influent and effluent EC 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. Monitoring for EC and total dissolved solids will be continued and monthly use of sodium chloride must be reported as specified in the Monitoring and Reporting Program (Attachment E).

ii. Potassium Permanganate

Potassium permanganate (also known by the trade name of Cairox™) is used at the Facility to control gill disease. Potassium permanganate has a low estimated lifetime in the environment, being readily converted by oxidizable materials to insoluble manganese dioxide (MnO_2). In non-reducing and non-acidic environments, MnO_2 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".

Potassium permanganate is used at the Facility as a flush treatment at a rate of 2 ounces per cubic feet per second (cfs) of raceway flow, for a total of three treatments spaced 10 to 15 minutes apart, or used in bath treatments of 2 mg/L or less for 1 hour. Effluent potassium permanganate data are not available to assess the impact of potassium permanganate use at the Facility. Therefore, the following information and calculations were used to determine the estimated effluent potassium permanganate concentration from flush treatments at Monitoring Location M-001. 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.

Flow and volume estimates use the total dilution volume from 4.55 hours of flow at 1,383,720 gallons. Estimated final effluent concentration of potassium

permanganate (KMnO_4) (in mg/L) = $[(\# \text{ raceways treated}) \times (3 \text{ treatments}) \times (2 \text{ ounces per cfs}) \times (\text{flow in cfs}) \times (0.0625 \text{ lbs/ounce})] / [(\text{Total dilution in gallons}) \times (8.34 \text{ pounds/gallon})] \times 1,000,000$. The estimated final effluent concentration of potassium permanganate at Discharge Point 001 is 0.016 mg/L if one raceway is treated and 0.096 mg/L if two raceways are treated. Actual concentrations are likely to be lower as the calculations assumed no breakdown of potassium permanganate.

Effluent concentrations could not be estimated from the disposal of bath treatment wastewaters as information regarding volumes and location of disposal (which affects dilution factors) was unavailable. However, effluent potassium permanganate concentrations from the disposal of bath treatments wastewater are likely to be even lower than the concentrations estimated for flush treatments, due to the smaller quantities of wastewater and low concentrations used in bath treatments (2 mg/L). Results of a single acute toxicity test conducted by the DFG Pesticide Unit using *C. dubia* showed a 96-hour No Observed Adverse Effect Level (NOAEL) of 0.038 mg/L for potassium permanganate under continuous exposure. The DFG's 2-hour exposure test showed a 0.1975 mg/L No Observed Effect Concentration (NOEC).

Based on the estimated effluent concentrations and the toxicity information available at this time, the discharge of potassium permanganate at 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. However, the use of potassium permanganate must be reported as specified in the Monitoring and Reporting Program (Attachment E). The 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.

iii. Chloramine-T

Chloramine-T (sodium p-toluenesulfonchloramide) is available for use in accordance with an INAD exemption by FDA as a possible 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. The Discharger reports Chloramine-T may be used as a flush or bath treatment at a concentration of up to 20 mg/L for 1 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 DFG Pesticide Unit *C. dubia* test where the test animals were exposed to the toxicant for 2 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 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 at Discharge Point 001. 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 Chloramine-T.

Flow and volume calculations use the total dilution volume of a 1-hour treatment at 4,107,764 gallons, or 15,549,579 liters (1 gallon = 3.7854118 liters). The Discharger has specified to the Water Board that the maximum number of raceways treated per day with Chloramine-T will be two.

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 estimated final effluent concentration of Chloramine-T at Discharge Point 001 is 0.12 mg/L if one raceway is treated and 0.24 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 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.

- iv. **Copper.** A potential source of copper discharge (copper is identified as a priority pollutant in the NTR and CTR) at fish hatcheries is from the use of copper sulfate and chelated copper compounds, which were used to control the growth of external parasites and bacteria on fish. The effluent sampling for priority pollutants conducted on May 28, 2004 did not coincide with copper sulfate usage at the Facility, nor are there any effluent copper data available to assess the impact of copper sulfate use at the Facility. On January 11, 2010, the Director of Fish and Game certified "the use of copper sulfate products has been discontinued at all DFG hatcheries." Therefore, effluent limits and monitoring requirements for copper sulfate have been removed from this Order.

v. **PVP Iodine**

PVP Iodine (Argentyne), is a solution composed of 10% PVP Iodine Complex and 90% inert ingredients. PVP Iodine is not currently used but may be used by the Discharger in the future to disinfect eggs. PVP Iodine typically is applied in short-term treatments of 1 hour or less. Because PVP Iodine typically is applied in short-term treatments of 1 hour or less, results of acute

aquatic life toxicity testing conducted by the DFG Pesticide Unit were considered when determining whether WQBELs for PVP Iodine were 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 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.

vi. Acetic Acid, Carbon Dioxide and Sodium Bicarbonate

The Discharger does not currently use but may use acetic acid in the future at the Facility 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).

vii. Oxytetracycline

Oxytetracycline, also known by the brand name Terramycin[®], is an antibiotic 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 antibiotic during disease outbreaks. Oxytetracycline is most commonly used at CAAP facilities as a feed additive. However, oxytetracycline may also be used as an extra-label use under a veterinarian's prescription in an immersion bath of approximately 6 to 8 hours in duration. Because oxytetracycline may be applied in an immersion bath for up to 8 hours at a time, the Water Board considered the results of acute and chronic aquatic life toxicity testing conducted by the DFG Pesticide Unit when determining whether WQBELs for oxytetracycline used in an immersion bath treatment were necessary. Results of acute toxicity tests using *C. dubia* showed a 96-hour NOAEL of 40.4 mg/L. Results of chronic toxicity tests using *C. dubia* showed a 7-day NOEC for reproduction of 48 mg/L.

The information available regarding use and discharge of oxytetracycline at CAAP facilities indicates that it is discharged at levels well below the lowest NOEC and NOAEL. The Water Board determined that oxytetracycline, 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 an effluent limitation for oxytetracycline. However, the use and estimated effluent concentrations of oxytetracycline must be reported as specified in the attached Monitoring and Reporting Program (Attachment E). The 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.

viii. Penicillin-G

Penicillin G is an antibiotic used for the control of bacterial infections and is administered as a 6 to 8 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 Water Board considered the results of acute and chronic aquatic life toxicity testing conducted by the DFG 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 7-day chronic toxicity testing using *Pimephales promelas* showed 7-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 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 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.

ix. 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-oremtroprim, 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).

x. 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 2 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).

xi. 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 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.

- b. Constituents with Reasonable Potential.** The Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for pH, settleable matter, formaldehyde and hydrogen peroxide. WQBELs have been established in the Order, apply to the discharge from the Facility, and are either equally as stringent as the previous permit or more stringent for these constituents. A detailed discussion of the RPA for each constituent is provided below.
- i. pH.** The Basin Plan 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 previous permit, Order R6V-2006-0028, 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 worst-case dilution in this Order is assumed to be zero. To provide protection for the receiving water beneficial uses, discharge limitations are end-of-pipe limits with no allowance for dilution within the receiving water. To provide protection for the receiving water beneficial uses and to meet the receiving water limitations (Basin Plan objectives), this Order establishes as effluent water limitations the pH limitations from the Basin Plan. This limit is more stringent than the previous permit.
- ii. Settleable Solids.** The Basin Plan includes a water quality objective for surface waters that *"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 milliliter per liter."* Order R6V-2006-0028 contained an effluent limitation for settleable solids of 0.1 ml/L as an AMEL. The Water Board has retained the numeric effluent limitation for settleable solids for the Facility in order to prevent an instream excursion above the water quality standard
- iii. Formaldehyde (Formalin)**
- Formalin, a solution typically 37 percent by weight formaldehyde, (also known by the trade names Formalin-F®, Paracide-F®, PARASITÉ-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.

The Discharger uses Formalin at the Facility at a rate of up to 16 gallons per raceway to control external parasites. Effluent formaldehyde data are not available to assess the impact of formalin use at the Facility. Therefore, the following information and calculations were used to determine the estimated effluent formaldehyde concentration from flush treatments at Monitoring Location M-001. 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 formaldehyde.

Flow and volume estimates use the total dilution volume from 4.55 hours of flow at 5,157,469 gallons, or 19,523,142 liters. Estimated final effluent concentration of formaldehyde (in mg/L) = [(Total gallons formalin applied) x (3.7854118 liters/gallon) x (370,000 mg formaldehyde / liter formalin)] / (Total dilution volume in liters). The estimated final effluent concentration of formaldehyde at Monitoring Location M-001 is 1.15 mg/L if one raceway is treated (16 gallons) and 6.89 mg/L if all six raceways are treated (96 gallons).

The State of California Department of Health Services (DHS) does not have an MCL for formaldehyde; however the DHS historic 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 10. 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 DFG Pesticide Unit conducted biotoxicity studies to determine the aquatic toxicity of Formalin using *Pimephales promelas* and *C. dubia*. A summary of the data submitted follows:

Table F-9 - Aquatic Toxicity of Formalin

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 ¹ 1.3 ²	1.3 ¹ <1.3 ²	5.8	1.3
<i>Pimephales promelas</i>	23.3	9.09	2.28	--	--
<i>Selanastrum capricornutum</i>	<5.2	--	--	--	--

¹ Survival
² Reproduction

Notes: DFG lab report no. P-2251.1 dated 6/30/2001. Results as formaldehyde. Divide by 0.37 to obtain the equivalent Formalin concentration.

Since Formalin treatments are usually utilized as a batch or flush treatment which result in discharges from 3 to 8 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:

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

Notes: DFG lab report no. P-2294.1 dated 1/30/2002. 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 DFG Pesticide Unit and the Basin Plan narrative toxicity objective were considered when determining whether WQBELs for formalin as formaldehyde were necessary. Results of 7-day chronic toxicity tests indicated *C. dubia* was the most sensitive species, with a 7-day NOEC value of 1.3 mg/L formaldehyde for survival and less than 1.3 mg/L for reproduction (the 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 8-hour exposure, resulted in a 96-hour NOAEL concentration of 6.7 mg/L formaldehyde.

The 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 basin, recirculation flow back to the raceways, and potential application procedures (e.g., successive raceway treatments, drip treatments for eggs). Therefore, an AMEL of 0.65 mg/L and a MDEL of 1.3 mg/L are calculated based on the 96-hour NOAEL 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 carried over from the previous Order No. R6V-2006-0028. Use and monitoring of formaldehyde must be reported as specified in the attached Monitoring and Reporting Program (Attachment E).

iv. Hydrogen Peroxide

Hydrogen peroxide (35% H₂O₂) has been used at the Facility for the control of external parasites as a raceway flush treatment at a concentration of 100 mg/L or less, from 45 minutes to 1 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 Water Board considered the results of acute aquatic life toxicity testing conducted by the DFG 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 2 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 at Monitoring Location M-001. 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.

Flow and volume estimates use the total dilution volume from a 1-hour treatment at 4,107,764 gallons, or 15,549,579 liters (1 gallon = 3.7854118 liters).

Total mass of hydrogen peroxide 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 (hydrogen peroxide concentration in mg/L).

Estimated final effluent concentration of hydrogen peroxide (in mg/L) = Total mass of hydrogen peroxide applied in milligrams / total dilution volume in liters. The results were as follows:

Table F-10. Estimated Hydrogen Peroxide Concentrations at Monitoring Location M-001

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 Conc. (mg/L)
1	100	35	1	6,529,330	15,549,579	0.42
6	100	35	1	39,175,980	15,549,579	2.52

The Water Board has determined that, based on available toxicity testing data and the estimated concentrations, hydrogen peroxide 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 hydrogen peroxide. The actual effluent concentrations are likely to be lower as the calculations assume no breakdown of hydrogen peroxide. Since hydrogen peroxide is a strong oxidizer concentrations are unlikely to persist for long periods. Therefore, a MDEL of 1.3 mg/L is calculated based on the 96-hour NOAEL value and using the procedure in USEPA's TSD for calculating water quality-based effluent limitations as described in the Section IV.C.4 of this Fact Sheet. This effluent limitation is carried over from Order No. R6V-2006-0028. Use and monitoring of hydrogen peroxide must be reported as specified in the attached Monitoring and Reporting Program. (Attachment E)

4. WQBEL Calculations

a. Formaldehyde

Effluent concentrations of formaldehyde may persist because of potential application procedures (e.g., successive raceway treatments), also due to retention of effluent in the settling basin and the recirculation of settling basin wastewater back to the raceways.

The dimensions of each raceway are 1000 feet long x 10 feet wide x 3 feet deep. Based on these dimensions, the volume of each raceway is 30,000 cubic feet. With a flow of 1.83 cfs, the estimated hydraulic retention time is approximately 4.55 hours (30,000 cubic feet / 1.83 cfs = 16,393 seconds = 4.55 hours). The dilution volume of water from one rearing raceway after 4.55 hours is 224,233 gallons (1 cfs = 26,930 gallons per hour).

The Facility has two settling ponds, each pond having a surface area of 18,200 square feet and a depth that tapers from 12 feet to 16 feet. The volume of each settling pond at 18,200 square feet x 14 feet (average between 12 and 16 feet) is 254,800 cubic feet, or 1,906,036 gallons (1 cubic foot = 7.48052 gallons).

The total dilution volume from the six raceways during 4.55 hours of flow, plus the volume of the two settling ponds, is 5,157,469 gallons [(224,233 gallons x 6 raceways) + (1,906,036 gallons x 2 settling ponds)].

Assuming:

- No in-stream dilution allowance.
- CV = 0.6 for the lognormal distribution of pollutant concentrations in effluent.

Calculation of Aquatic Life AMEL and MDEL:

Effluent Concentration Allowances (ECA) based on NOAEL (acute toxicity) and NOEC (chronic toxicity) for C. dubia, with no dilution allowance

$$ECA_{\text{acute}} = 1.3 \text{ mg/L}$$

$$ECA_{\text{chronic}} = 1.3 \text{ mg/L}$$

Long-Term Average concentration based on acute ECA

$$LTA_{\text{acute}} = 1.3 \text{ mg/l} \times 0.321 = 0.417 \text{ mg/L}$$

(where 0.321 = acute ECA multiplier at 99% occurrence probability and 99% confidence)

Long-Term Average concentration based on chronic ECA

$$LTA_{\text{chronic}} = 1.3 \text{ mg/l} \times 0.527 = 0.685 \text{ mg/L}$$

(where 0.527 = chronic ECA multiplier at 99% occurrence probability and 99% confidence)

Most Limiting LTA concentration based on acute LTA

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

Average Monthly Effluent Limitation

$$AMEL = LTA \times 1.55$$

(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

$$MDEL = LTA \times 3.11$$

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

$$MDEL_{\text{aquatic life}} = 0.4173 \text{ mg/l} \times 3.11 = 1.3 \text{ mg/L}$$

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 human health.

b. Hydrogen Peroxide

As hydrogen peroxide is a strong oxidizer, effluent concentrations are unlikely to persist for long periods. Therefore, only a MDEL was calculated based on the 96-hour NOAEL value for *C. dubia* and using the procedure in USEPA's TSD for calculating WQBELs.

The Water Board calculated the MDEL for hydrogen peroxide, using the calculations and methods described previously for deriving the effluent limitations for Formaldehyde.

Assuming:

- No in-stream dilution allowance.
- CV = 0.6 for the lognormal distribution of pollutant concentrations in effluent.

Effluent Concentration Allowance based on NOAEL (acute toxicity) with no dilution allowance

$$ECA_{acute} = 1.3 \text{ mg/L}$$

No chronic toxicity data, Long-Term Average concentration based on acute ECA

$$LTA = 1.3 \text{ mg/l} \times 0.321 = 0.417 \text{ mg/L}$$

(where 0.321 = acute ECA multiplier at 99% occurrence probability and 99% confidence)

Maximum Daily Effluent Limitation

$$MDEL = LTA \times 3.11$$

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

$$MDEL = 0.08025 \text{ mg/l} \times 3.11 = \mathbf{1.3 \text{ mg/L}}$$

This effluent limitation has been established for protection of aquatic life against toxic effects from exposure to hydrogen peroxide in the discharge.

5. Final Water Quality-Based Effluent Limitations

Table F-11. Summary of Water Quality-based Effluent Limitations, Monitoring Location M-001

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	Units			6.5	8.5
Formaldehyde	mg/L	0.65	1.3		
Hydrogen Peroxide	mg/L		1.3		
Settleable Solids	ml/L	0.1	--	--	--

6. 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 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. 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.

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 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.

Due to the nature of operations and chemical treatments at this Facility, its effluent generally contains only one or two known chemicals at any given a time. Therefore, the Water Board is using a chemical-specific approach to determine “reasonable potential” for discharges of aquaculture drugs and chemicals. As such it is not necessary to include an acute toxicity effluent limitation or require acute or chronic WET testing.

D. Final Effluent Limitations

1. Mass-based Effluent Limitations

40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. 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. Satisfaction of Anti-degradation Policy

As described in Sections IV.B.2 and IV.C.3. of this Fact Sheet, effluent limitations for TSS, settleable solids, formaldehyde, and hydrogen peroxide are being carried over from Order No. R6V-2006-0028. Limits for pH are listed in the Effluent Limitations and Receiving Water Limitations based on the Basin Plan objectives. Receiving water limits for total dissolved solids were changed to more closely reflect the current surface water limitations specific to the Mojave River at Lower Narrows and at Victorville in the Basin Plan. These limits are as stringent as or more stringent than the limits from the previous permit. The total flow of fish hatchery wastewater is still required to be measured (monitored) as described in the attached Monitoring and Reporting Program (Attachment E). However, the flow limitation has been removed since the Facility's pumping infrastructure limits the amount of water used at the Facility. Additionally, compliance with effluent limitations for total suspended solids and settleable solids ensures that flows exceeding the treatment capacity of the Facility will not be discharged. The effluent limit for copper has been removed because the Discharger has certified that copper sulfate will no longer be used at the hatchery. The Water Board has determined that the Anti-degradation Policy is satisfied.

3. Satisfaction of Anti-Backsliding Requirements.

Section 402(o) of the CWA and 40 CFR 122.44(l) require that with some exceptions, effluent limitations or conditions in reissued Orders be at least as stringent as those in the existing Order. Effluent limitations for total suspended solids, settleable solids, formaldehyde, and hydrogen peroxide are being carried over from Order No. R6V-2006-0028 and limits for pH are more stringent and listed in the Effluent Limitations and Receiving Water Limitations based on the Basin Plan objectives. Receiving water limits for total dissolved solids were changed to more closely reflect the current surface water limitations specific to the Mojave River at Lower Narrows and at Victorville in the Basin Plan. The Water Board has determined that the numeric limitations from the previous Order continue to be applicable to the discharge and that the Anti-Backsliding Policy is satisfied.

4. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations, WQBELs, and numeric receiving water limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on TSS. WQBELs and numeric receiving

water limitations 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. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual 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. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless “applicable water quality standards for purposes of the CWA” pursuant to 40 CFR 131.21(c)(1). Collectively, this Order’s restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

Table F-12. Summary of Final Effluent Limitations – Monitoring Location M-001

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	<u>Units</u>			6.5	8.5
Total Suspended Solids	mg/L	6	15	--	--
Settleable Solids	ml/L	0.1	--	--	--
Formaldehyde	mg/L	0.65	1.3	--	--
Hydrogen Peroxide	mg/L	--	1.3	--	--

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Reclamation Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

The Mojave River Fish Hatchery pumps groundwater from the regional aquifer, uses it for hatchery operations, and discharges it to surface water that is contiguous with the local flood plain aquifer of the Mojave River. The discharge includes constituents contained in groundwater that were concentrated by evaporation, and wastes from fish hatchery operations. During storm events, constituents in stormwater may also be present in the discharge. The Discharger is responsible for constituents contributed by groundwater pumping, hatchery operations and hatchery property 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 (40 CFR

131.12) and State Water Board Resolution No. 68-16. Receiving water limitations in this Order are included to ensure protection of beneficial uses of the receiving water (see Order Section V).

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: agricultural supply (AGR), aquaculture (AQUA), cold freshwater habitat (COLD), commercial and sport fishing (COMM), contact water recreation (REC-1), flood peak attenuation/flood water storage (FLD), freshwater replenishment (FRSH), ground water recharge (GWR), industrial service supply (IND), migration of aquatic organisms (MIGR), municipal and domestic supply (MUN), non-contact water recreation (REC-2), rare, threatened, or endangered species (RARE), warm freshwater habitat (WARM), water quality enhancement (WQE); and wildlife habitat (WILD).

B. Groundwater

Beneficial uses designated to the Mojave River apply to the subsurface flow beneath the Mojave River Flood Plain. These subsurface flows may not be visible in many sections of the Mojave River during the dry season, yet they are both present and contiguous with intermittent sections of the river that contain perennial surface flows. Qualitative and numeric limitations for the Mojave River apply to these subsurface flows. Since the surface and subsurface flows in the Mojave River are connected, impacts to groundwater under the river channel are monitored with samples collected from surface water shortly prior to infiltration to the subsurface.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires that all NPDES permits specify recording and reporting of monitoring results. Sections 13267 and 13383 of the Water Code authorize the Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program, Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and State requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for this Facility.

A. Influent Monitoring

R6V-2006-0028 did not require routine facility supply water monitoring (influent monitoring). This Order requires influent monitoring for pH and electrical conductivity at least once per month when any treatment that may alter pH and/or electrical conductivity is used. Monitoring has also been added for constituents with water quality objectives listed in the Basin Plan and currently monitored in the effluent (TDS, temperature, fluoride, sulfate, boron, nitrate, chloride), and for nutrients (nitrogen, total orthophosphate) to establish background levels in the source water. The influent water originates from ground water and may contribute to constituent violations in the effluent. The influent monitoring requirements will aid the Water Board in determining the source of impacts.

B. Effluent Monitoring

Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. To demonstrate compliance with numeric effluent and surface 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, effluent monitoring for flow, temperature, pH, dissolved oxygen, turbidity, nitrate, total nitrogen, orthophosphate, settleable solids, TSS, total dissolved solids, chloride, sulfate, fluoride, and boron required in Order No. R6V-2006-0028 are being carried over to this Order as either effluent or receiving water monitoring.

The requirement to collect two grab samples (grab pairs collected not less than 2 hours, nor greater than 4 hours apart) for settleable solids and TSS was not carried over to this Order. The grab pairs were required in Order No. R6V-2006-0028 to assess the range of TSS and settleable solids concentrations during cleaning operations, as well as to determine compliance with monthly average effluent limitations. Based on evaluation of the results there was little variation in concentrations between the grab pair samples for TSS and settleable solids. Therefore, continued grab pair sampling was considered unnecessary for these parameters as the data did not provide any additional information. However, the monitoring frequency for TSS and settleable solids was increased from twice per quarter to three times per quarter (one per month).

As discussed in detail in Section IV.C.6 of this Fact Sheet, the Water Board has determined that a chemical-specific approach to be the most appropriate measurement technique for effluent toxicity characterization at the Facility. Therefore, effluent monitoring of aquaculture chemicals used by the Facility, determined to have reasonable potential, and for which effluent limits have been established (formaldehyde, and hydrogen peroxide) is required to determine compliance with effluent limitations. Monitoring for pH and electrical conductivity is required at least once per month when any treatment that may alter pH and/or electrical conductivity is used.

As discussed in Section II.B of this Fact Sheet the Mojave River is normally dry, with occasional seasonal surface water runoff. Therefore, wastewater from the Facility diverted to the Victor Valley College ponds and wetland is discharged to the dry river bed with no upstream flow for dilution at Discharge Point 001. Order No. R6V-2006-0028 did not require monitoring after the wetlands and overflow weir prior to discharge.

C. Whole Effluent Toxicity Testing Requirements – Not Applicable

D. Receiving Water Monitoring

1. Surface Water

Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving waters. Upstream and downstream monitoring stations were established at Monitoring Locations RSW-001 and RSW-002 within the Mojave River in the previous Order to demonstrate compliance with receiving water limitations established in the Basin

Plan and to assess the impact of the discharge on the beneficial uses of the receiving water. Further site inspections and discussions with the Discharger have confirmed that the discharge becomes a surface water once it leaves the Facility. Therefore the effluent must meet receiving water limitations in this permit. The receiving water monitoring station is now established at monitoring location M-001. Monitoring requirements for formaldehyde established in the previous Order are being continued in this Order to assess impacts to the receiving water.

2. Sediment

Order No. R6V-2006-0028 required monitoring for copper and manganese in the Mojave River sediment at Monitoring Location R-001D once per year for copper and twice during the permit term for manganese. The Facility used copper sulfate once during the last permit term and does not intend to use copper at the Facility in the future. The Facility uses potassium permanganate; however, potassium permanganate readily converts to insoluble manganese dioxide (MnO_2) in the presence of oxidizers, such as dissolved oxygen in the hatchery. As a result, Potassium permanganate has a short estimated half-life that rapidly converts potassium permanganate to manganese dioxide with a low potential for bioaccumulation. Acidic and reducing environments will cause manganese dioxide to dissolve. Should acidic and anaerobic conditions develop in the wetlands, bioaccumulation could occur. This is unlikely, given the naturally alkaline conditions in the Mojave watershed. Therefore, this Order does not carry forward the requirement to monitor sediment downstream of Discharge Point 001 at Monitoring Location R-001D for copper and manganese. If the Discharger uses copper in the future or priority pollutant metals monitoring indicates the need for sediment monitoring in the Mojave River, additional monitoring for metals could be added to the Monitoring and Reporting Program by the Executive Officer.

3. Groundwater – Not Applicable

E. Other Monitoring Requirements

1. Drug and Chemical Use

Quarterly reporting of drug and chemical use is required in this Order. The ELGs at 40 CFR Part 451 requires reporting on the use of drugs, disinfectants, and other chemicals in discharges authorized by NPDES permits.

2. Priority Pollutant Metals Monitoring

Potential discharge of priority pollutants is based on the probability of the pollutants being present in the groundwater pumped from source wells and from data collected from CAAP facilities. Data compiled from CAAP facilities, local drinking water wells and the State Board's Groundwater Ambient Monitoring Association (GAMA) database were used to determine the potential for metals and other priority pollutants to occur. Accordingly, the Water Board requires sampling and analysis of the influent and effluent for priority pollutants listed in Attachment J at least once per

permit cycle. The samples shall be analyzed for priority pollutants **in the year 2014 and reported to the Water Board no later than February 1, 2015.** (Refer to Attachment J for the specific monitoring requirements.)

3. Visual Observations

- a. Within two business days (48 hours) after each qualifying rain event the Discharger shall observe and record the presence or absence of floating and suspended materials, a sheen on the surface, discolorations, turbidity, odors, and source(s) of any observed pollutants. These observations shall be made at D-002, after stormwater co-mingles with effluent flows. These observations are to (1) identify whether BMPs were adequately designed, implemented, and effective, and (2) identify additional BMPs necessary and to revise the SWPPP accordingly. Visual Observations shall be submitted in the next quarterly Self-Monitoring Report after the observations and summarized in the annual report.
- b. Quarterly visual observations of each non-storm water discharge and its sources to ensure that BMPs are being implemented and are effective. The non-storm water discharges are reported and described in the next quarterly report following the discharge and are summarized in the annual report.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

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

40 CFR 122.41(a)(1) and (b) through (n) 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 Order. 40 CFR 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 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. Monitoring and Reporting Requirements

The Discharger is required to comply with the Monitoring and Reporting Program, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

Conditions that necessitate a major modification of a permit are described in 40 CFR 122.62, which include the following:

- (a) *When standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision.* Therefore, 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 Water Board will revise and modify this Order in accordance with such more stringent standards.
- (b) *When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.* The Discharger is required to report on usage of drugs and chemicals for which discharge is authorized by this Order. New information on usage or toxicity of drugs or chemicals used at the Facility may justify reopening and modifying this order.
- (c) *When facility alterations or changes in operations justify new conditions that are different from the existing permit.* The discharge of a new drug or chemical that is found to have 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, would be considered a change in Facility operations that requires reopening this Order to establish new effluent limitations.

2. Special Studies and Additional Monitoring Requirements

Prior to using any new chemical or aquaculture drug at the Facility, the Discharger is required to submit to the 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 of this Order. These reporting and toxicity testing requirements are needed for the 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.

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 CFR 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, record-keeping, and training. The

Discharger must make the BMP plan available to the Water Board upon request, and submit certification that the BMP plan has been developed.

- b. **Best Management Practices - Storm Water Pollution Prevention Plan (SWPPP).** This Order requires the Discharger to develop and implement a SWPPP, in accordance with Attachment K to the Order that describes site-specific BMPs that will be used 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 storage of other materials.

4. Compliance Schedules – Not Applicable

5. Construction, Operation, and Maintenance Specifications

Solid waste disposal provisions in this Order are based on the requirements of CCR 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.

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

7. Other Special Provisions - Order Continuation after Expiration Date.

This provision is common in California NPDES permits and is authorized under 40 CFR 122.6(d).

VIII. PUBLIC PARTICIPATION

The Water Board is considering the issuance of WDRs that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Mojave River Fish Hatchery. As a step in the WDR adoption process, the Water Board staff developed tentative WDRs that were circulated for a thirty day review and comment period. The Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through publication in the Victor Valley Daily Press on March 25, 2011 and the San Bernardino Sun on March 26, 2011. An additional notification is anticipated to be provided in early September.

B. Written Comments

Changes to the Tentative WDRs based on comments received were reflected in the Proposed WDRs that were circulated to interested persons and the Discharger on June

1, 2011. Subsequent changes were made based on comments from the Discharger in the revised Proposed (dated August 29, 2011).

Comments on only the revised language in the August 29, 2011 Proposed WDRs may be submitted either in person or by mail to the Executive Officer at the Water Board at the address above on the cover page of this Order no later than **September 30, 2011**.

C. Public Hearing

The Water Board anticipates holding a public hearing on the proposed WDRs during its regular Board meeting on the following date and time and at the following locations:

Date: **October 12, 2011**
Time: **1:00 p.m.**
Location: Mojave Desert Air Quality Management District
14306 Park Avenue
Victorville, CA 92392

Interested persons are invited to attend. At the public hearing, the Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is <http://www.waterboards.ca.gov/ahontan> where you can access the current agenda for changes in dates, times, and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Water Board's action to the following address:

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

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address below at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Water Board by calling (760) 241-6583.

California Regional Water Quality Control Board
Lahontan Region
14440 Civic Drive, Suite 200
Victorville, CA 92392

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the 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 Mary Dellavalle at (760) 241-6583.

Attachment G – Basin Plan Water Quality Objective Tables

Table G-1: One-Hour Concentration for Ammonia

Waters Designated as COLD, COLD with SPWN, COLD with MIGR (Salmonids or other sensitive coldwater species present)

pH	Temperature, °C						
	0	5	10	15	20	25	30
Un-ionized Ammonia (mg/liter NH ₃)							
6.50	0.0091	0.0129	0.0182	0.026	0.038	0.056	0.083
6.75	0.0149	0.021	0.029	0.042	0.059	0.086	0.125
7.00	0.023	0.033	0.046	0.066	0.093	0.135	0.197
7.25	0.034	0.048	0.066	0.095	0.135	0.197	0.284
7.50	0.048	0.064	0.089	0.128	0.181	0.261	0.377
7.75	0.066	0.089	0.112	0.159	0.22	0.314	0.453
8.00	0.085	0.092	0.130	0.184	0.26	0.366	0.521
8.25	0.085	0.092	0.130	0.184	0.26	0.366	0.521
8.50	0.085	0.092	0.130	0.184	0.26	0.366	0.521
8.75	0.085	0.092	0.130	0.184	0.26	0.366	0.521
9.00	0.085	0.092	0.130	0.184	0.26	0.366	0.521
Total Ammonia (mg/liter NH ₃)							
6.50	35	33	31	30	29	29	14.3
6.75	32	30	28	27	27	19.6	13.2
7.00	28	26	25	24	23	16.4	11.6
7.25	23	22	20	19.7	19.2	13.4	9.5
7.50	17.4	16.3	15.5	14.9	14.6	10.2	7.3
7.75	12.2	11.4	10.9	10.5	10.3	7.2	5.2
8.00	8.0	7.5	7.1	6.9	6.6	4.9	3.5
8.25	4.5	4.2	4.1	4.0	3.9	2.9	2.1
8.50	2.6	2.4	2.3	2.3	2.3	1.71	1.29
8.75	1.47	1.40	1.37	1.38	1.42	1.07	0.93
9.00	0.96	0.83	0.82	0.96	0.91	0.72	0.59

1 To convert these values to mg/liter N, multiply by 0.822
 2 Source: U. S. Environmental Protection Agency, 1988. Quality criteria for water, 1988. EPA 440/5-88-001.

Table G-2: Four Day Average Concentration for Ammonia

Waters Designated as COLD, COLD with SPWN, COLD with MGR (Salmonids or other sensitive coldwater species present)

pH	Temperature, °C						
	0	5	10	15	20	25	30
Un-ionized Ammonia (mg/liter NH ₃)							
6.50	0.0008	0.0011	0.0016	0.0022	0.0022	0.0022	0.0022
6.75	0.0014	0.0020	0.0028	0.0039	0.0039	0.0039	0.0039
7.00	0.0025	0.0035	0.0049	0.0070	0.0070	0.0070	0.0070
7.25	0.0044	0.0062	0.0086	0.0124	0.0124	0.0124	0.0124
7.50	0.0078	0.0111	0.0156	0.022	0.022	0.022	0.022
7.75	0.0129	0.0182	0.026	0.036	0.036	0.036	0.036
8.00	0.0149	0.021	0.030	0.042	0.042	0.042	0.042
8.25	0.0149	0.021	0.030	0.042	0.042	0.042	0.042
8.50	0.0149	0.021	0.030	0.042	0.042	0.042	0.042
8.75	0.0149	0.021	0.030	0.042	0.042	0.042	0.042
9.00	0.0149	0.021	0.030	0.042	0.042	0.042	0.042
Total Ammonia (mg/liter NH ₃)							
6.50	3.0	2.8	2.7	2.6	1.76	1.23	0.87
6.75	3.0	2.8	2.7	2.6	1.76	1.23	0.87
7.00	3.0	2.8	2.7	2.6	1.76	1.23	0.87
7.25	3.0	2.8	2.7	2.6	1.77	1.24	0.88
7.50	3.0	2.8	2.7	2.6	1.78	1.25	0.89
7.75	2.8	2.6	2.5	2.4	1.66	1.17	0.84
8.00	1.82	1.70	1.62	1.57	1.10	0.78	0.56
8.25	1.03	0.97	0.93	0.90	0.64	0.46	0.33
8.50	0.59	0.55	0.53	0.52	0.38	0.28	0.21
8.75	0.34	0.32	0.31	0.31	0.23	0.173	0.135
9.00	0.195	0.189	0.189	0.195	0.148	0.116	0.094

- 1 To convert these values to mg/liter N, multiply by 0.822.
- 2 Source: U. S. Environmental Protection Agency, 1992. Revised tables for determining average freshwater ammonia concentrations. USEPA Office of Water Memorandum, July 30, 1992.

Table G-3: Water Quality Criteria for Ambient Dissolved Oxygen Concentration

AMBIENT DISSOLVED OXYGEN CONCENTRATION^{1,2}

	Beneficial Use Class			
	COLD & SPWN ³	COLD	WARM & SPWN ³	WARM
30 Day Mean	NA ⁴	6.5	NA	5.5
7 Day Mean	9.5 (6.5)	NA	6.0	NA
7 Day Mean Minimum	NA	5.0	NA	4.0
1 Day Minimum ^{5,6}	8.0 (5.0)	4.0	5.0	3.0

- ¹ From: USEPA. 1986. Ambient water quality criteria for dissolved oxygen. Values are in mg/L.
- ² These are water column concentrations recommended to achieve the required intergravel dissolved oxygen concentrations shown in parentheses. For species that have early life stages exposed directly to the water column (SPWN), the figures in parentheses apply.
- ³ Includes all embryonic and larval stages and all juvenile forms to 30-days following hatching (SPWN).
- ⁴ NA (Not Applicable).
- ⁵ For highly manipulatable discharges, further restrictions apply.
- ⁶ All minima should be considered as instantaneous concentrations to be achieved at all times.

Table G-3, above was generated for standardized concentrations. Natural conditions, such as elevation, may alter dissolved oxygen concentrations. Where natural conditions alone create dissolved oxygen concentrations less than 110 percent of the applicable criteria means or minima or both, the minimum acceptable concentration is 90 percent of the natural concentration. (page 35: USEPA. 1986. Ambient Water Quality Criteria for Dissolved Oxygen.)

ATTACHMENT H –AQUACULTURE DRUGS AND CHEMICALS APPROVED FOR USE

Drug or Chemical	Molecular Formula	Purpose of Application	Expected Method(s) of Application or Treatment
Acetic acid Ethanoic Acid.	C ₂ H ₄ O ₂ , CH ₃ COOH	Control of external parasites.	(1) <i>Flush</i> : 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. (2) <i>Bath</i> : used at a rate of 500 to 2,000 ppm for 1 to 10 minutes.
Amoxicillin trihydrate. 6-[2-Amino-2-(4-hydroxyphenyl)-acetyl]amino-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid trihydrate	C ₁₆ H ₁₉ N ₃ O ₅ S·3(H ₂ O)	Control and prevention of external and systemic bacterial infections.	<i>Injected intraperitoneally</i> : into broodstock twice a week, prior to spawning, at a rate of 40 milligrams amoxicillin per kilogram of fish.
Carbon Dioxide.	CO ₂	Anesthetic.	<i>Bath</i> : bubbled in water. Usually used in small volumes of water.
Chloramine-T Sodium p-toluenesulfonchloramide, trihydrate; N-Chloro-4-methylbenzenesulfonamide sodium salt; Benzene sulfonamide, N-chloro-4-methyl-, trihydrate.	C ₇ H ₇ ClNO ₂ S.Na . 3H ₂ O	Control of external gill bacteria.	(1) <i>Flush</i> : used at a concentration of up to 20 ppm for one hour. (2) <i>Bath</i> : used at a concentration of up to 20 ppm for one hour.

Drug or Chemical	Molecular Formula	Purpose of Application	Expected Method(s) of Application or Treatment
Erythromycin. 11-[4-(dimethylamino)-3-hydroxy-6-methyl-oxan-2-yl]oxy-5-ethyl-3,4,12-trihydroxy-9-(5-hydroxy-4-methoxy-4,6-dimethyl-oxan-2-yl)oxy-2,4,8,10,12,14-hexamethyl-6-oxacyclotetradecane-1,7-dione	C37H67NO13	Control and prevention of external and systemic bacterial infections.	(1) <i>Injected intraperitoneally</i> : at a rate of 40 milligrams erythromycin per kilogram of fish, at 30 day intervals. (2) <i>Feed</i> : used in medicated feed or fish pills at a rate of 100 milligrams or less of erythromycin per kilogram of fish.
Florfenicol (Nuflor®). fluorine Thiamphenicol (Florfenicol , FF), [R-(R*, R*)]-N-[1-(Fluoromethyl)-2-hydroxy-2-(4-(methylsulfonyl)phenyl)-ethyl]-2,2-dichloroacetamide; 2,2-Dichloro-N-[(1R,2S)-3-fluoro-1-hydroxy-1-(4-methylsulfonylphenyl)propan-2-yl]acetamide; ...	C12H14Cl2FNO4S	Control and prevention of external and systemic bacterial infections.	<i>Feed</i> : pre-mixed by manufacturer at a rate of 10 milligrams of florfenicol per kilogram of fish per day, split into morning and afternoon feedings.
Formalin (37% formaldehyde solution).	HCHO	(1) Control of external parasites. (2) Fungus control on fish eggs.	(1) <i>Flush</i> : Low dose - used at a concentration of 25 ppm of formalin for 8 hours. High dose - used at a concentration of 167 to 250 ppm formalin for one hour. (2) <i>Bath</i> : used at a concentration of 2,000 ppm formalin, or less, for 15 minutes.
Hydrogen peroxide.	H ₂ O ₂	Control of external parasites.	<i>Flush</i> : used at a rate of 100 ppm, or less, for 45 minutes to 1 hour.

Drug or Chemical	Molecular Formula	Purpose of Application	Expected Method(s) of Application or Treatment
MS-222 / tricaine methanesulfonate (Finquel®, Tricaine-S®).	NH ₂ C ₆ H ₄ COOC ₂ H ₅ .C H ₃ SO ₃ H	Anesthetic.	<i>Bath:</i> used at a rate of 50 to 250 mg/L, usually in a small volume of water.
Oxytetracycline HCl (Terramycin®).	C ₂₂ H ₂₄ N ₂ O ₉ .ClH	Control and prevention of external and systemic bacterial infections.	(1) <i>Bath:</i> used in tanks for six to eight hours at a concentration of 100 ppm or less. (2) <i>Feed:</i> fed at a rate of 3.75 grams of oxytetracycline per 100 pounds of fish per day.
Penicillin G potassium.	C₁₆H₁₇KN₂O₄S	Control and prevention of external and systemic bacterial infections.	<i>Bath:</i> used in tanks for six to eight hours at a concentration of 150 IU/ml (500,000,000 IU/311.8 gm. Packet).
Potassium permanganate (Cairox™).	KMnO₄ (chromium is known trace contaminant http://www.hepure.com/potassium-permanganate.html)	Control of external parasites and bacteria.	(1) <i>Flush:</i> used at a rate of 2 ounces per cfs of raceway flow, poured in all at once, for a total of 3 treatments, spaced 10 to 15 minutes apart (2.32 ppm for a 45 minute treatment, 3.48 ppm for a 30 minute treatment). (2) <i>Bath:</i> used at a rate of 2 ppm, or less, for one hour.
PVP Iodine	C ₆ H ₉ I ₂ NO	Disinfect and control diseases on fish eggs.	<i>Bath:</i> used at a concentration of 100 mg/L for 10 to 30 minutes.
Sodium bicarbonate.	NaHCO₃	Anesthetic.	<i>Bath:</i> used at a rate of 142 to 642 mg/L, usually in a small volume of water.
Sodium chloride (salt).	NaCl	Fish cleansing, disease control, and stress reduction.	<i>Flush:</i> used at a rate of 150 to 700 pounds of salt per cfs of raceway flow.
Sulfadimethoxine-ormetoprim (Romet-30®).	C ₁₄ H ₁₈ N ₄ O ₂	Control and prevention of external and systemic bacterial infections.	<i>Feed:</i> used at a rate of 50 milligrams of drug per kilogram of fish per day.
vibrio vaccine enteric redmouth bacterin		Vaccinate against	<i>Bath:</i> Fish are dipped into solution and then placed back into the production line.

ATTACHMENT J – PRIORITY POLLUTANT METALS MONITORING

- I. Background.** The Water Board has determined that, based on priority pollutant data collected from CAAP facilities, discharge of priority pollutants other than metals is unlikely. Accordingly, the Water Board is requiring, as part of the Monitoring and Reporting Program that the Discharger sample the effluent and upstream receiving water and analyze the samples for priority pollutant metals. Sections 2.4.1 through 2.4.4 of the 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://www.waterboards.ca.gov/iswp/index.html>.) Effluent and 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 effluent (EFF-001/R-001) and analyzed for the metals listed in Table J-1, **one time in 2014 and submitted no later than February 1, 2015.**

Table J-1 – List of Required Priority Pollutants

Constituent	Controlling Water Quality Criterion for Surface Waters		Criterion Quantification Limit ug/L	Suggested Test Method
	Basis	Criterion Concentration ug/L		
Arsenic	Ambient Water Quality	0.018	0.01	EPA 1632
Barium	Basin Plan Objective	100	100	EPA 6020/200.8
Beryllium	Primary MCL	4	1	EPA 6020/200.8
Cadmium	Public Health Goal	0.07	0.25	EPA 1638/200.8
Chromium (total)	Primary MCL	50	2	EPA 6020/200.8
Chromium (VI)	Draft Public Health Goal	0.02	0.5	EPA 7199/1636
Copper	National Toxics Rule	4.1	0.5	EPA 6020/200.8
Cyanide	National Toxics Rule	5.2	5	EPA 9012A
Iron	Secondary MCL	300	100	EPA 6020/200.8
Lead	Calif. Toxics Rule	0.92	0.5	EPA 1638
Mercury	TMDL Development		0.0002	EPA 1669/1631
Manganese	Secondary MCL/ Basin Plan Objective	50	20	EPA 6020/200.8
Nickel	Calif. Toxics Rule	24	5	EPA 6020/200.8
Selenium	Calif. Toxics Rule	5	5	EPA 6020/200.8
Silver	Calif. Toxics Rule	0.71	1	EPA 6020/200.8
Thallium	National Toxics Rule	1.7	1	EPA 6020/200.8
Tributyltin	Ambient Water Quality	0.063	0.002	EV-024/025
Zinc	Calif. Toxics Rule/ Basin Plan Objective	54/ 16	10	EPA 6020/200.8

ATTACHMENT K – 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, over-head coverage.) To achieve these objectives, facility operators should consider the five phase process for SWPPP development and implementation as shown in Table K-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 Water Board inspectors.

II. Planning and Organization

The SWPPP shall identify a specific individual or individuals and their positions within the facility 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. For small facilities, 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.

**TABLE K-1
FIVE PHASES FOR DEVELOPING AND IMPLEMENTING INDUSTRIAL
STORM WATER POLLUTION PREVENTION PLANS**

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

IMPLEMENTATION PHASE

Train employees
Implement BMPs
Conduct recordkeeping and reporting

EVALUATION / MONITORING

Conduct annual site evaluation
Review monitoring information
Evaluate BMPs
Review and revise SWPPP

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 site. 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 Facilities 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 Facilities 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 K-2.

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 shall 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.

TABLE K-2

**EXAMPLE
ASSESSMENT OF POTENTIAL POLLUTION SOURCES AND
CORRESPONDING BEST MANAGEMENT PRACTICES
SUMMARY**

Example

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.

The description of the BMPs shall 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 K-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. Facility operators should consider all 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 of 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 shall be retained on site and made available upon request of a representative of the Water Board.
- B. The 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 Water Board, the facility operator 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 facility operator shall submit a report to the 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 Water Board under Section 308(b) of the Clean Water Act.

IX. Annual Comprehensive Site Compliance Evaluation

The facility operator 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 non-compliance 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.

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