CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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ORDER NO. R5-2014-XXXX
GENERAL NPDES NO. CAG135001

WASTE DISCHARGE REQUIREMENTS FOR COLD WATER CONCENTRATED AQUATIC ANIMAL PRODUCTION FACILITY DISCHARGES TO SURFACE WATERS

The following Dischargers are subject to waste discharge requirements as set forth in this General Order (as authorized by the Notice of Applicability):

Table 1. Discharger Information

Dischargers	This General Order applies to individuals, public agencies, private businesses, and other legal entities (hereafter Dischargers) that operate facilities which meet the definition of a Concentrated Aquatic Animal Production Facility, as defined in section 122.24 of Title 40 of the *Code of Federal Regulations*, and that discharge to water bodies within the Sacramento and San Joaquin River Basins and Tulare Lake Basin. To be eligible for coverage under this General Order, a fish hatchery, fish farm, or other such facility must contain, grow, or hold cold water species of fin fish in ponds, raceways, or similar structures. Facilities covered by this General Order discharge at least 30 calendar days per year, produce at least 20,000 pounds harvest weight of aquatic animals per year, and feed at least 5,000 pounds of food during the calendar month of maximum feeding. Facilities that do not meet the above criteria may also be designated a cold water concentrated aquatic animal production (CAAP) facility upon a determination that the facility is a significant contributor of pollution to waters of the United States.
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified these discharges as minor discharges.	

Table 2. Administrative Information

This Order was adopted by the Central Valley Regional Water Quality Control Board on:	**X December 2014**
This Order shall become effective on:	**1 January 2015**
This Order shall expire on:	**31 December 2019**

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on X December 2014.

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PAMELA C. CREEDON, Executive Officer

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I. PERMIT COVERAGE

A. Eligible Facilities

The following Discharger is eligible for coverage as set forth in this General Order (hereafter this Order):

A cold water "Concentrated Aquatic Animal Production" facility as defined in Title 40 Code of Federal Regulations (40 C.F.R.) 122.24 is a fish hatchery, fish farm, or other facility which 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 (hereinafter CAAP facility). In addition, the CAAP facility discharges at least 30 calendar days per year, produces at least 20,000 pounds harvest weight (9,090 kilograms) of aquatic animals per year, and feeds at least 5,000 pounds (2,272 kilograms) of food during the calendar month of maximum feeding. A Discharger that does not meet the above criteria may also be designated a CAAP facility upon a determination that the facility is a significant contributor of pollution to waters of the United States [40 C.F.R. 122.24(c)]. CAAP facilities not meeting the above criteria or designated as a significant contributor are not considered to be a point source and are not required to obtain a National Pollutant Discharge Elimination (NPDES) permit; however, enrollment under this Order would be allowed.

B. Authorized Discharges

1. This Order covers discharges to surface waters from CAAP facilities in the Central Valley Region discharging to the Sacramento and San Joaquin River Basins and the Tulare Lake Basin.

2. To be authorized by this Order, CAAP facilities must demonstrate that the discharge meets the following criteria:

    a. Except for formaldehyde, chlorine, copper, and any pollutant eligible for an intake water credit, for which compliance with water quality-based effluent limitations is required in Sections V.A and V.B of this Order, pollutant concentrations in the discharge do not cause, have a reasonable potential to cause, or contribute to an excursion above any applicable federal water quality criterion established by the United States Environmental Protection Agency (USEPA) pursuant to the Clean Water Act (CWA) section 303.

    b. Except for formaldehyde, chlorine, copper, and any pollutant eligible for an intake water credit, for which compliance with water quality-based effluent limitations is required in Sections V.A and V.B of this Order, pollutant concentrations in the discharge do not cause, have a reasonable potential to cause, or contribute to an excursion above any water quality objective adopted by the Central Valley Regional Water Quality Control Board (Central Valley Water Board) or State Water Resources Control Board (State Water Board), including prohibitions of discharge for the receiving waters.

c. The discharge does not cause acute or chronic toxicity in the receiving water.

3. Authorized discharges are subject to all the requirements and provisions set for in this Order.

4. This Order does not authorize the discharge of any waste streams, including spills and other unintentional or non-routine discharge of pollutants, that are not part of the normal operations of CAAP facilities as described in the Discharger's Notice of Intent (NOI), or any pollutants that are not ordinarily present in such waste streams.

5. This Order does not apply to CAAP facilities that discharge within the legal boundaries of the Sacramento-San Joaquin Delta as there are site-specific water quality objectives for Delta waters that are not considered in this Order.

C. Permit Expiration

This Order will expire 5 years after its effective date, as specified on the cover page of this Order. In accordance with 40 C.F.R. 122.6, if the permit is not reissued by the expiration date, the conditions of this Order will continue in force and effect until a new general order is issued. Only those CAAP facilities authorized to discharge under the expiring Order will remain authorized to discharge under the administratively continued permit conditions, provided they submit a NOI at least 180 days prior to the expiration date of this Order, unless the Executive Officer grants permission for a later date (the NOI cannot be submitted later than the expiration date of this Order).

II. NOTIFICATION REQUIREMENTS

A. General Order Application

Existing CAAP facilities that have submitted a Report of Waste Discharge (ROWD) for renewal of their existing individual NPDES permit, and the ROWD has been deemed complete by the Executive Officer, will be considered for coverage under this Order. Existing CAAP facilities with individual NPDES permits that expire after adoption of this Order must submit a complete NOI for coverage as shown in **Attachment E** at least 180 days prior to the expiration of their individual NPDES permit.

A new CAAP facility must submit a NOI and the first annual filing fee at least 180 days prior to initiation of a new discharge. A CAAP facility that is a "new source," as defined in 40 C.F.R. 122.2 and 122.29, will be required to comply with the California Environmental Quality Act (CEQA) and USEPA's new source performance standards. A "new source" is defined as a facility that produces 100,000 pounds or more per year in flow-through or recirculating systems that are constructed after 22 September 2004. A facility is a "new source" if (1) the facility is constructed at a site where no other facility is located, (2) the facility totally replaces the process or production equipment that causes the discharge of pollutants at the existing facility, or (3) the facility process is substantially independent of an existing facility at the same site [40 C.F.R. 122.29 (b)].

New sources will not automatically be covered under this Order and may be required to submit an application for an individual NPDES permit.

~~The State Water Board has determined that individual or general permits for a~~Aquaculture activities defined in 40 C.F.R. 122.25(b) will be subject to the ~~same~~ annual fee for general NPDES permits and de minimus discharges that are regulated by individual or general NPDES permits (~~State Water Board Resolution 2002-0150~~California Code of Regulations Section 2200(b)(9) for Category 3 discharges).

B. General Order Coverage

Upon review of the completed ROWD or NOI, the Executive Officer shall determine the applicability of this Order to the CAAP facility discharge(s). If the CAAP facility is deemed eligible for coverage, the Executive Officer shall issue a Notice of Applicability (NOA). The NOA shall assign an individual general permit number notifying the CAAP facility that the discharge is authorized under the terms and conditions of this Order. The NOA may specify additional site specific monitoring and reporting requirements. A new discharge (new source) for which coverage under this Order is being sought shall not commence until after receiving the written NOA or until the Central Valley Water Board has issued an individual NPDES permit for the discharge.

The Central Valley Water Board may require any CAAP facility requesting coverage under this Order to apply for and obtain an individual NPDES permit in accordance with 40 C.F.R. 122.28(b)(3)(i). Circumstances where an individual NPDES permit may be required include, but are not limited to, where the CAAP facility is not in compliance or is not expected to be in compliance with the terms and conditions of this Order, or where a total maximum daily load (TMDL) has been completed for a water body or a segment of a water body approved after the effective date of this Order. CAAP facilities that discharge to a water body with an approved TMDL, or a water body listed on the State's CWA section 303(d) list, will be evaluated on a case-by-case basis for coverage under this Order or coverage under an individual permit (see section IV.D of the Attachment D - Fact Sheet for more information).

In accordance with 40 C.F.R. 122.28(b)(3)(iii), any Discharger may request to be excluded from coverage under a general NPDES permit by applying for an individual NPDES permit. This request must provide justification supporting the request for an individual NPDES permit and reasons why coverage under this Order is not appropriate. Upon receipt of the request and application, the Executive Officer shall determine if an individual NPDES permit should be issued.

Dischargers currently covered by General Order R5-2010-0018-01 are automatically granted coverage under this renewed General Order, provided they submitted a NOI per Section I.C, above.

C. Termination of Coverage

Upon receiving the NOA, the CAAP facility is subject to the terms and conditions of this Order and is responsible for submitting monitoring reports and the annual fee

associated with this Order until a written request for official termination of coverage is received. If the Central Valley Water Board issues an individual NPDES permit or Waste Discharge Requirements (WDRs) with more specific requirements to a CAAP facility, the applicability of this Order is automatically terminated on the effective date of the individual permit.

III. FINDINGS

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

A. Legal Authorities. This Order is issued pursuant to section 402 of the federal CWA and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from CAAP facilities to surface waters. This Order also serves as WDRs pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

Section 122.28 of 40 C.F.R. authorizes the USEPA and approved states to issue general permits to regulate a point source category, if the sources:

1. Involve the same or substantially similar types of operations;
2. Discharge the same type of waste;
3. Require the same type of effluent limitations or operating conditions;
4. Require similar monitoring; and
5. Are more appropriately regulated under a general permit rather than individual permits.

On 22 September 1989, USEPA granted the State of California, through the State Water Board and the Regional Water Boards, the authority to issue general NPDES permits pursuant to 40 C.F.R. 122 and 123.

B. Background and Rationale for Requirements. The Central Valley Water Board developed the requirements in this Order based on readily available information for similar discharges, through monitoring and reporting programs contained in individual NPDES permits for existing CAAP facilities, and other available information. The Fact Sheet (Attachment D), 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 C and E through G are also incorporated into this Order.

C. Monitoring and Reporting. 40 C.F.R. 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. CWC sections 13267 and 13383 authorize the Central Valley 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 C.

The technical and monitoring reports in this Order are required in accordance with CWC Section 13267, which states the following in subsection (b)(1), "*In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.*"

The Discharger owns and operates the Facility subject to this Order. The monitoring reports required by this Order are necessary to determine compliance with this Order. The need for the monitoring reports is discussed in the Fact Sheet.

D. Provisions and Requirements Implementing State Law. The provisions/requirements in subsection V.C., VI.B., and VII. A.2.s. 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.

E. Notification of Interested Parties. The Central Valley Water Board has notified the interested agencies and persons of its intent to prescribe WDRs for the discharge from CAAP facilities and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet in Attachment D.

F. Consideration of Public Comment. The Central Valley 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 in Attachment D.

IT IS HEREBY ORDERED, that Order R5-2010-0018-01 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 CWC (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

IV. DISCHARGE PROHIBITIONS

A. Discharge of wastes other than waste streams and operations that have clearly been identified in the ROWD or NOI, those specified in this Order, and those specified in the NOA issued by the Executive Officer, is prohibited unless the Discharger obtains coverage under another general or individual Order that regulates the discharge of such wastes.

B. The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G and I.H (Attachment B).

C. Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the California Water Code.

D. The discharge of hazardous or toxic substances including cleaning chemicals, solvents, oil, grease or other petroleum products, is prohibited.

E. Practices that allow accumulated sludge, grit, and solid residues to be discharged to surface waters or surface water drainage courses are prohibited.

F. The discharge of domestic sanitary wastes to surface waters or surface water drainage courses is prohibited.

V. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

During the effective period of this Order, the Discharger is authorized to discharge pollutants from the outfall(s) specified in its ROWD or NOI within the limits and subject to the conditions set forth in this Order. This Order authorizes the discharge of only those pollutants resulting from facility processes, waste streams, and operations that have been clearly identified in the ROWD or NOI, including non-production facilities, such as laboratories and domestic waste treatment facilities that discharge to land.

The constituents subject to effluent limitations, as identified in the Notice of Applicability (NOA) from the Executive Officer, shall not exceed the respective effluent limitations contained in Sections A and B, below.

A. Effluent Limitations – Applicable to All Discharges to Surface Waters

1. Final Effluent Limitations –Formaldehyde, Total Suspended Solids, and Chlorine

a. Discharge~~r~~s to surface waters shall not exceed the effluent limitations contained in Table 1 below.

Table 1. Effluent Limitations Formaldehyde and Chlorine

Parameter	Units	Average Monthly Effluent Limitation	Maximum Daily Effluent Limitation
Formaldehyde	mg/L	0.65	1.3
Chlorine	mg/L	--	0.018

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

2. Final Effluent Limitations – Application of Intake Water Credits

For pollutants in which intake water credits have been granted as part of the NOA, the monthly average pollutant concentration and mass in the effluent shall not exceed the corresponding monthly average concentration and mass as measured in the influent.

Where a facility uses multiple intake sources, the monthly average influent concentration and mass shall be reported based on the flow-weighted amount from each intake source. It shall be assumed that the pollutant concentration from any water sources other than the receiving water has a pollutant concentration that is no greater than the most stringent applicable water quality objective.

B. Effluent Limitations – Applicable to Discharges to Specific Water Bodies

1. Final Effluent Limitations – Copper

a. The effluent limitations contained in Table 2, are for discharges to the Sacramento River from the State Highway 32 Bridge at Hamilton City to the I Street Bridge at the City of Sacramento; the American River from Folsom Dam to the Sacramento River; and Folsom Lake. For hardness less than 70 mg/L (as $CaCO_3$) the effluent limitations are based on California Toxics Rule (CTR) hardness-dependent criteria, while at greater hardness the effluent limitations are based on the Basin Plan's site-specific objective. The applicable maximum daily effluent limit from Table 2 will be established in the NOA.

Table 2. Effluent Limitations Copper-Sacramento River from the State Highway 32 Bridge at Hamilton City to the I Street Bridge at the City of Sacramento; the American River from Folsom Dam to the Sacramento River; and Folsom Lake

Receiving Water Hardness, H (mg/L as $CaCO_3$)	Maximum Daily Effluent Limitation (µg/L, Total Recoverable)
H < 10	0.8
10 ≤ H < 20	2.3
20 ≤ H < 30	3.8
30 ≤ H < 40	5.2
40 ≤ H < 50	6.6
50 ≤ H < 60	8.0
60 ≤ H < 70	9.3
H ≥ 70	10.4

b. The effluent limitations contained in Table 3 are for discharges to the Sacramento River and its tributaries above the State Highway 32 Bridge at Hamilton City, and are based on the Basin Plan's hardness-dependent site-specific objective. The applicable maximum daily effluent limit from Table 3 will be established in the NOA.

Table 3. Effluent Limitations Copper-Sacramento River and its Tributaries above the State Highway 32 Bridge at Hamilton City (Basin Plan)

Receiving Water Hardness, H (mg/L as $CaCO_3$)	Maximum Daily Effluent Limitation (µg/L, Total Recoverable)
H < 10	1.6
10 ≤ H < 20	2.3
20 ≤ H < 30	3.7
30 ≤ H < 40	5.0

Receiving Water Hardness, H (mg/L as $CaCO_3$)	Maximum Daily Effluent Limitation (µg/L, Total Recoverable)
40 ≤ H < 50	6.3
50 ≤ H < 60	7.5
60 ≤ H < 70	8.7
70 ≤ H < 80	9.9
80 ≤ H < 90	11
90 ≤ H < 100	12
100 ≤ H < 200	19
H ≥ 200	24

c. The effluent limitations contained in Table 4 are for discharges to all other receiving waters, not identified in a. and b., above, and are based on CTR hardness-dependent criteria. The applicable maximum daily effluent limit from Table 4 will be established in the NOA.

Table 4. Effluent Limitations Copper-Hardness Dependent (CTR)

Receiving Water Hardness, H (mg/L as $CaCO_3$)	Maximum Daily Effluent Limitation (µg/L, Total Recoverable)
H < 10	1.6
10 ≤ H < 20	2.3
20 ≤ H < 30	3.8
30 ≤ H < 40	5.2
40 ≤ H < 50	6.6
50 ≤ H < 60	8.0
60 ≤ H < 70	9.3
70 ≤ H < 80	11
80 ≤ H < 90	12
90 ≤ H < 100	13
100 ≤ H < 200	20
H ≥ 200	27

d. **Application of Intake Water Credits**

For Dischargers that have been granted an intake water credit for copper as part of the NOA, and for which the maximum daily effluent total recoverable copper concentration exceeds a copper effluent limitation as specified in sections V.B.3.a through V.B.3.c above, shall be considered in compliance with that copper effluent limitation if the measured maximum daily effluent total recoverable copper concentration does not exceed the respective maximum daily intake total recoverable copper concentration (sampled on the same calendar day).

C. Land Discharge Specifications

1. Percolation/Settling Basins – Fish Hatchery Wastes

a. Neither the treatment nor the discharge shall cause a nuisance or pollution as defined by the CWC, section 13050.

b. The discharge shall not cause the degradation of any water supply.

c. Freeboard shall not be less than 1 foot (measured vertically to the lowest point of overflow), except if lesser freeboard does not threaten the integrity of the pond, no overflow of the percolation pond occurs, and lesser freeboard is due to direct precipitation or storm water runoff occurring as a result of annual precipitation with greater than a 100-year recurrence interval, or a storm event with an intensity greater than a 25-year, 24-hour storm event.

2. Domestic Sewage Lagoons/Septic Tank Leachfields

a. The domestic sewage discharge shall be maintained within the designated disposal areas at all times, and there shall be no surfacing effluent or direct discharge to surface waters or surface water courses.

b. Neither the treatment nor the discharge shall cause a nuisance or pollution as defined by the CWC, section 13050.

c. The discharge shall not cause the degradation of any water supply.

d. Objectionable odors originating at the facility shall not be perceived beyond the limits of the Discharger's property.

e. As a means of discerning compliance with Land Discharge Specification V.C.2.d., the dissolved oxygen content in the upper zone (1 foot) of the sewage lagoon shall not be less than 1.0 mg/L.

f. The domestic sewage lagoons shall be managed to prevent breeding of mosquitoes. In particular:

i. An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.

ii. Weeds shall be minimized through control of water depth, harvesting, or herbicides.

iii. Dead algae, vegetation, and debris shall not accumulate on the water surface.

g. Public contact with wastewater in the domestic wastewater pond and leachfield areas shall be precluded or controlled through such means as fences and signs, or acceptable alternatives.

h. Freeboard of sewage lagoons shall never be less than 2 feet (measured vertically to the lowest point of overflow).

D. Reclamation Specifications – Not Applicable

VI. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plans for the Sacramento and San Joaquin River Basins and the Tulare Lake Basin and are a required part of this Order. Unless otherwise specified below the following receiving water limitations are applicable to the Sacramento and San Joaquin River Basins and the Tulare Lake Basin. Any discharge authorized for coverage under this Order shall not cause the following in the receiving water:

1. **Un-ionized Ammonia**. Un-ionized ammonia to be present in amounts that adversely affect beneficial uses or in excess of 0.025 mg/L (as N) in water bodies in the Tulare Lake Basin.

2. **Bacteria**. The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, and no more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.

3. **Biostimulatory Substances**. Water to contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses.

4. **Chemical Constituents**. Chemical constituents to be present in concentrations that adversely affect beneficial uses.

5. **Color**. Discoloration that causes nuisance or adversely affects beneficial uses.

6. **Dissolved Oxygen**:

   a. The following apply to all water bodies in the Sacramento and San Joaquin River Basins and Tulare Lake Basin:

      i. The monthly median of the mean daily dissolved oxygen concentration to fall below 85 percent of saturation in the main water mass;

ii. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation;
iii. The dissolved oxygen concentration to be reduced below 7.0 mg/L for water bodies designated COLD at any time; nor
iv. The dissolved oxygen concentration to be reduced below 5.0 mg/L for water bodies designated WARM at any time.

b. The more stringent dissolved oxygen objectives that apply to specific water bodies in the Sacramento and San Joaquin Rivers Basin Plan, Table III-2, and the Tulare lake Basin, Table III-1, are incorporated by reference.

7. **Electrical Conductivity:**

Electrical conductivity objectives that apply to specific waterbodies in the Sacramento and San Joaquin River Basin Plan, Table III-3 and Tulare Lake Basin Plan, Tables III-2 and III-3, are incorporated by reference.

8. **Floating Material**. Floating material to be present in amounts that cause nuisance or adversely affect beneficial uses.

9. **Oil and Grease**. Oils, greases, waxes, or other materials to be present in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

10. **pH**. The pH shall not to be depressed below 6.5 or raised above 8.5 for the Sacramento and San Joaquin River Basins (except Goose Lake). The pH shall not to be depressed below 7.5 or raised above 9.5 within Goose Lake. The pH to be depressed below 6.5, raised above 8.3, or changed by more than 0.3 units for the Tulare Lake Basin.

11. **Pesticides**:

a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;

b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;

c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by USEPA or the Executive Officer for the Sacramento and San Joaquin River Basins or prescribed in Standard Methods for the Examination of Water and Wastewater, 18th Edition;

d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 C.F.R. 131.12.) for the Sacramento and San Joaquin River Basins;

e. Pesticide concentrations to exceed the lowest levels technically and economically achievable for the Sacramento and San Joaquin River Basins;

f. Pesticides to be present in concentration in excess of the maximum contaminant levels set forth in CCR, Title 22, Division 4, Chapter 15 for the Sacramento and San Joaquin River Basins or as specified in Table 64444-A (Organic Chemicals) of section 64444 of Title 22 for the Tulare Lake Basin;

g. Thiobencarb to be present in excess of 1.0 µg/L for the Sacramento and San Joaquin River Basins

12. **Radioactivity**:

a. Radionuclides to be present in concentrations that are harmful to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.

b. Radionuclides to be present in excess of the maximum contaminant levels specified in Table 4 (MCL Radioactivity) of section 64443 of Title 22 of the California Code of Regulations**.**

13. **Suspended Sediments**. The suspended sediment load and suspended sediment discharge rate of surface waters to be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

14. **Settleable Substances**. Substances to be present in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.

15. **Suspended Material**. Suspended material to be present in concentrations that cause nuisance or adversely affect beneficial uses.

16. **Taste and Odors**. Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses**.**

17. **Temperature**. The natural temperature of COLD or WARM intrastate waters to be increased by more than 5°F above natural receiving water temperature.

    The temperature objectives that apply to specific water bodies in the Sacramento and San Joaquin Rivers Basin Plan, Tables III-4 and III-4A, are incorporated by reference.

18. **Total Dissolved Solids.**

    The following total dissolved solids objectives apply to specific water bodies listed below in the Sacramento and San Joaquin River Basins:

a. Total dissolved solids shall not exceed 125 mg/L (90th percentile) in the North Fork of the American River from the source to Folsom Lake; Middle Fork of the American River from the source to Folsom Lake; South Fork of the American River from the source to Folsom Lake; American River from Folsom Dam to Sacramento River; and

b. Total dissolved solids shall not exceed 100 mg/L (90th percentile) in Folsom Lake.

19. **Toxicity**. Toxic substances to be present, individually or in combination, in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.

20. **Turbidity**. Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. The turbidity attributable to controllable water quality factors to increase as follows:

a. For the Sacramento and San Joaquin River Basins:

i. Turbidity shall not exceed 2 Nephelometric Turbidity Unit (NTU) where natural turbidity is less than 1 NTU;

ii. Turbidity shall not increase more than 1 NTU where natural turbidity is between 1 and 5 NTU;

iii. Turbidity shall not increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;

iv. Turbidity shall not increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; and

v. Turbidity shall not increase more than 10 percent where natural turbidity is greater than 100 NTUs.

b. For the Tulare Basin, turbidity shall not increase:

i. More than 1 NTU where natural turbidity is between 0 and 5 NTUs.

ii. More than 20 percent where natural turbidity is between 5 and 50 NTUs.

iii. More than 10 NTU where natural turbidity is between 50 and 100 NTUs.

iv. More than 10 percent where natural turbidity is greater than 100 NTUs.

In determining compliance with the above limitations, appropriate averaging periods may be applied upon approval by the Executive Officer, as described in the NOA.

For Folsom Lake and American River (Folsom Dam to Sacramento River), except for periods of storm runoff, the turbidity shall not be less than or equal to 10 NTUs. To the extent of any conflict with the general turbidity objectives above, the more stringent applies.

B. Groundwater Limitations

1. The discharge shall not cause the groundwater to be degraded, to exceed water quality objectives, unreasonably affect beneficial uses, or cause a condition of pollution or nuisance.

2. The discharge shall not cause the groundwater to contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

3. The discharge shall not cause toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial uses. This limitation applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances.

4. The domestic waste discharge shall not cause groundwater under and beyond the disposal area to contain any of the following constituents in concentrations greater than as listed or greater than natural background quality, whichever is greater:

Constituent	Units	Limitation
Total Coliform Organisms	MPN/100 mL	2.2
Total Dissolved Solids	mg/L	500
Nitrate (as N)	mg/L	10

VII. PROVISIONS

A. Standard Provisions

1. All Dischargers authorized to discharge under this Order shall comply with all Standard Provisions included in Attachment B of this Order.

2. All Dischargers authorized to discharge under this Order shall comply with the following provisions:

   a. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

      i. violation of any term or condition contained in this Order;

      ii. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;

iii. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and

iv. a material change in the character, location, or volume of discharge.

The causes for modification include:

- *New regulations.* New regulations have been promulgated under section 405(d) of the Clean Water Act, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.

- *Land application plans.* When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

- *Change in sludge use or disposal practice.* Under 40 C.F.R. 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

The Central Valley Water Board may review and revise this Order at any time upon application of any affected person or the Central Valley Water Board's own motion.

b. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Central Valley Water Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, even if this Order has not yet been modified.

c. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

i. contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or

ii. controls any pollutant limited in the Order.

This Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

d. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

e. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.

f. The discharge of any radiological, chemical or biological warfare agent or high-level, radiological waste is prohibited.

g. A copy of this Order and the NOA shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

h. Safeguard to electric power failure:

    i. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.

    ii. Upon written request by the Central Valley Water Board the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past 5 years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Central Valley Water Board.

    iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Central Valley Water Board not approve the existing safeguards, the Discharger shall, within ninety days of having been advised in writing by the Central Valley Water Board that the existing safeguards are inadequate, provide to the Central Valley Water Board and USEPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Central Valley Water Board, become a condition of this Order.

i. A Discharger, upon written request of the Central Valley Water Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under Central Valley Water Board Standard Provision VII.A.2.k of this Order.

The technical report shall:

i. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

ii. Evaluate the effectiveness of present facilities and procedures and state when they became operational.

iii. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Central Valley Water Board, after review of the technical report, may establish conditions which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

j. The Discharger shall submit technical reports as directed by the Executive Officer. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code, sections 6735, 7835, and 7835.1. To demonstrate compliance with Title 16, CCR, sections 415 and 3065, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

k. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board and USEPA.

l. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

m. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy.

n. The Discharger shall file with the Central Valley Water Board technical reports on self-monitoring performed according to the detailed specifications contained in the Monitoring and Reporting Program attached to this Order.

o. The results of all monitoring required by this Order shall be reported to the Central Valley Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

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

q. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, maximum daily effluent limitation, 1-hour average effluent limitation, or receiving water limitation contained in this Order, the Discharger shall notify the Central Valley Water Board by telephone within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 5 days, unless the Central Valley Water Board waives confirmation. The written notification shall include the information required by the Standard Provision contained in Attachment B section V.E.1. [40 C.F.R. 122.41(l)(6)(i)].

r. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

s. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board.

   To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Central Valley Water Board and a statement. The statement shall comply with the signatory and certification requirements in the federal Standard Provisions (Attachment B, section V.B) and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the CWC. Transfer shall be approved or disapproved in writing by the Executive Officer.

B. Monitoring and Reporting Program Requirements

1. Each Discharger shall comply with the Monitoring and Reporting Program, and future revisions thereto, in Attachment C, of this Order and as specified in the NOA for each CAAP facility issued by the Executive Officer.

C. Special Provisions

1. Reopener Provisions

a. This Order may be reopened for modification, or revocation and reissuance in accordance with the provisions contained in 40 C.F.R. 122.62.

b. Conditions that necessitate a major modification of a permit are described in 40 C.F.R. 122.62, including:

   i. If new or amended applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, this Order may be reopened and modified in accordance with the new or amended standards.

   ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.

c. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in the NOA as a result of the special condition monitoring data.

2. Drug and Other Chemical Use Reporting

a. **Chemical and Aquaculture Drug Use.** This Order authorizes the discharge of Oxytetracycline, penicillin G, florfenicol, amoxycillin trihydrate, erythromycin, vibrio vaccine (not discharged/fish are removed and dipped via nets in vaccine and then returned to the raceway), enteric redmouth bacterin (not discharged/fish are removed and dipped via nets in vaccine and then returned to the raceway), Romet-30, MS-222, PVP Iodine, formaldehyde, hydrogen peroxide, potassium permanganate, copper sulfate, sodium chloride, acetic acid, chlorine, chloramine-T and SLICE (Emamectin benzoate 0.2% administered via medicated feed) to surface waters in accordance with label directions, effluent limitations, Best Management Plan requirements, Monitoring and Reporting requirements and other conditions of this Order and NOA issued by the Executive Officer. Other aquaculture chemicals or drugs that may enter the wastewater discharge can only be authorized if the CAAP facility notifies the Central Valley 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 and the resulting calculated concentration in the discharge;
iv. The duration and frequency of the proposed use;
v. Material Safety Data Sheets and available toxicity information; and
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* to determine the No Observed Adverse Effect Level (NOAEL) and Lowest Observed Adverse Effect Level (LOAEL).

3. Best Management Practices and Pollution Prevention

a. **Best Management Practices (BMP) and Pollution Prevention as Required in 40 C.F.R. 451.11**

Each Discharger must certify within **90 days** of the issuance of **the NOA authorizing coverage under this Order** that a BMP Plan has been developed and is being implemented as required by 40 C.F.R. Part 451. 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 BMP Plan shall include a salinity evaluation and minimization plan to address salt treatments at the CAAP facility. The Discharger shall review the BMP Plan annually and must amend the BMP Plan whenever there is a change in the facility or in the operation of the facility which materially increases the generation of pollutants or their release or potential release to surface waters.

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

i. *Operational requirements for solids control*. The Discharger shall:

a) Feed management and feeding strategies must minimize the discharge of unconsumed food.

b) Raceways and ponds must be cleaned at such frequency and in such a manner to minimize the discharge of accumulated solids discharged to waters of the U.S.

c) Fish grading, harvesting and other activities within raceways or ponds must be conducted in such a manner to minimize the discharge of accumulated solids.

d) Fish mortalities 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.

e) Water used in the rearing or holding units or hauling trucks that is disinfected with chlorine or other chemicals must meet effluent limitations in this Order before it is discharged to waters of the U.S.

f) 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 to the Executive Officer

1) Participation in Investigational New Animal Drug (INAD) studies, using established protocols; or

2) Extralabel drug use, as prescribed by a veterinarian.

ii. *Materials storage*. The Discharger shall:

a) Ensure proper storage of drugs, chemicals, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides or feed to waters of the United States.

b) Implement procedures for properly containing, cleaning, and disposing of any spilled material.

iii. *Structural maintenance*. The Discharger shall:

a) Inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.

b) Conduct regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.

iv. *Recordkeeping*. The Discharger shall:

a) In order to calculate representative feed conversion ratios, maintain records for aquatic animal rearing units documenting the feed amounts and estimates of the numbers and weight of aquatic animals.

b) Keep records documenting the frequency of cleaning, inspections, maintenance and repairs.

v. *Training*. The Discharger shall:

a) Train all relevant facility personnel in spill prevention and how to respond in the event of a spill in order to ensure the proper clean-up and disposal of spilled material.

b) Train personnel on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment.

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.

4. Waste Disposal

a. Collected screenings 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 facility's BMP Plan. Any other form of disposal requires approval from the Executive Officer.

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

6. Other Special Provisions - Not Applicable

7. Compliance Schedules - Not Applicable

VIII. COMPLIANCE DETERMINATION

A. Formaldehyde Effluent Limitations (Section V.A.1). Compliance with the effluent limitations for formaldehyde may be evaluated using an estimated effluent concentration in lieu of effluent monitoring data. The estimated effluent concentration shall be calculated as described in Section IX.A of Attachment C, Monitoring and Reporting Program.

ATTACHMENT A – 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.

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

Best Management Practices (BMP) means 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 leads, 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 CWC 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.

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

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

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

Concentrated Aquatic Animal Production (CAAP)
40 C.F.R. 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 that 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.

Enclosed Bays
Encloses Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

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

Extralabel Drug Use
A drug approved under the Federal Food, Drug, and Cosmetic Act that is not used in accordance with the approved label directions, (See 21 C.F.R. 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.

Inland Surface Waters
All surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

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

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

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

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

Method Detection Limit (MDL)
MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 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
Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

New Source
A facility from which there is or may be a pollutant discharge, the construction of which commenced after September 22, 2004 (See 40 C.F.R. 122.2).

Notice of Applicability (NOA)
A written notification issued by the NPDES permitting authority authorizing discharge under the terms and conditions of a general order.

Notice of Intent (NOI)
A written application submitted by to the NPDES permitting authority seeking authorization to discharge under a general order.

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.

Ocean Waters
The territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

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

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

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

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 Central Valley 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.

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.

Source of Drinking Water
Any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

Standard Deviation (σ)

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

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

where:

x is the observed value;

μ is the arithmetic mean of the observed values; and

n is the number of samples.

ATTACHMENT B –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. 122.41(a); Wat. Code §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

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

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. 122.41(g).)

2. The issuance of this 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 C.F.R. 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Central Valley Water Board, 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 (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. 122.41(i); CWC section 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. (C.F.R.122.41(i)(1)); Wat. Code, §§ 13267, 13383);

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. 122.41(i)(2); Wat. Code, §§ 13267, 13383);

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C § 1318(a)(4)(B)(ii); 40 C.F.R. 122.41(i)(3); Wat. Code, § 13267, 13383); and

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. (33 U.S.C § 1318(a)(4)(B); 40 C.F.R. 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

G. Bypass

1. Definitions

   a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. 122.41(m)(1)(i).)

   b. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. 122.41(m)(1)(ii).)

2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential

maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. 122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Central Valley Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. 122.41(m)(4)(i)):

   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. 122.41(m)(4)(i)(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 C.F.R. 122.41(m)(4)(i)(B)); and

   c. The Discharger submitted notice to the Central Valley Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. 122.41(m)(4)(i)(C).)

4. The Central Valley Water Board may approve an anticipated bypass, after considering its adverse effects, if the Central Valley Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. 122.41(m)(4)(ii).)

5. Notice

   a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. 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 (24-hour notice). (40 C.F.R. 122.41(m)(3)(ii).)

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. 122.41(n)(2).).

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. 122.41(n)(3)):

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. 122.41(n)(3)(i));

   b. The permitted facility was, at the time, being properly operated (40 C.F.R. 122.41(n)(3)(ii));

   c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. 122.41(n)(3)(iii)); and

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. 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 C.F.R 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 reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. 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 C.F.R. 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Central Valley Water Board. The Central Valley Water Board may require modification or revocation and reissuance 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 C.F.R. 122.41(l)(3); 122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. 122.41(j)(1).)

B. Monitoring results must be conducted according to test procedures approved under 40 C.F.R. 136 for the analyses of pollutants unless another method is required under 40 C.F.R. subchapters N or O. In the case of pollutants for which there are no approved methods under 40 C.F.R. 136 or otherwise required under 40 C.F.R. subchapters N or O, monitoring must be conducted according to a test procedure specified in this Order for such pollutants. (40 C.F.R. 122.41(j)(4) and 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 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 Central Valley Water Board Executive Officer at any time. (40 C.F.R. 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 C.F.R. 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 C.F.R. 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 C.F.R. 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 C.F.R. 122.41(j)(3)(v)); and

6. The results of such analyses. (40 C.F.R. 122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. 122.7(b)):

1. The name and address of any permit applicant or Discharger (40 C.F.R. 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 C.F.R. 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Central Valley Water Board, State Water Board, or USEPA within a reasonable time, any information which the Central Valley 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 Central Valley Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 C.F.R. 122.41(h); Wat. Code, §§ 13267, 13383.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. 122.41(k).)

3. All permit applications shall be signed as follows:

   a. For a corporation by a responsible corporate officer. For the purposes 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 take 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 C.F.R 122.22(a)(1));

b. For a partnership of sole proprietorship by a general partner or the proprietor, respectively (40 C.F.R. 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 C.F.R. 122.22(a)(3).).

3. All reports required by this Order and other information requested by the Central Valley Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. 122.22(b)(1));

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. 122.22(b)(2)); and

   c. The written authorization is submitted to the Central Valley Water Board and State Water Board. (40 C.F.R 122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Central Valley Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. 122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above 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 C.F.R. 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 C.F.R. 122.22(l)(4).)

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Central Valley Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. 122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in 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 Central Valley Water Board. (40 C.F.R. 122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. 122.41(l)(4)(iii).)

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The Discharger shall report 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 C.F.R. 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. 122.41(l)(6)(ii)):

   a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. 122.41(l)(6)(ii)(A).)

b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. 122.41(l)(6)(ii)(B).)

3. The Central Valley 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 C.F.R. 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Central Valley Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. 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 C.F.R. 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 C.F.R.122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Central Valley 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 C.F.R. 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 C.F.R. 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 Central Valley Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

A. The Central Valley Water Board is authorized to enforce the terms of this Order under several provisions of the CWC, 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 Central Valley Water Board as soon as they know or have reason to believe (40 C.F.R. 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 C.F.R. 122.42(a)(1)):

    a. 100 micrograms per liter (µg/L) (40 C.F.R. 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 C.F.R. 122.42(a)(1)(ii));

    c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. 122.42(a)(1)(iii)); or

    d. The level established by the Central Valley Water Board in accordance with section 122.44(f). (40 C.F.R. 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 C.F.R. 122.42(a)(2)):

    a. 500 micrograms per liter (µg/L) (40 C.F.R. 122.42(a)(2)(i));

    b. 1 milligram per liter (mg/L) for antimony (40 C.F.R. 122.42(a)(2)(ii));

    c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. 122.42(a)(2)(iii)); or

d. The level established by the Central Valley Water Board in accordance with section 122.44(f). (40 C.F.R. 122.42(a)(2)(iv).)

ATTACHMENT C – MONITORING AND REPORTING PROGRAM (MRP)

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ATTACHMENT C – MONITORING AND REPORTING PROGRAM (MRP)

Title 40 of the Code of Federal Regulations (C.F.R.), section 122.48 (40 C.F.R. 122.48) requires that all NPDES permits specify monitoring and reporting requirements. California Water Code (CWC) sections 13267 and 13383 also authorize the Central Valley Regional Water Quality Control Board (Central Valley Water Board) to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements, which implement both federal and California regulations. Additional site specific monitoring requirements for constituents may be specified in the Notice of Applicability (NOA) issued by the Executive Officer.

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 Central Valley Water Board.

B. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

C. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the Department of Public Health (DPH). In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Central Valley Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Central Valley Water Board.

D. All analyses shall be performed in a laboratory certified to perform such analyses by DPH. Laboratories that perform sample analyses shall be identified in all monitoring reports.

E. 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. 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. Calculated flows shall be calculated consistent with accepted engineering practices.

F. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this MRP and the NOA.

G. Laboratories analyzing monitoring samples shall be certified by DPH, in accordance with the provision of CWC section 13176, and must include quality assurance/quality control data with their reports.

H. The Discharger shall file with the Central Valley Water Board technical reports on self-monitoring performed according to the detailed specifications contained in this MRP.

I. The results of all monitoring required by this Order shall be reported to the Central Valley Water Board and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

II. MONITORING LOCATIONS

Each Discharger shall establish the monitoring locations specified in Table C-1 to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order. The site-specific monitoring locations will be identified for each CAAP facility in the NOA based on the following:

Table C-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
Influent	**INF-001**	Shall be located where a representative sample of influent water can be collected prior to entering the CAAP facility. If there is more than one influent source, each source shall be designated in sequence and designated as **INF-002, INF-003,** etc.
Effluent	**EFF-001**	Shall be located where a representative sample of the effluent can be collected prior to discharging to surface water. If there is more than one discharge, each discharge point where a representative sample of the effluent can be collected prior to discharging to surface waters shall be designated as **EFF-002, EFF-003**, etc.
Receiving Water Upstream	**RSW-001**	Shall be located upstream of **EFF-001**
Receiving Water Downstream	**RSW-002**	Shall be located downstream of all discharge points. If there is more than one discharge, receiving water locations below each discharge point shall be located in sequence **RSW-003, RSW-004** etc.

III. INFLUENT MONITORING REQUIREMENTS

Each Discharger shall monitor the raw water supply to the CAAP facility at INF-001 (INF-002, etc if there is more than one water supply). The sampling frequency as specified in Tables C-2 or C-3 is based on the annual pounds of fish produced at the CAAP facility. Samples shall be collected at approximately the same time as effluent and receiving water samples. Site-specific influent monitoring shall be established in the NOA based on the following influent monitoring requirements:

A. Influent Monitoring for Facilities with Production Greater than 100,000 Pounds (lbs) of Fish

Table C-2. Influent Monitoring (Facilities with Production Greater than 100,000 lbs of Fish)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	S.U.	Grab	1/month[2]	[1]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/month[2]	[1]
Copper (Total recoverable)	µg/L	Grab	1/month during $CuSO_4$ use[2,3]	[1]
Hardness	mg/L	Grab	1/month during $CuSO_4$ use[2]	[1]
Total Suspended Solids	mg/L	Grab	1/month[2~~3~~]	[1]

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

[2] ~~Samples shall be collected at least once per month. If sodium chloride is used, EC shall be measured at least once per month during treatment.~~

[~~3~~] Samples shall be collected approximately at the same time as effluent samples.

[3] The maximum reporting level required for total recoverable copper is 0.5 µg/L, in accordance with Section 2.4.2 and Appendix 4 of the SIP.

B. Influent Monitoring for Facilities with Production Less than 100,000 lbs of Fish

Table C-3. Influent Monitoring (Facilities with Production Less than 100,000 lbs of Fish)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	S.U.	Grab	1/quarter[2]	[1]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/quarter[2]	[1]
Copper (Total recoverable)	µg/L	Grab	1/quarter during $CuSO_4$ use[2,3]	[1]
Hardness	mg/L	Grab	1/quarter during $CuSO_4$ use[2]	[1]
Total Suspended Solids	mg/L	Grab	1/year[2~~3~~]	[1]

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

[2] ~~Samples shall be collected at least once per quarter. If sodium chloride is used, EC shall be measured at least once per quarter during treatment.~~

[~~3~~] Samples shall be collected approximately at the same time as effluent samples.

[3] The maximum reporting level required for total recoverable copper is 0.5 µg/L, in accordance with Section 2.4.2 and Appendix 4 of the SIP.

C. Influent Monitoring for Facilities with Intake Water Credits

Influent samples shall be collected and analyzed in accordance with the frequency and type specified in the NOA for flow and each pollutant for which an intake water credit has been granted as specified in the NOA. Samples must be taken simultaneously from the influent and effluent or phased to account for the time that it takes water to travel from the water intake to the discharge point. For every influent sample taken an effluent sample must also be taken.

If multiple water sources are used at the facility, including the receiving water, the flow

of each water source must be measured to allow for calculation of flow-weighted influent concentration and mass values.

IV. EFFLUENT MONITORING REQUIREMENTS

~~A. Discharge Flow Rates~~

~~Each Discharger shall monitor the discharge flow rates at EFF-001 (EFF-002, EFF-003, etc. if there is more than one discharge point) when there is a discharge. Flows shall be reported in cubic feet per second (cfs) and shall be calculated or measured and recorded monthly.~~

~~B~~A. Discharge Water Quality

Effluent samples shall be collected from EFF-001, (EFF-002, EFF-003, etc if there is more than one discharge point). Sampling frequency as specified in Tables C-4 or C-5 is based on the annual pounds of fish produced at the CAAP facility. Effluent samples shall be representative of the volume and quality of the discharge. Effluent samples shall be collected during or immediately following raceway cleaning or administration of drug or chemical treatments and must be representative of the volume and quality of the discharge at the time when representative levels of solids, drugs, chemicals, or other pollutants are present in the discharge. Time of collection of samples shall be recorded. Site-specific effluent monitoring shall be established in the NOA based on the following effluent monitoring requirements:

1. Effluent Monitoring for Facilities with Production Greater than 100,000 lbs of Fish

Table C-4. Effluent Monitoring (Facilities with Production Greater than 100,000 lbs of Fish)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	cfs	Meter	1/month	[1]
Total Suspended Solids (TSS)	mg/L	Grab	1/month	[1]
Net TSS (effluent minus influent)	mg/L	Net Calculation	1/month	
Turbidity	NTU	Grab	1/month	[1]
pH	S.U.	Grab	1/month[3]	[1]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/month[2,6]	[1]
Copper (Total recoverable)	µg/L	Grab	1/month during $CuSO_4$ use[3,6]	[1]
Hardness	mg/L	Grab	1/month during $CuSO_4$ use[3]	[1]
Formaldehyde	mg/L	Grab[4]	1/month during Formalin use[4,6]	[1]
Chlorine[5]	mg/L	Grab	1/quarter during chlorine use[5,6]	[1]

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

[2] Samples shall be collected ~~at least once per~~ monthly. If sodium chloride is used, the monthly monitoring of EC shall be conducted ~~measured at least once per month~~ during treatment ~~and the sodium chloride use shall be reported in the Monthly Drug and Chemical Use Report per Section IX.A~~.

[3] ~~When copper sulfate is added to the waters of the Facility, total recoverable copper concentration shall be measured during copper sulfate use.~~ The maximum reporting level required for total recoverable copper is 0.5 µg/L, in accordance with Section 2.4.2 and Appendix 4 of the SIP~~The highest acceptable ML for calibration purposes is 0.5 µg/L~~. The monthly sample shall be collected during the time of peak discharge of copper, at least one hour after start of treatment. Effluent hardness and pH shall be measured at the same time as total recoverable copper.

[4] Estimated concentrations of formaldehyde may be reported in lieu of analytical monitoring during Formalin use. See Section IX.A for calculation procedures. If analytical monitoring is conducted, when Formalin is added to the waters of the Facility, formaldehyde concentration shall be measured during time of peak discharge of Formalin, at least one hour after start of treatment.

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

[6] Per Section IX.A, the discharger shall report all aquaculture drug and chemical use as part of the Monthly Drug and Chemical Use Report that is submitted on a quarterly basis.

2. Effluent Monitoring for Facilities with Production Less than 100,000 lbs of Fish

Table C-5. Effluent Monitoring (Facilities with Production Less than 100,000 lbs of Fish):

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	cfs	Meter	1/month	[1]
Turbidity	NTU	Grab	1/quarter	[1]
pH	S.U.	Grab	1/quarter[3]	[1]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/quarter[2,7]	[1]
Copper (Total recoverable)	µg/L	Grab	1/quarter during $CuSO_4$ use[3, 6]	[1]
Hardness	mg/L	Grab	1/quarter during $CuSO_4$ use[3]	[1]
Formaldehyde	mg/L	Grab	1/day during Formalin use ~~(see section IX.A)~~[4,7~~6~~]	[1]
Chlorine	mg/L	Grab	1/quarter during chlorine use[5,7~~4, 6~~]	[1]
Total Suspended Solids (TSS)	mg/L	Grab	1/year[6~~5~~]	[1]
Net TSS (effluent minus influent)	mg/L	Net Calculation	1/year	

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

[2] Samples shall be collected ~~at least once per~~ quarterly. If sodium chloride is used, the quarterly monitoring of EC shall be ~~measured at least once per quarter~~conducted during treatment~~ and the sodium chloride use shall be reported in the Monthly Drug and Chemical Use Report per Section IX.A~~.

[3] ~~Estimated concentrations of formaldehyde may be reported in lieu of analytical monitoring during Formalin use. See Section IX.A for calculation procedures. If analytical monitoring is conducted, when copper sulfate is added to the waters of the Facility, total recoverable copper concentration shall be measured during copper sulfate use.~~ The maximum reporting level required for total recoverable copper is 0.5 µg/L, in accordance with Section 2.4.2 and Appendix 4 of the SIP~~The highest acceptable ML for calibration purposes is 0.5 µg/L~~. The quarterly sample shall be collected during the time of peak discharge of copper, at least one hour after start of treatment. Effluent hardness and pH shall be measured at the same time as total recoverable copper.

[4~~3~~] Estimated concentrations of formaldehyde may be reported in lieu of analytical monitoring during Formalin use. See Section IX.A for calculation procedures. If analytical monitoring is conducted, when Formalin is added to the waters of the Facility, formaldehyde concentration shall be measured during time of peak discharge of Formalin, at least one hour after start of treatment.

[5~~4~~] Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.018 mg/L.

[6~~5~~] Samples shall be collected during the expected month of highest feeding.

[7~~6~~] Per Section IX.A, the discharger shall report all aquaculture drug and chemical use as part of the Monthly Drug and Chemical Use Report that is submitted on a quarterly basis.

3. Effluent Monitoring for Facilities with Intake Water Credits

Effluent samples shall be collected and analyzed in accordance with the frequency and type specified in the NOA for flow and each pollutant for which an intake water

credit has been granted as specified in the NOA. Samples must be taken simultaneously from the influent and effluent or phased to account for the time that it takes water to travel from the water intake to the discharge point. For every effluent sample taken an influent sample must also be taken.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS – NOT APPLICABLE

VI. LAND DISCHARGE MONITORING REQUIREMENTS

A. Septic Tank/Leachfields

Facilities with septic tank/leachfields shall conduct the following:

Septic Tank Inspections - Septic tank maintenance inspections shall be performed at least once per year. Information concerning inspections and maintenance activities (including, but not limited to, pumping, replacement, and repairs) shall be included in the annual self-monitoring reports submitted to the Central Valley Water Board (due **1 February, annually**).

Leachfield Inspections - The Discharger shall inspect leachfield areas and submit the results in the ~~monthly~~ annual self-monitoring reports (due **1 February, annually**). Monitoring shall include any observations of seeps, erosion, field saturation, ponding liquid, the presence of nuisance and other field conditions.

B. Sewage Lagoons

Facilities with sewage lagoons shall monitor pond freeboard and dissolved oxygen weekly. Groundwater monitoring for total and fecal coliform shall be conducted as specified in the NOA when depth to groundwater is less than 5 feet as measured from the bottom of the sewage lagoon.

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

A. Sampling Locations

Receiving water samples shall be collected from RSW-001 and from RSW-002, (RSW-003, etc if there is more than one discharge point). Sampling frequency as specified in Tables C-6 or C-7 is based on the annual pounds of fish produced at the CAAP facility. Site-specific receiving water monitoring shall be established in the NOA based on the following receiving water monitoring requirements

B. Receiving Water Observations

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions. Attention shall be given to the presence or absence of:

a. Floating or suspended matter
b. Discoloration
c. Bottom deposits
e. Visible films, sheens, or coatings
f. Fungi, slimes, or objectionable growths
g. Potential nuisance conditions

d. Aquatic life

Notes on receiving water conditions shall be summarized in the monitoring report.

C. Receiving Water Monitoring for Facilities with Production Greater than 100,000 lbs of Fish

Table C-6. Receiving Water Monitoring (Facilities with Production Greater than 100,000 lbs of Fish)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	1/month	[1]
Temperature	°C	Grab	1/month	[1]
Turbidity	NTU	Grab	1/month	[1]
pH	S.U.	Grab	1/month	[1]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/month	[1]
Hardness (as $CaCO_3$)	mg/L	Grab	1/month during $CuSO_4$ use [2]	[1]

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

[2] When copper sulfate is added to waters of the facility, hardness (as $CaCO_3$) shall be measured monthly during treatment.

D. Receiving Water Monitoring for Facilities with Production Less than 100,000 lbs of Fish

Table C-7. Receiving Water Monitoring (Facilities with Production Less than 100,000 lbs of Fish)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	1/quarter	[1]
Temperature	°C	Grab	1/quarter	[1]
Turbidity	NTU	Grab	1/quarter	[1]
pH	S.U.	Grab	1/quarter	[1]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/quarter	[1]
Hardness (as $CaCO_3$)	mg/L	Grab	1/quarter during $CuSO_4$ use [2]	[1]

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

[2] When copper sulfate is added to waters of the facility, hardness (as $CaCO_3$) shall be measured ~~monthly~~ quarterly during treatment.

IX. OTHER MONITORING REQUIREMENTS

A. Monthly Drug and Chemical Use Report

Each discharger shall develop a monthly report describing all aquaculture drugs or chemicals used at the Facility using Attachment F – Chemical Use Report. The

information that shall be provided includes:

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), and the flow measured in cubic feet per second (cfs) in the treatment units.

5. The total flow through the facility measured in cfs to the discharge point after mixing with the treated water.

6. 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.

7. The method of disposal for drugs or chemicals used but not discharged in the effluent.

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 = (treatment concentration) x (flow in treatment area) ÷ (flow at point of discharge)

Example: Potassium permanganate ($KMNO_4$) concentration

$$C = 2.0 \text{ mg/L } (KMNO_4) \times \frac{\text{(0.45 mgd (flow through treatment area)}}{\text{5.0 mgd (flow at point of discharge)}}$$

C = 2.0 mg/L x 0.09

C = 0.18 mg/L potassium permanganate at the point of discharge.

This information shall be submitted with the quarterly self-monitoring reports. 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 Metals Monitoring

The Central Valley 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 Central Valley Water Board is requiring, as part of ~~the~~ this MRP, that CAAP facilities monitor the upstream receiving water and effluent and analyze the samples for priority pollutant metals **once during the term of this Order. The monitoring shall occur after 1 January 2018, but no later than 1 July 2019~~one time at least 180 days but no more than two (2) years prior to expiration of this Order~~.** The monitoring data shall be submitted to the Central Valley Water Board **within 60 days of the final sampling event**. (Refer to Attachment G for the specific monitoring requirements.)

C. Feeding and Production

Each discharger shall develop an annual report describing the feeding and production for the Facility for the previous calendar year. The annual report shall be submitted on **28 February, annually**, and include the following information:

1. Monthly food usage in pounds for each calendar month.

2. Annual production of aquatic animals in pounds per year.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

2. Upon written request of the Central Valley Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

3. The Discharger shall report to the Central Valley 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. **Currently Enrolled Dischargers.** The Discharger shall continue to electronically submit Self-Monitoring Reports (SMRs) using the State Water Resources Control Board's California Integrated Water Quality System (CIWQS) Program website (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS website will provide directions for SMR submittal in the event there will be service interruption for electronic submittal.

2. **New Dischargers**. At any time during the term of this Order, the State or Central Valley 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.

3. The Discharger shall report in the SMR the results for all monitoring specified in this Monitoring and Reporting Program under sections III through IX. 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. 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.

4. Monitoring results shall be submitted to the Central Valley Water Board as specified in Table C-8.

Table C-8. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
1/month	Date of receipt of NOA	First day of calendar month through last day of calendar month	1 May (1 Jan – 31 Mar) 1 Aug (1 Apr – 30 Jun) 1 Nov (1 Jul – 30 Sep) 1 Feb of following year (1 Oct – 31 Dec)
1/quarter	Date of receipt of NOA	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 Aug 1 Nov 1 Feb of following year
1/year	Date of receipt of NOA	January 1 through December 31	1 Feb of following year

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

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

   a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

      For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (±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 Minimum Level (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.

6. **Compliance Determination**. Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above. For purposes of reporting and administrative enforcement by the Central Valley Water Board and the State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

7. **Multiple Sample Data**. When determining compliance with an AMEL or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

8. The Discharger shall submit SMRs in accordance with the following requirements:

a. 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.

b. 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.

~~b.~~c. The Discharger shall attach all laboratory analysis sheets, including quality assurance/quality control information, with all its SMRs for which sample analyses were performed.

~~c.~~d. SMRs must be submitted to the Central Valley Water Board, signed and certified as required by the Standard Provisions (Attachment B), to the address listed below:

For CAAP facilities discharging to counties covered by the Rancho Cordova Office

Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Dr., #200
Sacramento, CA 95670

For CAAP facilities discharging to counties covered by the Fresno Office

Regional Water Quality Control Board
Central Valley Region
1685 E. Street

Fresno, CA 93706

For CAAP facilities discharging to counties covered by the Redding Office

Regional Water Quality Control Board
Central Valley Region
364 Knollcrest Dr., Suite 205
Redding, CA 96002

C. Other Reports – Not Applicable

ATTACHMENT D – FACT SHEET

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ATTACHMENT D – FACT SHEET

As described in the Findings in section II of this General Order (hereafter 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 Concentrated Aquatic Animal Production (CAAP) facilities in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to CAAP facilities. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to each Discharger.

I. PERMIT INFORMATION

A. Background

A Cold Water "Concentrated Aquatic Animal Production" facility (CAAP facility) is defined in 40 C.F.R. 122.24 as a fish hatchery, fish farm, or other facility which 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. Flows from CAAP facilities are ultimately discharged to receiving waters and 40 C.F.R. 122.24 specifies that CAAP facilities are point sources subject to the requirements of the NPDES program. A CAAP facility must discharge at least 30 calendar days per year, produce at least 20,000 pounds harvest weight (9,090 kilograms) of aquatic animals per year, and feed at least 5,000 pounds (2,272 kilograms) of food during the calendar month of maximum feeding to be considered a point source. A small fish rearing operation that does not meet the production and feeding criteria may be designated as a CAAP facility by the California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) Executive Officer if it is determined that the facility is a significant contributor of pollution to waters of the United States. [40 C.F.R. 122.24(c)] CAAP facilities not meeting the above criteria or not designated as a significant contributor are not considered to be a point source and are, therefore, not required to obtain an NPDES permit.

Existing CAAP facilities in the Central Valley region's (Region's) NPDES program are operated by the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (DF&W), Mt. Lassen Trout Farms, Inc. and Calaveras Trout Farm, Inc, and J.F. Enterprises. The USFWS and DF&W raise trout and salmon species for fish population enhancement and recreational stocking purposes. The privately owned CAAP facilities in the Region raise trout for human consumption and recreational stocking purposes. J.F. Enterprises cultivates blackworms, with an annual production of about 60,000 lbs, to use as live food for tropical fish. Annual fish production at existing individual CAAP facilities in the Region ranges from approximately 3,600 pounds (lbs) to 640,000 lbs of fish per year. Average effluent flow rates at these existing CAAP

facilities range from approximately 5 million gallons per day (MGD) to more than 80 MGD. Eight CAAP facilities currently produce less than 100,000 lbs of fish per year.

On 22 September 1989, the United States Environmental Protection Agency (USEPA) granted the State of California, through the State Water Resources Control Board (State Water Board) and the Regional Water Quality Control Boards the authority to issue general NPDES permits pursuant to 40 C.F.R. Parts 122 and 123. General permits may be issued to regulate a category of point sources if the sources involve the same or substantially similar types of operations; discharge the same type of waste; require the same type of effluent limitations or operating conditions; require similar monitoring; and are more appropriately regulated under a general order rather than individual orders.

The Central Valley Water Board has determined that existing and new CAAP facilities are more appropriately regulated by a general NPDES permit. The State Water Board has determined that individual or general permits for aquaculture activities (including fish hatcheries) will be subject to the same annual fee, currently $1,000 (State Board Resolution 2002-0150).

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.

II. NOTIFICATION REQUIREMENTS

A. General Order Application, Coverage, and Termination

General Order application requirements are specified in Finding II.A of this Order. General Order coverage is described in Finding II.B of this Order. General Order termination is described in Finding II.C of this Order.

III. DISCHARGE DESCRIPTION

CAAP facilities are constructed to simulate natural cold water streams and are used to produce cold water fish species, typically trout or salmon. Fresh water is usually supplied to CAAP facilities by springs or surface water diversions. Fresh water continuously enters the headworks of the CAAP facility and passes through a series of aquatic animal production units (e.g., a series of holding tanks, ponds or raceways). Wastewater from these production units can be discharged directly to surface waters or treated in settling basins or percolation ponds prior to discharge. Fish rearing operations at a typical CAAP facility can consist of fish spawning, egg incubation, hatching structures and rearing areas. Additional structures such as an office, shop, maintenance and storage building are often located at CAAP facilities. Some CAAP facilities have onsite private residences or public restrooms that discharge domestic wastes on site. Finally, some CAAP facilities maintain above ground petroleum storage tanks for diesel and gasoline.

The operation of CAAP facilities may introduce a variety of pollutants into receiving waters. The NPDES permit program regulates 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 (3) non-conventional pollutants (e.g., ammonia-N, formalin, and phosphorus). Pollutants in all three of these categories are discharged from CAAP facilities. The most significant of these pollutants are solids from fish feces and uneaten feed 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. Raceway cleaning wastewater is diverted at some CAAP facilities to settling basins prior to discharge to surface waters.

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 also used to anesthetize fish prior to spawning or prior to the annual “tagging” process. As a result of these operations and practices, drugs and chemicals may be present in discharges from CAAP facilities covered by this Order.

Domestic sewage from the hatchery buildings and private residences is discharged from some CAAP facilities to on-site septic tank/leachfield systems or sewage lagoons.

IV. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the applicable plans, policies, and regulations identified in the Findings in section III of this Order. The applicable plans, policies, and regulations relevant to the discharge include the following:

A. Legal Authority

This Order is issued pursuant to regulations in the CWA and the California Water Code (CWC) as specified in the Finding contained at section III.C of this Order.

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 21100-21177, except for requirements for "new sources" as defined in the federal Water Pollution Control Act. For any "new source"[1] compliance with CEQA must be achieved before a NOA for coverage under this Order can be issued for the CAAP facility.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans**. The Central Valley Water Board adopted a Water Quality Control Plan, Fourth Edition (Revised October 20011), for the Sacramento and San Joaquin River Basins and a Water Quality Control Plan, Second Edition (Revised January 2004), for the Tulare Lake Basin (hereinafter Basin Plans) that designate beneficial uses, establishes water quality objectives, and contain implementation programs and policies to achieve those objectives for all waters addressed through the plans. In addition, the Basin Plans implement 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 typical beneficial uses identified in the Basin Plans include the following: municipal and domestic supply; agricultural irrigation; stock watering; process supply; service supply; hydropower supply; water contact recreation; canoeing and rafting recreation; other non-contact water recreation; warm freshwater aquatic habitat; cold freshwater habitat; warm fish migration habitat; cold fish migration habitat; warm and cold spawning habitat; wildlife habitat; navigation; rare, threatened, or endangered species habitat; groundwater recharge; and freshwater replenishment.

   The Basin Plans include a list of Water Quality Limited Segments (WQLSs), which are defined as *"…those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 C.F.R. 130, et seq.)."* The Basin Plan also states, *"Additional treatment beyond*

[1] A "new source" is a discharge type for which USEPA has issued New Source Performance Standards. A "new source" does not mean a new discharge. See also section II.A of this Order.

minimum federal standards will be imposed on dischargers to WQLSs. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment." Dischargers seeking coverage under this Order whose discharge is to a receiving water that is listed as a WQLSs shall analyze the discharge for the applicable listed constituents, the results of which shall be included in the Discharger's NOI. The Central Valley Water Board will not authorize discharges under this Order that would contribute to further impairment of the WQLS. Applicable ongoing monitoring for 303(d) listed constituents shall be specified in the NOA issued by the Executive Officer.

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About 40 criteria in the NTR applied in California. On 18 May 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 13 February 2001. These rules contain water quality criteria for priority pollutants. Requirements of this Order implement the NTR and CTR.

3. **State Implementation Policy (SIP).** On 2 March 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 28 April 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 Central Valley Water Board in the Basin Plans. The SIP became effective on 18 May 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 24 February 2005 that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

4. **Antidegradation Policy.** The discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. 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 Central Valley Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies.

   This Order requires compliance with applicable federal technology-based standards and with water quality-based effluent limits (WQBELs) where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards.

This Order allows for the use of aquaculture drugs and chemicals including oxytetracycline, penicillin G, florfenicol, amoxicillin trihydrate, erythromycin, Romet-30, MS-222, PVPiodine, hydrogen peroxide, potassium permanganate, acetic acid, copper sulfate, chlorine, chloramine-T and SLICE (Emamectin benzoate 0.2% administered via medicated feed). Based on information submitted as part of the application, in studies, and as monitoring directed in the previous individual permits, Central Valley Water Board staff evaluated each of these drugs and chemicals. The requirements in this Order for the control and monitoring of disease control drugs comply with the regulations for their use and are fully supportive of CWA goals and objectives.

The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. Compliance with the anti-backsliding requirements is discussed in this Fact Sheet (section IV.D.3).

6. **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, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state, including protecting rare, threatened, or endangered species. The discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

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

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 30 November 2006 USEPA gave final approval to California's 2006 section 303(d) List of Water Quality Limited Segments. The Basin Plans reference this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 C.F.R. 130, et seq.)*." The Basin Plans also state, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the*

segment." If a CAAP facility discharges into impaired surface waters, the Discharger must provide wastewater analysis of the 303(d) listed constituents of concern as part of the application.

2. **Total Maximum Daily Loads.** The USEPA requires the Central Valley Water Board to develop TMDLs for each 303(d) listed pollutant and water body combination.

3. The 303(d) listings and TMDLs have been considered in the development of this Order.

E. Regulations for Use 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. It is the responsibility of those using, prescribing, or recommending the use of these products to know which aquaculture drugs and chemicals may be used in CAAP facilities under all applicable federal, State, and local regulations and which aquaculture drugs and chemicals may be discharged to waters of the United States and waters of the State in accordance with this Order.

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 in the Central Valley Region are approved by the FDA for certain aquaculture uses on certain aquatic species. Others have an exemption from this approval process when used under certain specified conditions. Others are not approved for use in aquaculture, but are considered to be of "low regulatory priority" by FDA (hereafter "LRP drug"). FDA is unlikely to take regulatory action related to the use of a LRP drug if an appropriate grade of the chemical or drug is used, good management practices are followed, and

local environmental requirements are met (including NPDES permit requirements). Finally, some drugs and chemicals may be used for purposes, or in a manner not listed on their label (i.e., “extra-label” use), under the direction of licensed veterinarians for the treatment of specific fish diseases 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.

FDA-approved Aquaculture Drugs

Approved aquaculture 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 nine aquaculture drugs approved by FDA for use in food-producing aquatic species. These nine FDA-approved aquaculture drugs include the following:

1. Chorionic gonadotropin (Chlorulun®), used for spawning;
2. Oxytetracycline hydrochloride (TERRAMYCIN 343 (oxytetracycline HCl) Soluble Powder, PENNOX 343, Oxymarine™, xytetracycline HCl Soluble Powder-343, and TETROXY Aquatic), an antibiotic;
3. Sulfadimethoxine/ormetoprim (Sulfamerazine and Romet-30®), an antibiotic;
4. Tricaine methanesulfonate (Tricaine-S), an anesthetic;
5. Formalin (Formalin-F®, Formacide-B, and PARASITE-S®), used as a fungus and parasite treatment;
6. Chloramine-T (HALAMID® Aqua), an antibiotic;
7. Florfenicol (Aquaflor®), an antibiotic;
8. Hydrogen peroxide (35% PEROX-AID®), used to control fungal and bacterial infections.
9. 8.9. Oxytetracycline dehydrate (Terramycin® 200 for Fish), antibiotic and bacteriostat.

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 aquaculture 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 aquaculture 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 water-soluble, over-the-counter antibiotic product. Feed manufacturers must be 21 C.F.R. 558.4 compliant and registered with the FDA as a medicated feed mill. .

FDA Investigational New Aquaculture Drugs (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.

FDA Unapproved New Aquaculture 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 in the Central Valley Region 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. Calcium chloride, used to increase water calcium concentration to ensure egg hardening. Dosages used would be those necessary to raise calcium concentration to 10 to 20 ppm $CaCO_3$. Used up to 150 mg/L indefinitely to increase the hardness of water for holding and transporting fish in order to enable fish to maintain osmotic balance.

7. Calcium oxide, used as an external protozoacide for fingerlings to adult fish at a concentration of 2,000 mg/L for 5 seconds.
8. Fuller's earth, used to reduce the adhesiveness of fish eggs to improve hatchability.
9. Garlic (whole form), used for control of helminth and sea lice infestations in marine salmonids at all life stages.
10. Ice, used to reduce metabolic rate of fish during transport.
11. Magnesium sulfate, used to treat external monogenic trematode infestations and external crustacean infestations in freshwater fish species at all life stages. Fish are immersed in a 30,000 mg MgSO4/L and 7,000 mg NaCl/L solution for 5 to 10 minutes.
12. Onion (whole form), used to treat external crustacean parasites and to deter sea lice from infesting the external surface of salmonids at all life stages.
13. Papain, used in a 0.2% solution to remove the gelatinous matrix of fish egg masses in order to improve hatchability and decrease the incidence of disease.
14. Potassium chloride, used as an aid in osmoregulation; relieves stress and prevents shock. Dosages used would be those necessary to increase chloride ion concentration to 10 to 2,000 mg/L.
15. Sodium sulfite, used in a 1.5% solution for 5 to 8 minutes to treat eggs in order to improve their hatchability.
16. Thiamine hydrochloride, used to prevent or treat thiamine deficiency in salmonids. Eggs are immersed in an aqueous solution of up to 100 ppm for up to 4 hours during water hardening. Sac fry are immersed in an aqueous solution of up to 1,000 ppm for up to 1 hour.
17. Urea and tannic acid, used to denature the adhesive component of fish eggs at concentrations of 15g urea and 20g NaCl/5 liters of water for approximately 6 minutes, followed by a separate solution of 0.75 g tannic acid/5 liters of water for an additional 6 minutes. These amounts will treat approximately 400,000 eggs.

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.

Extra-Label Use Of An Approved New Aquaculture 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.

V. 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 Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 USC, 1311(b)(1)(C); 40 C.F.R., 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to Federal Regulations, 40 C.F.R. 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality*." Federal Regulations, 40 C.F.R. 122.44(d)(1)(vi), further provide that "[w]*here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits.*"

The CWA requires point source discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 C.F.R. 122.44(a) requires that permits include applicable technology-based limitations and standards, and 40 C.F.R. 122.44(d) requires that permits include WQBELs to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Basin Plans contain an implementation policy "*Policy for Application of Water Quality Objectives*" that specifies that the Central Valley Water Board "*will, on a*

case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives." This Policy complies with 40 C.F.R.122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including (1) EPA's published water quality criteria, (2) a proposed state criterion (*i.e*., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (*i.e*., the Central Valley Water Board's "*Policy for Application of Water Quality Objectives*")[40 C.F.R. 122.44(d)(1) (vi) (A), (B) or (C)], or (3) an indicator parameter.

The Basin Plans include numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states that *"All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.* The Basin Plans state that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, *"…water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)"* in Title 22 of CCR. The Basin Plans further state that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCLs. The narrative tastes and odors objective states: *"Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses."*

A. Discharge Prohibitions

1. **Prohibition III.A (No discharge or application of waste other than that described in this Order).** This prohibition is based on Water Code section 13260 that requires filing of a report of waste discharge (ROWD) before discharges can occur. Discharge of wastes other than waste streams and operations that have clearly been identified in the ROWD or NOI, those specified in this Order, and those specified in the NOA issued by the Executive Officer, is prohibited unless the Discharger obtains coverage under another general or individual Order that regulates the discharge of such wastes.

2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at C.F.R. Part 122.41(m)(4)).** As stated in section I.G of Attachment B, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 C.F.R. 122.41(m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 C.F.R. 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015,

which cites the federal regulations, 40 C.F.R. 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.

3. **Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance.

4. **Prohibition III.D (No hazardous or toxic substances).** The discharge of hazardous or toxic substances including cleaning chemicals, solvents, oil, grease or other petroleum products, is prohibited.

5. **Prohibition III.E (No solids to surface water).** Practices that allow accumulated sludge, grit, and solid residues to be discharged to surface waters or surface water drainage courses are prohibited.

6. **Prohibition III.F (No domestic wastewater to surface water).** The discharge of domestic sanitary wastes to surface waters or surface water drainage courses is prohibited.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 C.F.R. 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 ELGs for the Concentrated Aquatic Animal Production Point Source Category in 40 C.F.R. Part 451.

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

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

- Best conventional pollutant control technology (BCT) represents 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 C.F.R. 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where effluent limit 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 C.F.R. 125.3.

On 23 August 2004 USEPA published ELGs for the Concentrated Aquatic Animal Production Point Source Category (40 C.F.R. Part 451). The ELG became effective on 22 September 2004. The ELG regulation establishes national technology-based effluent discharge requirements for flow-through and recirculation systems and for net pens based on BPT, BCT, BAT and NSPS.

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 best management practices 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 water quality-based numeric effluent limits 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)**. USEPA's final ELGs for the aquaculture industry do not include numeric effluent limitations on any conventional, non-conventional, or toxic constituents. Rather, USEPA promulgated qualitative limitations in the form of BMP requirements. Technology-based requirements in this Order are based on the ELGs. To comply with the ELGs, this Order includes a narrative effluent limitation that requires the Dischargers to minimize the discharge of TSS through implementing BMPs established in compliance with the Special Provision contained in section VII.C. of this Order.

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. Some CAAP facilities treat their entire discharge using a full-flow settling basin, while some include additional settling basins in series. Other CAAP facilities use lower flow rates through raceways, allowing solids to accumulate and decompose by natural processes. In some cases, all of the raceway flows are transferred to one or more large settling basins for "off-line settling". Finally, some CAAP facilities place barriers in the lower portion of each raceway to create a "*quiescent zone*". This quiescent zone allows solids to settle at the end of each raceway, which are collected and removed by facility staff. Existing self-monitoring data show that the implementation of BMPs at CAAP facilities in the Region are effectively controlling TSS.

b. **Flow.** The General Order does not contain a maximum daily effluent discharge flow limitation. The maximum daily effluent flow limitation will be specified in the NOA issued by the Executive Officer for each facility seeking coverage under this Order.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

40 C.F.R. 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 C.F.R. 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 Plans designate beneficial uses, establish water quality objectives, and contain implementation programs and policies to achieve those objectives for all waters addressed through the plans. In addition, the Basin Plans 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 Basin Plans state: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning*…" and with respect to disposal of wastewaters states that "...*disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*"

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

a. Receiving Water and Beneficial Uses

The Basin Plans state that the "…*beneficial uses of any specifically identified water body generally apply to its tributary streams*." Beneficial uses for the Sacramento and San Joaquin River Basins are as follows: municipal and domestic supply; agricultural irrigation; stock watering; process supply; service supply; hydropower supply; water contact recreation; canoeing and rafting recreation; other non-contact water recreation; warm freshwater aquatic habitat; cold freshwater habitat; warm fish migration habitat; cold fish migration habitat; warm and cold spawning habitat; wildlife habitat; and navigation. Beneficial uses for the Tulare Lake Basin are municipal and domestic supply; agricultural irrigation; agricultural stock watering; industrial process water supply; process water supply; hydropower supply; water contact recreation; other non-contact water recreation; warm freshwater aquatic habitat; cold freshwater aquatic habitat; wildlife habitat; rare, threatened, or endangered species habitat; cold spawning habitat; groundwater recharge; and freshwater replenishment.

b. Priority Pollutant Metals

i. **Hardness-Dependent Copper Criteria. The** CTR contains water quality criteria for copper that vary as a function of hardness. The Basin Plan also contains hardness-dependent water quality criteria for copper for discharges to the Sacramento River and its tributaries above State Hwy 32 Bridge at Hamilton City. For these hardness-dependent criteria, the lower the hardness the lower the water quality criteria.

The equation describing the regulatory criterion, as established in the CTR, is as follows:

$$\text{CTR Criterion} = e^{m[\ln(H)]+b} \qquad \text{(Equation 1)}$$

Where:

H = Hardness
m = metal- and criterion-specific constant
b = metal- and criterion-specific constant

The constants "m" and "b" are specific to both the metal under consideration, and the type of CTR criterion (i.e., acute or chronic). The metal-specific values for these constants are provided in the CTR at paragraph (b)(2), Table 1.

The State Water Board, in footnote 19 to Water Quality Order No. 2004-0013, stated: *"We note that…the Regional Water Board…applied a variable hardness value whereby effluent limitations will vary depending on the actual, current hardness values in the receiving water. We recommend that the Regional Water Board establish either fixed or seasonal effluent limitations for metals, as provided in the SIP, rather than 'floating' effluent limitations."* In the absence of the option of including condition-dependent, "floating" effluent limitations that are reflective of actual hardness conditions at the time of discharge, effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions.

This Order includes an effluent limitation for copper which is dependent on the receiving water hardness. This Order has established the copper criteria based on the reasonable worst-case ambient hardness as required by the SIP[2], the CTR[3] and State Water Board Order No. WQO 2008-0008 (City of Davis). The SIP and the CTR require the use of "receiving water" or "actual

[2] The SIP does not address how to determine the hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water.

[3] The CTR requires that, for waters with a hardness of 400 mg/L (as $CaCO_3$), or less, the actual ambient hardness of the surface water must be used. It further requires that the hardness values used must be consistent with the design discharge conditions for design flows and mixing zones.

ambient" hardness, respectively, to determine effluent limitations for copper. (SIP, § 1.2; 40 C.F.R. § 131.38(c)(4), Table 4, note 4.) The CTR does not define whether the term "ambient," as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions. Therefore, where reliable, representative data are available, the hardness value for calculating criteria can be the downstream receiving water hardness, after mixing with the effluent (Order WQO 2008-0008, p. 11). The Regional Water Board thus has considerable discretion in determining ambient hardness (*Id.*, p.10.).

ii. **Conversion Factors.** The Basin Plan and CTR contain aquatic life criteria for copper, which are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default USEPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.

c. Assimilative Capacity/Mixing Zone

Effluent limitations are being established without benefit of dilution. The Central Valley Water Board is not obligated to delegate the assimilative capacity of receiving waters to a Discharger. Further, the copper limitations are based protection of aquatic life from acute effects. Therefore, it is appropriate calculate effluent limitations with no dilution allowance.

3. Determining the Need for WQBELs

a. The Central Valley Water Board conducted the reasonable potential analysis (RPA) in accordance with section 1.3 of the SIP in the development of the individual NPDES permits for CAAP facilities. Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that a Regional Water Board may use the SIP as guidance for water quality-based toxics control.[4] The SIP states in the introduction "*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency.*" Therefore, in this Order, the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs for the previous individual NPDES permits for CAAP facilities.

b. **Constituents with No Reasonable Potential.** WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential; however, monitoring for those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order

[4] See, Order WQO 2001-16 (Napa) and Order WQO 2004-0013 (Yuba City)

may be reopened and modified by adding an appropriate effluent limitation.

i. pH

a) Water Quality Objective. The Sacramento and San Joaquin Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the *"…pH shall not be depressed below 6.5 nor raised above 8.5.*" Within Goose Lake the *"…pH shall not be depressed below 7.5, nor raised above 9.5."* The Tulare Lake Basin Plan includes a water quality objective for surface waters that the *"pH shall not be depressed below 6.5, raised above 8.3, or changed at any time more than 0.3 units from normal ambient pH."*

b) RPA Results. Staff evaluated pH monitoring data for all 21 facilities currently covered under this Order to determine if the data supports the finding in previous Order R5-2010-0018-01 that CAAP facilities have reasonable potential to cause or contribute to an exceedance of pH water quality objectives in the receiving water. The average difference in upstream and downstream pH for each facility ranged from 0 to 0.54 standard units with an overall average difference for all 21 facilities of 0.14 standard units. Based on this information, CAAP facilities that may be covered under this Order do not have an impact on receiving water pH and therefore, do not have reasonable potential to cause or contribute to an excursion above the Basin Plan's numeric objectives for pH. WQBELs for pH have been removed. Removal of the WQBELs for pH complies with federal antibacksliding regulations. This Order continues to require influent, effluent, and receiving water monitoring for pH and includes receiving water limits for pH.

ii. Salinity

a) **Water Quality Objective.** The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for electrical conductivity, total dissolved solids, sulfate, and chloride. The USEPA National Ambient Water Quality Criteria for Chloride recommends acute and chronic criteria for the protection of aquatic life in freshwater. There are no USEPA water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, and sulfate. Additionally, there are no USEPA numeric water quality criteria for the protection of agricultural, live stock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan Amendment that will establish a salt and

nitrate Management Plan for the Central Valley. Through this effort the Basin Plan will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. All studies conducted through this Order to establish an agricultural limit to implement the narrative objective will be reviewed by and consistent with the efforts currently underway by CV-SALTS.

Table D-1. Salinity Water Quality Criteria/Objectives/Screening Levels

Parameter	Agricultural WQ Goal[1]	Secondary MCL[2]	USEPA NAWQC
EC (µmhos/cm)	Varies	900, 1600, 2200	N/A
TDS (mg/L)	Varies	500, 1000, 1500	N/A
Sulfate (mg/L)	Varies	250, 500, 600	N/A
Chloride (mg/L)	Varies	250, 500, 600	230 (4-day)/860 (1-hr)

[1] Narrative chemical constituent objective of the Basin Plan. Procedures for establishing the applicable numeric limitation to implement the narrative objective can be found in the Policy for Application of Water Quality, Chapter IV, Section 8 of the Basin Plan. However, the Basin Plan does not require improvement over naturally occurring background concentrations. In cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective, the natural background concentration will be considered to comply with the objective.

[2] The secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

(1) Chloride. The secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. The USEPA National Ambient Water Quality Criteria for Chloride recommends acute and chronic criteria for the protection of freshwater aquatic life of 230 mg/L and 860 mg/L for the chronic and acute conditions, respectively.

(2) Electrical Conductivity (EC). The secondary MCL for EC is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum.

(3) Sulfate. The secondary MCL for sulfate is 250 mg/L as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum.

(4) Total Dissolved Solids (TDS). The secondary MCL for TDS is 500mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum.

b) RPA Results

(1) Chloride. 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. Salt usage is generally restricted to one raceway at a time and water from the raceway mixes with flow from other raceways and other areas of the facility prior to discharge. Based on chloride monitoring results for numerous CAAP facilities in the Central Valley Region, the current BMPs employed at CAAP facilities have been adequate to ensure effluent chloride concentrations do not exceed the applicable objectives for chloride

(2) Electrical Conductivity. Based on EC monitoring during salt usage for numerous CAAP facilities in the Central Valley Region, the current BMPs employed at CAAP facilities have been adequate to ensure effluent EC concentrations do not exceed the applicable objectives for EC.

(3) Sulfate. Sulfate or materials containing sulfate is not used at CAAP facilities except for copper sulfate. Copper sulfate is only used at a few CAAP facilities and these facilities are required to comply with an effluent copper limitation. At the concentrations used to meet copper effluent limitations, sulfate water quality objectives are not expected to be exceeded.

(4) Total Dissolved Solids. The major source of TDS at CAAP facilities is the salt treatments described in the chloride and EC RPA results above. Monitoring for TDS was not required during salt treatments as part of the previous individual NPDES permit for each facility. Based on the chloride and EC RPA results, the narrative chemical constituent objective of 450 mg/L for TDS is not expected to be exceeded.

Therefore, the discharge of salinity from CAAP facilities does not have reasonable potential to cause or contribute to an in-stream excursion of the applicable water quality objectives for chloride, EC, sulfate, and TDS.

c) **WQBELs.** Based on the low reported salinity in discharges from CAAP facilities, the Central Valley Water Board finds that these discharges do not have reasonable potential to cause or contribute to an in-stream excursion of the conservative screening value for water quality objectives for salinity. No effluent limitations are being established in this Order for sodium chloride, EC, sulfate or TDS; however CAAP facilities are required to develop BMPs to minimize the use and discharge of salt. This Order also requires effluent monitoring for EC during use of sodium chloride as specified in the Monitoring and Reporting Program. Receiving water monitoring is required for facilities discharging to specific water bodies listed in the Basin Plan with numeric EC or TDS objectives. Additional site-specific monitoring may be required in the NOA issued by the Executive Officer for individual facilities. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality objective, this Order may be reopened and modified by adding an appropriate effluent limitation.

c. **Constituents with Reasonable Potential.** The Central Valley Water Board finds that discharges from CAAP facilities have a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for copper (total recoverable), formaldehyde, and chlorine. WQBELs for these constituents are included in this Order. A detailed discussion of the RPA for each constituent is provided in subsection d. below.

d. **Aquaculture Drugs and Chemicals**. Promulgated numeric water quality criteria or Basin Plan numeric objectives are currently not available for most of the aquaculture drugs and chemicals used by CAAP facilities. Therefore, the Central Valley Water Board used the narrative water quality objective for toxicity from the Basin Plan and applied the Policy for "Application of Water Quality Objectives" as a basis for determining "reasonable potential" for discharges of these drugs and chemicals. The toxicity objective states, in part: "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life."

The Basin Plans state that compliance with the toxicity objective will be determined by several factors, including biotoxicity tests of appropriate duration, or other analytical methods as specified by the Central Valley Water Board. (Biotoxicity testing involves measuring the toxic effects of an effluent on specified organisms according to nationally approved protocols.) USEPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD) specifies two toxicity measurement techniques that can be employed in effluent characterization; the first is whole effluent toxicity (WET) testing, and the second is chemical-specific toxicity analyses. WET testing is used most appropriately when the toxic constituents in an effluent are not completely known; whereas chemical-specific analyses are more appropriately used when an effluent contains only one, or very few, well-known constituents. Due to the nature of operations and chemical treatments at most CAAP facilities in the Central Valley Region, CAAP facility effluents generally contain only one or two known chemicals at any given a time. Therefore, the Central Valley Water Board is using a chemical-specific approach to determine "reasonable potential" for discharges of aquaculture drugs and chemicals from CAAP facilities.

The California Department of Fish and Wildlife Pesticide Investigation Unit (DF&W Pesticide Unit) has completed biotoxicity studies to determine the aquatic toxicity of certain aquaculture drugs and chemicals commonly used at their CAAP facilities in the Central Valley Region; specifically, formalin, hydrogen peroxide, potassium permanganate, MS-222, Chloramine-T, and PVP iodine. The DF&W Pesticide Unit conducted chronic toxicity tests for some drugs and chemicals using *Pimephales promelas, Ceriodaphnia dubia,* and, in some cases, *Selenastrum capricornutum* in accordance with the analytical methods specified in the USEPA *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA 600/4-91-002). These "short-term chronic tests" measure effects such as reduced growth of the

organism, reduced reproduction rates, or lethality. Results were reported as a No Observed Effect Concentration (NOEC) and a Lowest Observed Effect Concentration (LOEC). The LC_{50} concentration (lethal concentration to 50% of the exposed organisms over the test period) is sometimes reported when lethality is measured. Since many chemical treatments are utilized as a "flush" or "batch" treatment, the DF&W Pesticide Unit also conducted acute toxicity tests using *Ceriodaphnia dubia* (*C. dubia*) 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). Acute toxicity test results typically are reported as the No Observed Adverse Effect Level (NOAEL), the Lowest Observed Adverse Effect Level (LOAEL), and LC_{50}.

i. 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 Central Valley Water Board considered the results of acute and chronic aquatic life toxicity testing conducted by the DF&W Pesticide Unit when determining whether water quality-based effluent limits 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 Central Valley 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, monthly use of oxytetracycline must be reported as specified in the attached Monitoring and Reporting Program.

ii. 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 Central Valley Water Board considered the results of acute and chronic aquatic life toxicity testing conducted by the DF&W Pesticide Unit when determining whether water quality-based effluent limits 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 Central Valley 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, monthly use of Penicillin G must be reported as specified in the attached Monitoring and Reporting Program.

iii. **Amoxycillin, erythromycin, florfenicol, and Romet-30®**. Amoxycillin, erythromycin, florfenicol, and Romet-30® may be used by CAAP facilities. Amoxycillin 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. Amoxycillin (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 water quality-based effluent limitations for these substances; however, this Order does require monthly monitoring and reporting of these substances as specified in the attached Monitoring and Reporting Program.

iv. **Vibrio Vaccine and Enteric Redmouth Bacterin***.* To treat enteric redmouth disease, CAAP facilities may need to administer enteric redmouth bacterin. Enteric redmouth (or yersiniosis) bacertin is formulated from inactivated Yersinia ruckeri bacteria and may be used as an immersion or injectable vaccine to help protect salmonid species from enteric redmouth disease caused by Yersinia ruckeri. This bacertin stimulates the fish's immune system to produce protective antibodies.

Vibrio vaccine may be used as an immersion or an injectable vaccine 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 USDA's Center for Veterinary Biologics. Veterinarians should be consulted before beginning an immunization program. 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, vibrio vaccine or enteric redmouth bacertin, when used according to label and veterinarian instructions, are not 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 water quality-based effluent limitations for these substances; however, use of these substances must be reported as specified in the attached Monitoring and Reporting Program. In the future, as additional information becomes available regarding the use or toxicity of these biologics, the Central Valley Water Board will re-evaluate whether the discharge of any of these substances to receiving waters may cause, have the reasonable potential to cause, or contribute to an excursion of the Basin Plan objectives for toxicity and, if necessary, re-open this Order to include numeric effluent limitations.

v. 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 LOEC to be 70 and 200 mg/L respectively. MS-222 is used as a 50 or 150 gallon static treatment bath having 350 mg/L MS-222. 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 water quality-based effluent limitations for MS-222. However, use and monitoring of MS-222 must be reported as specified in the attached Monitoring and Reporting Program.

vi. PVP Iodine*.* PVP Iodine (Argentyne), a solution composed of 10% PVP Iodine Complex and 90% inert ingredients. PVP Iodine typically is applied in short-term treatments of 1 hour or less to disinfect eggs spawned at CAAP facilities. 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 DF&W Pesticide Unit were considered when determining whether water quality-based effluent limitations 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. PVP Iodine used to disinfect eggs. Based on available information PVP Iodine 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 water quality-based effluent limitations for PVP Iodine. However, use and monitoring of PVP Iodine must be reported as specified in the attached Monitoring and Reporting Program.

vii. Formaldehyde (Formalin). Formalin, a solution typically 37 percent by weight formaldehyde, (also known by the trade names Formalin-F®, Paracide-F®, PARASITE-S®) is FDA-approved for use in CAAP facilities for controlling external protozoa and monogenetic trematodes on fish, and for controlling fungi of the family *Saprolegniacae* 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.

The State of California Department of Public Health (DPH) does not have an MCL for formaldehyde, however the DPH 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 DF&W 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:

Species	7-day LC50 (mg/L)	LOEC (mg/L)	NOEC (mg/L)	LOAEL (mg/L)	NOAEL (mg/L)
Ceriodaphnia dubia	2.43	5.8[1] 1.3[2]	1.3[1] <1.3[2]	5.8	1.3
Pimephales promelas	23.3	9.09	2.28	--	--
Selanastrum capricornutum	<5.2	--	--	--	--

[1] Survival
[2] Reproduction
Notes: DF&W 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)
Ceriodaphnia dubia – 2-hour exposure	73.65	46.3	20.7
Ceriodaphnia dubia – 8-hour exposure	13.99	15.3	6.7

Notes: DF&W 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 DF&W Pesticide Unit, effluent limitations from the previous individual CAAP Orders, and the Basin Plan narrative toxicity objective were considered when determining whether water quality-based effluent limitations 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 Central Valley 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* conduct using only an 8-hour exposure, resulted in a 96-hour NOAEL concentration of 6.7 mg/L formaldehyde.

The Central Valley Water Board has determined that if formalin is used at CAAP facilities, 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 at CAAP facilities are short in duration exposure to formaldehyde in the receiving water as a result of discharges from CAAP facilities may be long-term because of retention time in the settling basin and potential application procedures (e.g., successive raceway treatments, drip treatments for eggs). Therefore, an average monthly formaldehyde effluent limitation of 0.65 mg/L and a maximum daily formaldehyde effluent limitation of 1.3 mg/L are calculated based on the 96-hour NOAEL value and using the procedure in USEPA's TSD for calculating water quality-based effluent limitations. These limitations are carried over from the previous individual CAAP permits. These effluent limitations will ensure protection of aquatic life against effects from exposure to formaldehyde in CAAP facility discharges. Use and monitoring of formaldehyde must be reported as specified in the attached Monitoring and Reporting Program.

The Central Valley Water Board used USEPA's TSD guidance to calculate the MDEL and AMEL for formaldehyde as follows:

WQBEL Calculations for Formaldehyde

	Acute	Chronic
Criteria (mg/L) [1]	1.3	1.3
Dilution Credit	No Dilution	No Dilution
ECA	1.3	1.3
ECA Multiplier [3]	0.321	0.527
LTA	0.417	0.685
AMEL Multiplier (95th%)	1.55	[2]
AMEL (mg/L)	**0.65**	[2]
MDEL Multiplier (99th%)	3.11	[2]
MDEL (mg/L)	**1.3**	[2]

(1) Chronic criterion based on a 7-day NOEC value of 1.3 mg/L and acute criterion based on a 96-hour NOAEL value of 1.3 mg/L
(2) Limitations based on acute LTA (Acute LTA < Chronic LTA)
(3) CV = 0.6

viii. ***Hydrogen Peroxide***. Hydrogen peroxide (35% H_20_2) has been used for the control of bacteria at CAAP facilities. 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 and columnaris 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 Central Valley Water Board considered the results of acute aquatic life toxicity testing conducted by the DF&W Pesticide Unit when determining whether water quality-based effluent limits 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. Based on the chemical nature of hydrogen peroxide (i.e., high reactivity resulting in rapid degradation) and on available information regarding hydrogen peroxide when used according to the reported treatments, hydrogen peroxide 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 water quality-based effluent limitations for hydrogen peroxide. However, use and monitoring of hydrogen peroxide must be reported as specified in the attached Monitoring and Reporting Program.

ix. ***Potassium Permanganate***. Potassium permanganate (also known by the trade name of Cairox™) may be used to control gill disease, external parasites, bacteria, and fungal growth on fish. 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. Potassium permanganate is a special category drug the FDA calls "regulatory action deferred". Potassium permanganate is typically applied in a single, short-term treatment, or as a series of closely-spaced, short-term treatments. Results of a single acute toxicity test conducted by the DF&W Pesticide Unit using *C. dubia* showed a 96-hour NOAEL of 0.038 mg/L for potassium permanganate under continuous exposure. The DF&W's 2-hour exposure test showed a 0.1975 mg/L NOEC. Since potassium permanganate is rapidly converted to insoluble manganese dioxide under hatchery conditions, this Order does not include water quality-based effluent limitations for potassium permanganate. However, use and monitoring of potassium permanganate must be reported as specified in the attached Monitoring and Reporting Program.

x. ***Sodium Chloride***. Sodium chloride (salt) is used at CAAP facilities to control external parasites on fish and as an osmoregulatory aid to relieve stress on the confined fish populations. FDA considers sodium chloride an unapproved new animal drug of low regulatory priority (LRP drug) for use in aquaculture. Consequently, FDA is unlikely to take regulatory action if an appropriate grade of salt is used, good management practices are followed, and local environmental requirements are met. The Salinity section in this Fact Sheet (IV.C.3.b.i.) includes information on salt usage and reasonable potential.

xi. ***Chloramine-T.*** Chloramine-T is available for use in accordance with FDA as a possible replacement for copper sulfate and formalin. The therapeutic treatment consists of a 10 to 20 mg/L dose for a 1-hour exposure once per day for a 1 to 3 day period. Chloramine-T breaks down into para-toluenesulfonamide (p TSA) and unlike other chlorine-based disinfectants does not form harmful chlorinated compounds. Results of the DF&W 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. Based on available information regarding Chloramine-T when used according to the reported treatment, Chloramine-T 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 water quality-based effluent limitations for Chloramine-T. However, use and monitoring of Chloramine-T must be reported as specified in the attached Monitoring and Reporting Program.

xii. ***Acetic Acid.*** Acetic acid is used in conjunction with copper flushes to help put the copper sulfate into solution. Acetic acid may also potentially be used by the CAAP facilities as a "flush" treatment in raceways for the control of external parasites on fish. Monthly use of acetic acid must be reported as specified in the attached Monitoring and Reporting Program.

xiii. ***Chlorine.*** High-test Hypochlorite (HTH) is used at CAAP facilities as a disinfectant to control algae growth, to kill bacteria in raceways, tanks, and filter beds, as well as to sanitize facility equipment. There are no numeric water quality objectives for chorine in the NTR, CTR, or Basin Plans. Based on this information, the Central Valley Water Board determined that chlorine is currently, or may potentially be discharged from CAAP facilities in the Basin at levels that cause, have the reasonable potential to cause, or contribute to an in-stream excursion above the narrative water quality objective for toxicity in the Basin Plans. Applying the Basin Plan "Policy for Application of Water Quality Objectives", the numeric standard that implements the narrative objective is USEPA's recommended acute 1-hour average (0.019 mg/L) and chronic 4-day average (0.011 mg/L) criteria for chlorine. Accordingly, this Order establishes a water quality-based effluent limitation for total residual chlorine. Because HTH is typically applied in a single, short-term "flush" treatment, the Central Valley Water Board has determined that an average monthly effluent limitation is not necessary, and a maximum daily effluent limitation of 18 μg/L could be used for controlling total residual chlorine discharges from CAAP facilities. This limitation is carried over from a previous individual CAAP permit. Removal of this numeric limitation would constitute backsliding under CWA section 402(o). The Central Valley Water Board has determined that this numeric limitation continues to be applicable to CAAP facilities and that backsliding is not appropriate. This effluent limitation will ensure protection of aquatic life against effects from exposure to chlorine in CAAP facility discharges. Use and monitoring of chlorine must be reported as specified in the attached Monitoring and Reporting.

The Central Valley Water Board used the procedures in USEPA's TSD guidance to calculate this effluent limitation as follows:

WQBEL Calculations for Chlorine

	Acute	Chronic
Criteria (mg/L) [(1)]	0.019	0.011
Dilution Credit	No Dilution	No Dilution
ECA	0.019	0.011
ECA Multiplier [(3)]	0.321	0.527
LTA	0.0061	0.0058
AMEL Multiplier (95th%)	[(2)]	--
AMEL (mg/L)	[(2)]	**--**
MDEL Multiplier (99th%)	[(2)]	3.11
MDEL (mg/L)	[(2)]	**0.018**

(1) USEPA NAWQC for Chlorine
(2) Limitations based on chronic LTA (chronic LTA < acute LTA)
(3) CV = 0.6

xiv. ***Copper Sulfate***. Copper, primarily in the forms of copper sulfate and chelated copper compounds, may be applied under a LRP use but regulatory action has been deferred pending further study. Copper is used for the control of external parasites and bacteria on fish, and can also be used as an algaecide used to control algae. Most of the CAAP facilities in the Central Valley Region have discontinued the use of copper sulfate since monitoring data and dilution calculations have shown that copper may be discharged at levels that exceed applicable water quality criteria from the Basin Plan and CTR.

The Sacramento and San Joaquin River Basin Plan contains specific objectives for total recoverable copper to the Sacramento River from the State Highway 32 Bridge at Hamilton City to the I Street Bridge at the City of Sacramento, American River from Folsom Dam to the Sacramento River, Folsom Lake, and the Sacramento – San Joaquin Delta. Total recoverable copper shall not exceed 10 µg/L.

The Sacramento and San Joaquin River Basin Plan contains specific acute objectives for dissolved copper in the Sacramento River and its tributaries above State Highway 32 bridge at Hamilton City. The maximum dissolved concentration of copper in the Sacramento River and its tributaries above State Highway 32 bridge at Hamilton City is:

$$Cu = e^{(0.905)(\ln \text{hardness}) - 1.612} \ \mu g/L$$

The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. The criteria for copper are presented in dissolved concentrations.

USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The USEPA default conversion factors for copper in freshwater are 0.96 for both the acute and the chronic criteria.

If copper is used at a CAAP facility, the copper concentration in the effluent has a reasonable potential to exceed the water quality objective. Since copper is added for short-term treatment (generally a 2-hour flush) and CAAP facilities are flow through, copper is expected to be present in the discharge for approximately the same duration as treatment, typically 8 hours or less. The Central Valley Water Board determined that an AMEL is not appropriate based on the current treatment practice for use of copper sulfate. Therefore, this Order establishes a MDEL for total recoverable copper for specific water bodies based on the Sacramento and San Joaquin Basin Plan, and CTR for all other receiving waters, as follows:

Table D-2. Effluent Limitations Copper – For discharges to the Sacramento River from the State Highway 32 Bridge at Hamilton City to the I Street Bridge at the City of Sacramento; the American River from Folsom Dam to the Sacramento River; and Folsom Lake

Receiving Water Hardness, H (mg/L as $CaCO_3$)	Maximum Daily Effluent Limitation (µg/L, Total Recoverable)
H < 10	0.8
10 ≤ H < 20	2.3
20 ≤ H < 30	3.8
30 ≤ H < 40	5.2
40 ≤ H < 50	6.6
50 ≤ H < 60	8.0
60 ≤ H < 70	9.3
H ≥ 70	10.4

Table D-3. Effluent Limitations Copper – For discharges to the Sacramento River and its Tributaries above the State Highway 32 Bridge at Hamilton City (Basin Plan)

Receiving Water Hardness, H (mg/L as $CaCO_3$)	Maximum Daily Effluent Limitation (µg/L, Total Recoverable)
H < 10	1.6
10 ≤ H < 20	2.3
20 ≤ H < 30	3.7
30 ≤ H < 40	5.0
40 ≤ H < 50	6.3
50 ≤ H < 60	7.5
60 ≤ H < 70	8.7
70 ≤ H < 80	9.9
80 ≤ H < 90	11
90 ≤ H < 100	12
100 ≤ H < 200	19
H ≥ 200	24

Table D-4. Effluent Limitations Copper – For discharges to all other waterbodies

Receiving Water Hardness, H (mg/L as $CaCO_3$)	Maximum Daily Effluent Limitation (µg/L, Total Recoverable)
H < 10	1.6
10 ≤ H < 20	2.3
20 ≤ H < 30	3.8
30 ≤ H < 40	5.2
40 ≤ H < 50	6.6
50 ≤ H < 60	8.0
60 ≤ H < 70	9.3
70 ≤ H < 80	11
80 ≤ H < 90	12
90 ≤ H < 100	13
100 ≤ H < 200	20
H ≥ 200	27

xv. ***SLICE***. The drug SLICE (Emamectin benzoate 0.2% Aquaculture premix) may be used by CAAP facilities to treat Salmincola californiensis (copepods) in finfish. SLICE must be used under an INAD exemption. SLICE is used in a manner that reduces the likelihood of direct discharge to waters of the United States or waters of the State, particularly when CAAP facilities implement BMPs as required by this Order. Medicated feed is prepared by coating SLICE Premix onto the surface of non-medicated fish feed pellets. Feeding occurs to ensure the food is consumed and then metabolized by the fish. Accordingly, this Order does not include water quality-based effluent limitations for SLICE; however, this Order requires monthly monitoring and reporting of this substance as specified in the attached Monitoring and Reporting Program.

4. WQBEL Calculations

a. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below

b. Effluent Concentration Allowance. For each water quality criterion/objective, the ECA is calculated using the following steady-state mass balance equation from Section 1.4 of the SIP:

$ECA = C + D(C - B)$ *where C>B, and*
$ECA = C$ *where C≤B*

where:
ECA = effluent concentration allowance
D = dilution credit
C = the priority pollutant criterion/objective
B = the ambient background concentration.

According to the SIP, the ambient background concentration (B) in the equation above shall be the observed maximum with the exception that an ECA calculated from a priority pollutant criterion/objective that is intended to protect human health from carcinogenic effects shall use the arithmetic mean concentration of the ambient background samples. For ECAs based on MCLs, which implement the Basin Plan's chemical constituents objective and are applied as annual averages, an arithmetic mean is also used for B due to the long-term basis of the criteria.

c. **Basin Plan Objectives and MCLs.** For WQBELs based on site-specific numeric Basin Plan objectives or MCLs, the effluent limitations are applied directly as the ECA as either an MDEL, AMEL, or average annual effluent limitations, depending on the averaging period of the objective.

d. **Aquatic Toxicity Criteria.** WQBELs based on acute and chronic aquatic toxicity criteria are calculated in accordance with Section 1.4 of the SIP. The ECAs are converted to equivalent long-term averages (i.e. LTA acute and LTA chronic) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers.

e. **Human Health Criteria.** WQBELs based on human health criteria, are also calculated in accordance with Section 1.4 of the SIP. The ECAs are set equal to the AMEL and a statistical multiplier was used to calculate the MDEL.

$$AMEL = mult_{AMEL}\left[\min\left(\overbrace{M_A ECA_{acute}}^{LTA_{acute}}, M_C ECA_{chronic}\right)\right]$$

$$MDEL = mult_{MDEL}\left[\min\left(M_A ECA_{acute}, \underbrace{M_C ECA_{chronic}}_{LTA_{chronic}}\right)\right]$$

$$MDEL_{HH} = \left(\frac{mult_{MDEL}}{mult_{AMEL}}\right) AMEL_{HH}$$

where:
multAMEL = statistical multiplier converting minimum LTA to AMEL
multMDEL = statistical multiplier converting minimum LTA to MDEL
M_A = statistical multiplier converting acute ECA to LTA_{acute}
M_C = statistical multiplier converting chronic ECA to $LTA_{chronic}$

f. Intake Water Credit. Central Valley Water Board staff anticipates that due in part to the flow-through configuration of CAAP facilities, there may be instances where certain CAAP facilities may not be eligible for coverage because monitoring data indicate that their effluent demonstrates reasonable potential to cause or contribute to an exceedance of applicable water quality objectives. Based on a review of available data, it appears that in most cases the water intake from the receiving water is the major source of the pollutants. Further, many of the CAAP facilities discharge to receiving waters characterized by low hardness (e.g., 20 mg/L as $CaCO_3$), which results in stringent water quality objectives for some metals. In these instances when the source water for CAAP facility is responsible for the reasonable potential to exceed applicable water quality standards, an intake water credit can be granted in accordance with section 1.4.4 of the Policy for Implementation of the Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries in California (SIP).

A CAAP facility may submit a written request for an intake water credit. The written request must be prepared in accordance with the NOI requirements specified in Attachment E, section J. The Executive Officer of the Central Valley Water Board will decide whether to authorize the intake water credit, based on the monitoring data included with the NOI and other information submitted by the facility, and the requirements specified in the SIP, section 1.4.4.

The SIP, section 1.4.4 specifies that a California Water Board may consider an intake water credit on a pollutant-by-pollutant and discharge-by-discharge basis when establishing water-quality based effluent limitations, provided that the discharger satisfactorily demonstrates that the following conditions are met:

i. The observed maximum ambient background concentrations, as determined in section 1.4.3.1 of the SIP, and the intake water concentration of the pollutant exceed the most stringent applicable criterion/objective for the pollutant;

ii. The intake water credits are consistent with any TMDL applicable to the discharge that has been approved by the Central Valley Water Board, the State Water Resources Control Board, and USEPA;

iii. The intake water is from the same water body as the receiving water body. The discharger may demonstrate this condition by showing:

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 the that of the intake water;

b) there is 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.

The Central Valley Water Board may also consider other factors when determining whether the intake water is from the same water body as the receiving water body;

iv. The facility does not alter the intake water pollutant chemically or physically in a manner that adversely affects water quality and beneficial uses; and

v. 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.

5. Whole Effluent Toxicity (WET)

The Basin Plans specify 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 Central Valley 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 many of the aquaculture drugs and chemicals used by aquaculture facilities. Therefore, the Central Valley Water Board uses the narrative water quality objective for toxicity from the Basin Plans as a basis for determining "reasonable potential" for discharges of these drugs and chemicals. USEPA's TSD specifies two toxicity measurement techniques that can be employed in effluent characterization; the first is WET testing, and the second is chemical-specific toxicity analyses. WET requirements protect the receiving water quality from the aggregate toxic effect of a

mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative "*no toxics in toxic amounts*" criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a short time period and generally measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction, and growth. For fish hatcheries WET testing is used most appropriately when the toxic constituents in an effluent are not completely known; whereas chemical-specific analysis is more appropriately used when an effluent contains only one, or very few, well-known constituents.

Due to the nature of CAAP facility operations, the effluent is very consistent and additions consist of feed and occasionally drugs and chemicals under controlled use. Therefore, the Central Valley 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 C.F.R. 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 C.F.R. 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.

However, when a CAAP Facility is granted an intake water credit for a pollutant the effluent limits for that pollutant are based on a no net addition of the pollutant. Therefore, the effluent limits are based on mass (i.e., the pollutant mass in the effluent may not exceed the pollutant mass in the intake water.

2. Averaging Periods for Effluent Limitations

40 C.F.R. 122.45 (d) requires maximum daily and average monthly discharge limitations for all dischargers other than publicly owned treatment works unless impracticable. Except for Chlorine and Copper which is not used continuously and a monthly average is impracticable (see section V.C.3.d), this Order conforms to this requirement.

3. Satisfaction of Anti-Backsliding Requirements.

The CWA specifies that a revised permit may not include effluent limitations that are less stringent than the previous permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA sections 402(o) or 303(d)(4), or, where applicable, 40 C.F.R. 122.44(l).

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous general NPDES permit for CAAP facilities, except for the water quality-based effluent limitations (WQBELs) for pH, and the technology-based effluent limitations (TBELs) for total suspended solids and settleable solids. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

a. **CWA section 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) prohibits the establishment of less stringent water quality-based effluent limits "except in compliance with Section 303(d)(4)." CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy.

   This Order removes the WQBELs for pH. The water bodies within the Central Valley Region are considered attainment waters for pH because there are no listings as impaired on the 303(d) list for pH.[5] As discussed in section IV.D.4, below, removal of the effluent limits complies with federal and state antidegradation requirements. Thus, removal of the effluent limitations for pH from Order R5-2010-0018-01 meets the exception in CWA section 303(d)(4)(B).

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

   i. **pH.** Updated information that was not available at the time Order R5-2010-0018-01 was issued indicates that pH does not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. Influent, effluent, and receiving water pH monitoring data were evaluated for all 21 facilities currently covered under this Order to determine if the data supports the finding in previous Order R5-2010-0018-01 that CAAP facilities have reasonable potential to cause or contribute to an exceedance of pH water quality objectives in the receiving water. The CAAP facilities have little or no effect on the pH of the receiving water. The average difference in upstream and downstream pH for the facilities was 0.14 standard units. Based on this information, CAAP facilities that may be covered under this Order do not have a reasonable potential to cause or contribute to an excursion above the Basin Plan's numeric objectives for

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

pH. Therefore, the WQBELs were removed. This new information satisfies the antibacksliding exception under CWA section 402(o)(2)(B)(i).

ii. **TSS and Settleable Solids.** In August 2004, USEPA promulgated Effluent Limitation Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category (hereafter "ELG"). The ELG regulation establishes national technology-based effluent discharge requirements for flow-through and recirculating systems and for net pens based on Best Practicable Control Technology Currently Available (BPT); Best Control Technology for Conventional Pollutants (BCT); Best Available Technology Economically Achievable (BAT); and New Source Performance Standards (NSPS). The ELG includes qualitative requirements for TSS limitations in the form of best management practices (BMPs) to control solids. Previous Order R5-2010-0018-01, however, contained numeric technology-based effluent limits for TSS and settleable solids using best professional judgment (BPJ) that were carried over from previous individual permits for CAAP facilities. Although USEPA promulgated qualitative ELGs for solids, Previous Order R5-2010-0018-01 did not allow backsliding, because the limitations were determined to be needed as a means of controlling the discharge of solids from algae, silt, fish feces and uneaten feed.

Influent and effluent TSS and settleable solids data from 2010 – 2014 were evaluated for CAAP facilities currently covered under the General Order. The average net TSS (influent – effluent) was less than 2 mg/L and nearly all settleable solids data were non-detect. This data demonstrates that BMPs implemented by the facilities are effectively controlling solids and numeric TBELs are not needed. This Order removes the numeric TBELs for TSS and settleable solids and establishes narrative TBELs that require implementation of BMPs, per the ELGs. The data described above, is new information that satisfies the antibacksliding exception under CWA section 402(o)(2)(B)(i). Furthermore, the new narrative TBELs that require implementation of BMPs is consistent with the ELG, therefore, there will be no violation of any applicable ELGs per CWA section 402(o)(3).

4. Satisfaction of Antidegradation Policy

The Order requires compliance with applicable federal technology-based standards and with WQBELs where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. Some CAPP facilities may be granted an intake water credit to account for pollutants in the intake water. Implementation of an intake water credit in accordance with the SIP allows a CAAP facility to discharge a mass and concentration of the intake water pollutants that is no greater than the mass and concentration found in the facility's intake water. If a CAAP facility adds mass of a pollutant to its waste stream, an equal or

greater mass must be removed prior to discharge, resulting in no net addition of the pollutant in the discharge compared to the intake water.

This Order removes the WQBELs for pH and replaces numeric TBELs for TSS and settleable solids with narrative TBELs. The relaxation in effluent limits complies with federal antibacksliding regulation as discussed in subsection 3, above. Furthermore, the change in effluent limits will not result in an increase in the mass of pollutants discharge, thus, the permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. 131.12 and State Water Board Resolution No. 68-16. Compliance with the requirements of this Order will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

5. Stringency of Requirements for Individual Pollutants.

This Order contains both TBELs and WQBELs for individual pollutants. The TBELs consist of the requirements contained in 40 C.F.R. Part 451 and restrictions on total suspended solids and settleable 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. The WQBELs consist of restrictions on formaldehyde, copper, and chlorine. 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 C.F.R. 131.38. The scientific procedures for calculating the individual WQBELs are based on the CTR-SIP, which was approved by USEPA on 1 May 2001. All beneficial uses and water quality objectives contained in the Basin Plans were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 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 C.F.R. 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications

Percolation pond freeboard for fish hatchery wastes shall not be less than 1 foot (measured vertically to the lowest point of overflow), except if lesser freeboard does not threaten the integrity of the pond, no overflow of the pond occurs, and lesser freeboard is due to direct precipitation or storm water runoff occurring as a result of annual precipitation with greater than a 100-year recurrence interval, or a storm event with an intensity greater than a 25-year, 24-hour storm event. A 1-foot freeboard standard was

selected because CAAP facilities control the influent to percolation ponds with the exception of direct precipitation, and wave action does not appear to be a problem.

G. Reclamation Specifications – Not Applicable

VI. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the MCLs in Title 22, CCR. The tastes and odors objective states that surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plans require the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plans. The Basin Plans state that "*[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Board will apply to regional waters in order to protect the beneficial uses*." The Basin Plans include numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the two Basin Plans' numerical and narrative water quality objectives for biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, turbidity, and electrical conductivity.

   Numeric Basin Plan objectives for ammonia, dissolved oxygen, electrical conductivity, temperature, and total dissolved solids are applicable to some CAAP facility discharges to specific water bodies and have been incorporated as Receiving Surface Water Limitations. The rationale for the receiving surface water limitations are as follows:

   a. **Ammonia.** The Tulare Lake Basin Plan includes a water quality objective that *"[W]aters shall not contain un-ionized ammonia in amounts which adversely affect beneficial uses. In no case shall the discharge of wastes cause*

concentrations of un-ionized ammonia (NH_3) to exceed 0.025 mg/l (as N) in receiving waters." Numeric receiving water limitations for ammonia are included in this Order and are based on the Basin Plan objective.

b. **Bacteria.** The Basin Plans include a water quality objective that "*[I]n waters designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml*." Numeric receiving water limitations for bacteria are included in this Order and are based on Basin Plan objectives.

c. **Biostimulatory Substances**. The Basin Plans include a water quality objective that "*[W]ater shall not contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses."* Receiving water limitations for biostimulatory substances are included in this Order and are based on Basin Plan objectives.

d. **Chemical Constituents**. The Basin Plans include a water quality objective that *"[W]aters shall not contain chemical constituents in concentrations that adversely affect beneficial uses."* Receiving water limitations for chemical constituents are included in this Order and are based on Basin Plan objectives.

e. **Color**. The Basin Plans includes a water quality objective that "*[W]ater shall be free of discoloration that causes nuisance or adversely affects beneficial uses."* Receiving water limitations for color are included in this Order and are based on Basin Plan objectives.

f. **Dissolved Oxygen.** The Basin Plans include water quality objectives for dissolved oxygen for surface water bodies outside of the Delta, "…*the monthly median of the mean daily dissolved oxygen (DO) concentration shall not fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration shall not fall below 75 percent of saturation. In addition, the dissolved oxygen concentration shall not be reduced below 7.0 mg/L for water bodies designated COLD or SPWN and 5.0 mg/L for water bodies designated WARM at any time.*" The Sacramento and San Joaquin River Basin Plan includes more stringent seasonal objectives for dissolved oxygen for the Sacramento River from Keswick Dam to Hamilton City *(9.0 mg/L from 1 June to 31 August);* for the Feather River from Fish Barrier Dam at Oroville to Honcut Creek *(8.0 mg/L from 1 September to 31 May);* for the Merced River from Cressy to New Exchequer Dam *(8.0 mg/L all year);* and for the Tuolumne River from Waterford to La Grange *(8.0 mg/L from 15 October to 15 June).* The Tulare Lake Basin Plan includes more stringent objectives for dissolved oxygen in the Kings River above Kirch Flat to Friant-Kern (9.0 mg/L); in the Kern River above Lake Isabella to Southern California Edison Powerhouse KR-1 (8.0 mg/L); and in Lake Kaweah (Kaweah River), Lake Success (Tule River) and Kings River from Friant-Kern to Island Weir (7.0 mg/L). These objectives were included as receiving water limitations in this Order.

g. **Floating Material**. The Basin Plans include a water quality objective that *"[W]ater shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses."* Receiving water limitations for floating material are included in this Order and are based on Basin Plan objectives.

h. **Oil and Grease**. The Basin Plans include a water quality objective that *"[W]aters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses."* Receiving water limitations for oil and grease are included in this Order and are based on Basin Plan objectives.

i. **pH.** The Sacramento and San Joaquin Basin Plan includes a water quality objective that *"[T]he pH shall not be depressed below 6.5 nor raised above 8.5."* For Goose Lake*, "pH shall be less than 9.5 and greater than 7.5 at all times"*. The Tulare Lake Basin Plan includes a water quality objective that *"[T]he pH of water shall not be depressed below 6.5, raised above 8.3, or changed at any time more than 0.3 units from normal ambient pH."* This Order includes receiving water limitations for both pH range and pH change based on Basin Plan objectives.

   The Basin Plan allows an appropriate averaging period for pH change in the receiving stream, "*provided that beneficial uses will be fully protected"*.

j. **Pesticides**. The Basin Plans include water quality objectives for pesticides. Receiving water limitations for pesticides are included in this Order and are based on Basin Plan objectives.

k. **Radioactivity**. The Basin Plans include a water quality objective that *"[R]adionuclides shall not be present in concentrations that are harmful to human, plant, animal or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal or aquatic life."* The Basin Plans state further that *"[A]t a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of radionuclides in excess of the maximum contaminant levels (MCLs) specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations…"* Receiving water limitations for radioactivity are included in this Order and are based on Basin Plan objectives.

l. **Salinity**. The Sacramento and San Joaquin River Basin Plan includes water quality objectives for electrical conductivity and total dissolved solids that are applicable to specific water bodies listed on page III-7.00, Table III-3. The site-specific electrical conductivity objectives applicable to the Sacramento River, Feather River (including the North and Middle Forks), and the San Joaquin River from Friant Dam to Mendota Pool, are included in this Order. The site-specific total dissolved solids objectives applicable to North, Middle and South Forks of the Feather River to Folsom Lake and the Feather River from Folsom Dam to the Sacramento River are included in this Order. The receiving water limitations for

electrical conductivity and total dissolved solids are based on the Basin Plan objectives.

The electrical conductivity objectives that apply to specific water bodies in the Tulare Lake Basin Plan, Tables III-2 and III-3, are incorporated by reference.

m. **Sediment.** The Basin Plans include a water quality objective that *"[T]he 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 beneficial uses."* Receiving water limitations for suspended sediments are included in this Order and are based on Basin Plan objectives.

n. **Settleable Material.** The Basin Plans include a water quality objective that *"[W]aters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses."* Receiving water limitations for settleable material are included in this Order and are based on Basin Plan objectives.

o. **Suspended Material.** The Basin Plans include a water quality objective that *"[W]aters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses."* Receiving water limitations for suspended material are included in this Order and are based on Basin Plan objectives.

p. **Taste and Odors**. The Basin Plans include a water quality objective that *"[W]ater shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses."* Receiving water limitations for taste- or odor-producing substances are included in this Order and are based on Basin Plan objectives.

q. **Temperature.** The Basin Plans include the objective that "[a]*t no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5ºF above natural receiving water temperature*." This Order includes a receiving water limitation based on these objectives.

The temperature objectives that apply to specific water bodies in the Sacramento and San Joaquin River Basin Plan, Tables III-4 and III-4A, are incorporated by reference.

r. **Toxicity**. The Basin Plans include a water quality objective that *"[A]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life."* Receiving water limitations for toxicity are included in this Order and are based on Basin Plan objectives.

s. **Turbidity.** The Basin Plans include water quality objectives for turbidity such that receiving waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses as follows:

a. For the Sacramento and San Joaquin River Basins:

i. Turbidity shall not exceed 2 Nephelometric Turbidity Unit (NTU) where natural turbidity is less than 1 NTU;

ii. Turbidity shall not increase more than 1 NTU where natural turbidity is between 1 and 5 NTU;

iii. Turbidity shall not increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;

iv. Turbidity shall not increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; and

v. Turbidity shall not increase more than 10 percent where natural turbidity is greater than 100 NTUs.

b. For the Tulare Basin, turbidity shall not increase:

i. More than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTUs.

ii. More than 20 percent where natural turbidity is between 5 and 50 NTUs.

iii. More than 10 NTU where natural turbidity is between 50 and 100 NTUs.

iv. More than 10 percent where natural turbidity is greater than 100 NTUs.

In determining compliance with the above limitations, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.

For Folsom Lake and American River (Folsom Dam to Sacramento River), except for periods of storm runoff, the turbidity shall not be less than or equal to 10 NTUs. To the extent of any conflict with the general turbidity objective, the more stringent applies."

Numeric receiving surface water limitations for turbidity are included in this Order based on Basin Plan objectives for turbidity.

B. Groundwater

1. The beneficial uses of the underlying groundwater are municipal and domestic supply (MUN), industrial service supply (IND), industrial process supply (PRO), and agricultural supply (AGR).

2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states that groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plans also establish numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum, compliance with MCLs in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 ml. The Basin Plans require the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.

3. Domestic sewage from the hatchery buildings and private residences is discharged to septic tank/leachfield systems or onsite sewage lagoons at some CAAP facilities. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

   This Order does not allow degradation of groundwater quality to occur as a result of disposal to land. If degradation is detected, this Order may be reopened to establish appropriate numeric groundwater limits.

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. 122.41(h), (j)-(l), 122.44(i), and 122.48 requires that all NPDES permits specify monitoring and reporting requirements. California Water Code §§ 13267 and 13383 also authorize the Central Valley Water Boards to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (Attachment C), of this Order, establishes monitoring, reporting, and recordkeeping requirements to implement federal and state requirements. Additional site-specific monitoring requirements for constituents may be specified in the Notice of Applicability issued by the Executive Officer. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for CAAP facilities covered by this Order.

A. Influent Monitoring

1. Influent monitoring is required for TSS and pH when there is a discharge from the CAAP facility. Influent TSS will be subtracted from the effluent concentrations to calculate the net increase. Hardness and copper (as total recoverable) monitoring is required during periods when copper sulfate is used at the Facility. Electrical conductivity monitoring is required during periods when sodium chloride is used at the CAAP facility.

2. In addition, CAPP facilities that have been granted an intake water credit in the NOA must monitor the influent for each applicable pollutant. Influent samples must be taken concurrent with effluent samples. Due to the site-specific situation for each CAAP facility that is granted an intake water credit, the NOA will specify the sample type and frequency that will ensure adequate representation of the influent pollutant mass and concentrations.

3. Where multiple intake water sources are used and an intake water credit is granted, the influent flow from each source must be monitored to calculate a flow-weighted influent concentration. In accordance with the SIP, the pollutant from the receiving water shall be assumed to have a concentration that is no greater than concentration in the CAAP facilities intake water. Therefore, monitoring of the intake water from the receiving body must be performed for each pollutant. The pollutant concentrations from intake sources other than the receiving water are assumed to have a concentration that is no greater than the most stringent applicable water quality objective. Therefore, monitoring for hardness of the intake water from the receiving water body is also required when the effluent is monitored to derive the most stringent water quality objective for one or more of the hardness-dependent metals contained in the CTR (cadmium, chromium III, copper, lead, nickel, silver, and zinc) and/or applicable Basin Plan. Due to the site-specific situation for each CAAP facility that is granted an intake water credit, the NOA will specify the sample type and frequency that will ensure adequate representation of the influent pollutant mass and concentrations.

B. Effluent Monitoring

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

2. Effluent monitoring for TSS is required of all CAAP facilities to determine compliance with applicable effluent limitations.

3. Effluent monitoring for specific conductance is required monthly when sodium chloride is added to CAAP facility waters. Monitoring for hardness and copper (as total recoverable) is required when copper sulfate is utilized for treatments. Monitoring for formaldehyde is required when formalin is utilized (estimated

concentrations of formaldehyde may be reported in lieu of analytical monitoring). Monitoring for chlorine residual is required during chlorine use. Effluent monitoring for turbidity is required to assess the effectiveness of solids removal and impact on the receiving water. Effluent monitoring for pH is required to evaluate impact on the receiving water.

4. CAPP facilities that have been granted an intake water credit in the NOA must monitor the effluent for each applicable pollutant. Effluent samples must be taken concurrent with influent samples. Due to the site-specific situation for each CAAP facility that is granted an intake water credit, the NOA will specify the sample type and frequency that will ensure adequate representation of the effluent pollutant mass and concentrations.

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 stream.

2. Groundwater

Groundwater monitoring is not required in this Order. Groundwater monitoring for total and fecal coliform shall be conducted as specified in the NOA for an individual facility when depth to ground water is less than 5 feet as measured from the bottom of the sewage lagoon.

E. Other Monitoring Requirements

1. Drug and Chemical Use

Quarterly reporting of monthly drug and chemical use is required in this Order. The ELG requires reporting on the use of drugs, disinfectants, and other chemicals in discharges authorized by NPDES permits.

VIII. RATIONALE FOR PROVISIONS

A. Standard Provisions

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

40 C.F.R. 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 C.F.R. 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. 122.41(j)(5) and (k)(2) because the enforcement authority under the CWC is more stringent. In lieu of these conditions, this Order incorporates by reference CWC section 13387(e).

B. Special Provisions

1. Reopener Provisions

a. This provision allows the Central Valley Water Board to re-open this Order to include any newly adopted receiving water standards.

b. Conditions that necessitate a major modification of a permit are described in 40 C.F.R. 122.62, including the following:

i. 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 or less stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the Federal Water Pollution Control Act or amendments thereto, the Central Valley Water Board will revise and modify this Order in accordance with such more or less stringent standards.

ii. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.

2. Special Studies and Additional Monitoring Requirements

a. **Provision VI.C.2, Chemical and Aquaculture Drug Reporting Requirements.** As described in Section IV.B.1 of this Fact Sheet, the final ELG includes the following reporting and narrative requirements for CAAP facilities that are subject to 40 C.F.R. Part 451:

i. Each facility must notify the permitting authority of the use of any investigational new animal drug (INAD) and any extra-label drug use where the use may lead to a discharge to waters of the United States.
ii. Each facility must report for failure in or damage to the structure of an aquatic animal containment system, resulting in an unanticipated material discharge of pollutant to waters of the United States.
iii. Each facility must develop and maintain a BMP Plan for solids control, material storage, structural maintenance, record keeping, and training.

Prior to using any new chemical or aquaculture drug at a CAAP facility, the Discharger is required to notify the Central Valley Water Board of the proposed use. The notification must contain the toxicity testing results of the new chemical or aquaculture drug as specified in Section VII.C.2.a of this Order. These reporting and toxicity testing requirements are needed for the Central Valley 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 Plans, or narrative water quality objective for toxicity from the Basin Plans.

3. Best Management Practices and Pollution Prevention

a. **Provision VII.C.3, Best Management Practices.** BMP Plan requirements are established based on requirements in Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category at 40 C.F.R. Part 451. CAAP facilities are required to develop and maintain a BMP Plan that addresses the following requirements: solids control, material storage, structural maintenance, record-keeping, and training. An Evaluation and Minimization Plan for salinity is required as part of the BMP Plan to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity. The Discharger must make the BMP Plan available to the Central Valley Water Board upon request, and submit certification that the BMP Plan has been developed.

4. Waste Disposal

a. Provision VII.C.4.a, the 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 waste disposal specifications for drugs and chemicals are to prevent other unauthorized discharges to waters of the United States or waters of the State.

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

6. Other Special Provisions – Not Applicable

7. Compliance Schedules – Not Applicable

IX. PUBLIC PARTICIPATION

The Central Valley Water Board is considering the reissuance of WDRs that will serve as a General NPDES permit for CAAP facilities. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDRs. The Central Valley Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for CAAP facilities and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through electronic posting on the Central Valley Water Board's internet website.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Central Valley Water Board at the address above on the cover page of this Order and publication in major newspapers for the Sacramento, Fresno, and Redding areas.

To be fully responded to by staff and considered by the Central Valley Water Board, written comments should be received at the Central Valley Water Board offices by noon on 20 October 2014.

C. Public Hearing

The Central Valley Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: 4/5 December 2014
Time: 8:30 am
Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Interested persons are invited to attend. At the public hearing, the Central Valley Water Board will hear testimony, if any, pertinent to the discharges from CAAP facilities, WDRs, and general 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 www.waterboards.ca.gov/centralvalley where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Central Valley Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Central Valley 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 for each of the individual CAAP facilities, related documents, tentative effluent limitations and special provisions, comments received and other information are on file and may be inspected at the Central Valley Water Board offices at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (916) 464-3291.

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 Central Valley Water Board, reference this Order, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Jim Marshall at (916) 464-4772 or james.marshall@waterboards.ca.gov.

ATTACHMENT E – NOTICE OF INTENT

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

NOTICE OF INTENT

TO COMPLY WITH THE TERMS OF
GENERAL ORDER NO. R5-2010-0018
FOR
COLD WATER CONCENTRATED AQUATIC ANIMAL PRODUCTION FACILITY
DISCHARGES TO SURFACE WATERS

A. OWNER INFORMATION

Name:			
Mailing Address:			
City:	State:	ZIP:	
Contact Person:			
Phone No:	Fax No:	E-Mail:	
Signature:			Date:

B. OPERATOR *(If different from owner)*

Name:			
Mailing Address:			
City:	State:	ZIP:	
Contact Person:			
Phone No:	Fax No:	E-Mail:	
Signature:			Date:

C. PROPERTY OWNER

Name:			
Mailing Address:			
City:	State:	ZIP:	
Contact Person:			
Phone No:	Fax No:	E-Mail:	
Signature:			Date:

D. BILLING ADDRESS

Name:		
Mailing Address:		
City:	State:	ZIP:
Phone No:	Fax No:	E-Mail:
Contact Person		

E. FACILITY INFORMATION

Facility Name:	Phone :
Mailing Address:	
Location address:	County:
Discharge Rate (MGD):	Receiving Water:
Latitude:	Longitude:
Active Orders or Permits adopted by the Central Valley Water Board. Include effective dates:	
Attach a map at least 1:24000 (1" = 2000') showing the location of the discharge (e.g., USGS 7.5" topographic map). The map should show the facility location, discharge point(s) and surface waters.	

F. OPERATIONS AND PRODUCTION INFORMATION

Is the production system best described as a *flow through*, a *recirculating, or a pond system*?
Number and type (concrete raceways, earthen ponds, etc.) of rearing units: Total area of rearing units:
Number and type of treatment units (full-flow settling basins, off-line settling basins, quiescent zones, etc.)
Does the facility operate year-round? If not, project the number of operating days on a monthly basis throughout the calendar year.
Attach a flow diagram of the production operations, wastewater collection and treatment, and location of monitoring locations.

In the table below, list the species grown or held at your facility and estimate the annual production of each in gross harvestable weight (if fish are released rather than harvested, production is the estimated weight at the time of release) for the 5-year term of the permit, based on historical operations, planned changes, and/or design capacity.

Species	Year One	Year Two	Year Three	Year Four	Year Five

G. WASTEWATER CHARACTERIZATION

For each discharge point to surface waters, describe the facility process from which water is discharged through each discharge point.

Wastewater Discharges	
Discharge Point	**Description of source, frequency, duration & volume of discharge**
001	
002	
003	
004	

List outfall and receiving water body (river; stream; channel; lake; etc.)							
Discharge Point Number (list)	**Latitude**			**Longitude**			**Receiving Water (Name)**
	Deg	**Min**	**Sec**	**Deg**	**Min**	**Sec**	

H. FEED USE

Describe your facility's use of feed. This may be a range expected over the next 5 years.

Feed Type	Maximum Monthly Feed Use (lbs)	Average Annual Feed Use (lbs)

I. AQUACULTURE DRUGS AND CHEMICALS

List all projected use of chemicals and therapeutic drugs, including cleaners and disinfectants, feed additives or other ingested drugs, immersion or injected treatments. (Use an attachment if necessary.)

Drug or Chemical	Maximum Daily Amount Used	Method of Application	Maximum Amount in Effluent

J. INTAKE WATER CREDITS

1. *Does your facility's intake water exceed applicable numeric water quality criteria**?***
   ☐ ***Yes*** ☐ ***No***

2. *If **Yes**, will you be applying for an intake water credit?* ☐ ***Yes*** ☐ ***No***

3. *If **Yes**, is the primary source of water for your facility operation the same as the water body that receives your facility's effluent discharge?* ☐ ***Yes*** ☐ ***No***

   *If "**No**", you do not need to complete the remainder of this section as your facility is not eligible for an intake water credit.*

   *If "**Yes**", continue to question J.4 below.*

4. *a. If you answered "**Yes**" to question J.3., does your facility use multiple water supplies?*
   ☐ ***Yes*** ☐ ***No***

*b. If **No**, go to question J.5. If **Yes**, describe the conditions that trigger the use of the supplemental water supply and the frequency and duration that the supplemental water supply is used.*

c. Complete the following table if your facility uses multiple water supplies.

Intake Water Source Name/Description	**Max. Flow** (specify units)	**Min. Flow** (specify units)
1.		
2.		
3.		
4.		
Receiving Water Name		

5. *Does your facility alter the pollutant for which you are seeking an intake water credit chemically or physically?* ☐ ***Yes*** ☐ ***No***

   *If **No**, go to question J.6. If **Yes**, describe how your facility alters the pollutant.*

6. *Would the pollutant for which you are seeking an intake water credit have reached the vicinity of the discharge point in the receiving water within a reasonable period of time and with the same effects had it not been diverted to your facility?* ☐ ***Yes*** ☐ ***No***

   Provide an explanation below:

7. *Does the timing or location of your discharge 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?* ☐ ***Yes*** ☐ ***No***

   Provide an explanation below:

_____

_____

_____

_____

_____

CERTIFICATION AND SIGNATURE

"I hereby certify under penalty of perjury that the information provided in this application and in any attachments is true and accurate to the best of my knowledge. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. By signing this NOI, I agree to comply with the provisions of the General Permit. The Central Valley Water Board will be immediately notified of any violation of the General Permit"

_____ _____
Printed Name of Person Signing Date

_____
Signature

_____
Title

ATTACHMENT F – MONTHLY CHEMICAL USE REPORT[1]

Chemical Name	Date	Purpose	Amount Applied	Units	Duration of Treatment	Chemical or Aquaculture Drugs Used (Immersion, feed, injected, maintenance of systems, etc.)	Flow Treated (cfs)	Total Effluent Flow (cfs)	Effluent Conc. (mg/L)[2]	Person Reporting

[1] Monthly chemical use reports shall be submitted quarterly (see Attachment D, Section VII, E.1.)
[2] Indicate if the effluent concentration was measured or calculated.

ATTACHMENT G – PRIORITY POLLUTANT METALS MONITORING

I. Background. The Central Valley 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 Central Valley Water Board is requiring, as part of the Monitoring and Reporting Program, that CAAP facilities 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 and the upstream receiving water (RSW-001) and analyzed for the metals listed in Table G-1, **once during the term of this Order. The monitoring shall occur after 1 January 2018, but no later than 1 July 2019**~~**one time at least 180 days but no more than two (2) years prior to expiration of this Order**~~**.** CAAP facilities with more than one discharge (EFF-001, EFF-002, etc) may sample one effluent discharge if the Executive Officer determines the discharge is representative of the entire facility. The data shall be submitted to the Central Valley Water Board **within 60 days of the final sampling event**.

Table G-1 – List of Required Priority Pollutant Metals

Constituent	Units	Maximum Reporting Level[1]
Hardness (as $CaCO_3$)	mg/L	--
Antimony, Total Recoverable	µg/L	--
Arsenic, Total Recoverable	µg/L	10
Beryllium, Total Recoverable	µg/L	2
Cadmium, Total Recoverable	µg/L	0.25
Chromium (III), Total Recoverable	µg/L	0.5
Chromium (VI), Dissolved	µg/L	10
Copper, Total Recoverable	µg/L	0.5
Lead, Total Recoverable	µg/L	0.5
Mercury, Total Recoverable	µg/L	0.5
Nickel, Total Recoverable	µg/L	1
Selenium, Total Recoverable	µg/L	5
Silver, Total Recoverable	µg/L	0.25
Thallium, Total Recoverable	µg/L	1
Zinc, Total Recoverable	µg/L	1

[1] The reporting levels required in this table for priority pollutant constituents are established based on Section 2.4.2 and Appendix 4 of the SIP.

ATTACHMENT H – SCREENING LEVELS FOR PRIORITY POLLUTANT METALS

I. Requirements for All Discharges

Table H-1below contains screening levels for the priority pollutant metals. These screening levels will be compared to effluent monitoring results to determine eligibility for coverage under the General Order.

Table H-1. Screening Levels for Priority Pollutant Metals

Priority Pollutant	Units	Screening Level (Most Stringent Objective/Criterion)	Most Stringent Objective/Criteria		
			Human Health	Chronic Aquatic Life	Acute Aquatic Life
Antimony, Total Recoverable	µg/L	6	6	--	--
Arsenic, Total Recoverable	µg/L	10	10	150	340
Beryllium, Total Recoverable	µg/L	4	4	--	--
Cadmium, Total Recoverable	µg/L	[1]	5	[2]	[2]
Chromium (III)	µg/L	[1]	--	[2]	[2]
Chromium (VI)	µg/L	11	100	11	16
Copper, Total Recoverable	µg/L	[1]	1,300	[2]	[2]
Lead, Total Recoverable	µg/L	[1]	15	[2]	[2]
Mercury, Total Recoverable	µg/L	0.05	0.05	0.77	1.4
Nickel, Total Recoverable	µg/L	[1]	100	[2]	[2]
Selenium, Total Recoverable	µg/L	5.0	20	5.0	20
Silver, Total Recoverable	µg/L	[1]	100	[2]	[2]
Thallium, Total Recoverable	µg/L	1.7	1.7	40	1,400
Zinc, Total Recoverable	µg/L	[1]	5,000	[2]	[2]

[1] The aquatic life objectives/criteria for this pollutant are hardness dependent. The most stringent objective/criteria should be derived subsequent to calculation of the hardness-dependent objective/criterion (see footnote 2 below).

[2] The aquatic life objectives/criteria for this pollutant are hardness dependent. See Table H-2 below for the equations to be used to derive the applicable criterion.

Table H-2. Equations for Derivation of Hardness-Dependent Metals

Parameter	Units	Screening Level/Water Quality Objective	
		Acute Aquatic Life[1]	Chronic Aquatic Life[1]
Cadmium, Total Recoverable	µg/L	$e^{\{1.128\ [\ln(\text{hardness})] - 3.6867\}}$	$e^{\{0.7852\ [\ln(\text{hardness})] - 2.715\}}$
Chromium (III)	µg/L	$e^{\{0.8190\ [\ln(\text{hardness})] + 3.688\}}$	$e^{\{0.8190\ [\ln(\text{hardness})] + 1.561\}}$
Copper, Total Recoverable	µg/L	$e^{\{0.9422\ [\ln(\text{hardness})] - 1.700\}}$	$e^{\{0.8545\ [\ln(\text{hardness})] - 1.702\}}$
Lead, Total Recoverable	µg/L	$e^{\{1.273\ [\ln(\text{hardness})] - 1.460\}}$	$e^{\{1.273\ [\ln(\text{hardness})] - 4.705\}}$
Nickel, Total Recoverable	µg/L	$e^{\{0.8460\ [\ln(\text{hardness})] + 2.255\}}$	$e^{\{0.8460\ [\ln(\text{hardness})] + 0.0584\}}$
Silver, Total Recoverable	µg/L	$e^{\{1.72\ [\ln(\text{hardness})] – 6.52\}}$	--
Zinc, Total Recoverable	µg/L	$e^{\{0.8473\ [\ln(\text{hardness})] + 0.884\}}$	$e^{\{0.8473\ [\ln(\text{hardness})] + 0.884\}}$

[1] The receiving water hardness shall be used in these equations.

II. Requirements for Discharges to Specific Waterbodies

The screening levels contained in Table H-3 below for ~~arsenic,~~ copper, silver, and zinc supercede those contained in Table H-1 for the same parameters for dischargers seeking authorization to discharge under this General Order to the Sacramento River from Keswick Dam to the I Street Bridge at City of Sacramento, American River from Folsom Dam to the Sacramento River, and Folsom Lake.

Table H-3. Screening Levels for Discharges to the Sacramento River from Keswick Dam to the I Street Bridge at City of Sacramento, American River from Folsom Dam to the Sacramento River, and Folsom Lake

Parameter	Units	Screening Level/Water Quality Objective	
		Acute Aquatic Life[3]	Chronic Aquatic Life[3]
Copper, Total Recoverable[1]	µg/L	$e^{\{0.9422\ [\ln(hardness)] - 1.700\}}$	$e^{\{0.8545\ [\ln(hardness)] - 1.702\}}$
Silver, Total Recoverable[1]	µg/L	$e^{\{1.72\ [\ln(hardness)] – 6.52\}}$	--
Zinc, Total Recoverable[2]	µg/L	$e^{\{0.8473\ [\ln(hardness)] + 0.884\}}$	$e^{\{0.8473\ [\ln(hardness)] + 0.884\}}$

1 Not to exceed 10 µg/L.
2 Not to exceed 100 µg/L.
3 The receiving water hardness shall be used in these equations.

For dischargers seeking authorization to discharge under this General Order to the Sacramento River and its tributaries above the State Highway 32 Bridge at Hamilton City, the screening levels contained in Table H-4 for copper, zinc, and cadmium supersede those contained in Table H-1 for the same parameters.

Table H-4. Equations for Derivation of Hardness-Dependent Screening Levels for Discharges to the Sacramento River and Its Tributaries Above the State Highway 32 Bridge at Hamilton City

Parameter	Units	Screening Level/Water Quality Objective[1]
Copper, Total Recoverable	µg/L	$e^{\{0.905\ [\ln(hardness)] – 1.612\}}$
Zinc, Total Recoverable	µg/L	$e^{\{0.830\ [\ln(hardness)] – 0.289\}}$
Cadmium, Total Recoverable	µg/L	$e^{\{1.160\ [\ln(hardness)] – 5.777\}}$

1 The receiving water hardness shall be used in these equations.