

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION**

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**ORDER R5-2011-0084
NPDES NO. CA0085120**

**WASTE DISCHARGE REQUIREMENTS FOR THE
TNC HOLDING COMPANY, LLC, AND THE RALPH F. NIX 1995 REVOCABLE TRUST
TNC HOLDING COMPANY CAVIAR STURGEON FARM
SACRAMENTO COUNTY**

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

Table 1. Discharger Information

Discharger	TNC Holding Company, LLC, and the Ralph F. Nix 1995 Revocable Trust
Name of Facility	TNC Holding Company Caviar Sturgeon Farm
Facility Address	10822 Gay Road, Wilton, CA 95693
	Sacramento County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a minor discharge.	

The discharge by TNC Holding Company, LLC, and the Ralph F. Nix 1995 Revocable Trust from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Aquaculture Wastewater	38° 24' 03" N	121° 16' 53" W	Unnamed Tributary of the Cosumnes River

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	1 December 2011
This Order shall become effective on:	1 December 2011
This Order shall expire on:	1 December 2016
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	<u>180 days prior to the Order expiration date</u>

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 1 December 2011.

Original Signed By
PAMELA C. CREEDON, Executive Officer

Table of Contents

I.	Facility Information	4
II.	Findings	4
III.	Discharge Prohibitions	10
IV.	Effluent Limitations and Discharge Specifications	10
	A. Effluent Limitations – Discharge Point No. 001	10
	B. Land Discharge Specifications – Not applicable	11
	C. Reclamation Specifications – Not applicable	11
V.	Receiving Water Limitations	11
	A. Surface Water Limitations	11
	B. Groundwater Limitations	13
VI.	Provisions	14
	A. Standard Provisions	14
	B. Monitoring and Reporting Program Requirements	19
	C. Special Provisions	19
	1. Reopener Provisions	19
	2. Special Studies, Technical Reports and Additional Monitoring Requirements	19
	3. Best Management Practices and Pollution Prevention	20
	4. Construction, Operation and Maintenance Specifications	22
	5. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable	23
	6. Other Special Provisions	23
	7. Compliance Schedules – Not Applicable	24
VII.	Compliance Determination	24

List of Tables

Table 1.	Discharger Information	1
Table 2.	Discharge Location	1
Table 3.	Administrative Information	1
Table 4.	Facility Information	4
Table 5.	Basin Plan Beneficial Uses	6
Table 6.	Final Effluent Limitations	10

List of Attachments

Attachment A – Definitions	A-1
Attachment B – Map	B-1
Attachment C – Flow Schematic.....	C-1
Attachment D – Standard Provisions.....	D-1
Attachment E – Monitoring and Reporting Program	E-1
Attachment F – Fact Sheet.....	F-1
Attachment G – Summary of Reasonable Potential Analysis	G-1
Attachment H – Calculation of WQBELs.....	H-1
Attachment I – Drug and Chemical Usage Report Table	I-1

I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	TNC Holding Company, LLC and the Ralph F. Nix 1995 Revocable Trust
Name of Facility	TNC Holding Company Caviar Sturgeon Farm, Wilton
Facility Address	10822 Gay Road
	Wilton, CA 95693
	Sacramento County
Facility Contact, Title, and Phone	Steve Wheeler, Farm Manager, 916-544-2464
Mailing Address	60 Dorman Avenue, San Francisco, CA 94124
Type of Facility	Concentrated Aquatic Animal Production/ Fish Hatchery (CAAP Facility)
Facility Design Flow	Not applicable

II. FINDINGS

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

A. Background. TNC Holding Company, LLC, is the operator of the TNC Holding Company Caviar Sturgeon Farm (formerly Tsar Nicoulai Caviar Sturgeon Farm), a fish farm, having acquired through foreclosure the personal property assets and business the prior operator, Tsar Nicoulai Caviar, LLC. The Ralph F. Nix 1995 Revocable Trust owns the 5-acre property at 10822 Gay Road, Wilton, California, on which the Facility’s water treatment pond is located. Title to the remaining 10 acres on which the Facility is located remains in Tsar Nicoulai Caviar, LLC, subject to a deed of trust in favor of TNC Holding Company, LLC, to secure additional indebtedness of the prior operator to TNC Holding Company, LLC. Together TNC Holding Company LLC and the Ralph F. Nix 1995 Revocable Trust are sometimes jointly hereinafter referred to as Discharger. The Discharger is currently discharging pursuant to Order R5-2005-0080 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0085120. The Discharger submitted a Report of Waste Discharge, dated 11 December 2009 and applied for a NPDES permit renewal to discharge up to 3.1 million gallons per day (mgd) of treated wastewater from the TNC Holding Company Caviar Sturgeon Farm, hereinafter Facility. The application was deemed complete on 3 August 2010.

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. Facility Description. The treatment system consists of filtration, an aquatic vegetation pond for nutrient uptake, and a biofiltration system for ammonia and dissolved organics

removal. Wastewater is discharged from Discharge Point No. 001 (see table on cover page) to the Sacramento County storm drain system, which flows to an unnamed tributary of the Cosumnes River, and is ultimately discharged to the Cosumnes River, a water of the United States within the North Valley Floor Hydrologic Unit. Attachment B provides a topographic map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

- C. Legal Authorities.** This Order is issued pursuant to section 402 of the Clean Water Act (CWA) and implementing regulations adopted by USEPA and chapter 5.5, division 7 of the California Water Code (CWC; commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the CWC (commencing with section 13260).
- D. Background and Rationale for Requirements.** The Central Valley Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E and G through I are also incorporated into this Order.
- E. California Environmental Quality Act (CEQA).** Under CWC section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.
- F. Technology-based Effluent Limitations.** Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (40 CFR 122.44), require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Effluent Limitations Guidelines and Standards for the Aquatic Animal Production Industry Category in 40 CFR 451 through the application of best available technology economically achievable (BAT) and the best conventional technology (BCT). A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).
- G. Water Quality-Based Effluent Limitations (WQBELs).** Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

40 CFR 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant,

WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state’s narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

H. Water Quality Control Plans. The Central Valley Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised September 2009)*, for the Sacramento and San Joaquin River Basins (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. The Basin Plan at page II-2.00 states that the “...*beneficial uses of any specifically identified water body generally apply to its tributary streams.*” The Basin Plan does not specifically identify beneficial uses for unnamed tributary of the Cosumnes River, but does identify present and potential uses for Cosumnes River, to which the unnamed tributary of the Cosumnes River is tributary. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Thus, as discussed in detail in the Fact Sheet, beneficial uses applicable to unnamed tributary of the Cosumnes River are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Uses
001	Unnamed Tributary of the Cosumnes River	<p><u>Existing:</u> Municipal and domestic supply (MUN); agricultural supply, including irrigation and stock watering (AGR); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); migration of aquatic organisms, warm and cold (MIGR); spawning, reproduction, and/or early development, warm and cold (SPWN); and wildlife habitat (WILD).</p>

The Basin Plan includes 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 CFR 130, et seq.)*.” The Basin Plan also states, “*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.*” The Cosumnes River is listed as a WQLS for exotic species in the 303(d) list of impaired water bodies.

Requirements of this Order implement the Basin Plan.

- I. 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.
- J. State Implementation Policy.** 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 USEPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plan. The SIP became effective on 18 May 2000 with respect to the priority pollutant criteria promulgated by 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.
- K. Compliance Schedules and Interim Requirements.** In general, an NPDES permit must include final effluent limitations that are consistent with CWA section 301 and with 40 CFR 122.44(d). There are exceptions to this general rule. The State Water Board's *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits* (Compliance Schedule Policy) allows compliance schedules for new, revised, or newly interpreted water quality objectives or criteria, or in accordance with a TMDL. All compliance schedules must be as short as possible, and may not exceed ten years from the effective date of the adoption, revision, or new interpretation of the applicable water quality objective or criterion, unless a TMDL allows a longer schedule. The Regional Water Board, however, is not required to include a compliance schedule, but may issue a Time Schedule Order pursuant to CWC section 13300 or a Cease and Desist Order pursuant to CWC section 13301 where it finds that the discharger is violating or threatening to violate the permit. The Regional Water Board will consider the merits of each case in determining whether it is appropriate to include a compliance schedule in a permit, and, consistent with the Compliance Schedule Policy, should consider feasibility of achieving compliance, and must impose a schedule that is as short as possible to achieve compliance with the effluent limit based on the objective or criteria.

The Compliance Schedule Policy and the SIP do not allow compliance schedules for priority pollutants beyond 18 May 2010, except for new or more stringent priority pollutant criteria adopted by USEPA after 17 December 2008.

Where a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric limitations for that constituent or parameter, interim milestones and compliance reporting within 14 days after each interim milestone. The permit may also include interim requirements to control the pollutant, such as pollutant

minimization and source control measures. This Order does not include compliance schedules and interim effluent limitations

- L. Alaska Rule.** On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes. (40 CFR 131.21 and 65 FR 24641 (27 April 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after 30 May 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by 30 May 2000 may be used for CWA purposes, whether or not approved by USEPA.
- M. Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on total suspended solids (TSS). The WQBELs consist of restrictions on ammonia, iron, and pH. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order includes effluent limitations for pH, iron, and ammonia to meet numeric objectives or protect beneficial uses.
- N. Antidegradation Policy.** 40 CFR 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters 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. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 CFR 131.12 and Resolution No. 68-16.
- O. Anti-Backsliding Requirements.** Sections 303(d)(4) and 402(o)(2) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions. Some effluent limitations in this Order are less stringent than those in Order R5-2005-0080. As discussed in detail in the Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.
- P. Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

Q. Monitoring and Reporting. 40 CFR 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. The Monitoring and Reporting Program is provided in Attachment E.

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 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.

R. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42. The Central Valley Water Board has also included in this Order special provisions applicable to the Discharger. Some special provisions require submittal of technical reports. All technical reports are required in accordance with CWC Section 13267. A rationale for the special provisions and need for the technical reports required in this Order is provided in the Fact Sheet.

S. Provisions and Requirements Implementing State Law. The provisions/requirements in sections IV.B, IV.C, V.B, VI.C.4.a, and VI.C.4.b 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.

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

U. 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.

THEREFORE, IT IS HEREBY ORDERED, that this Order rescinds Order R5-2005-0080 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.

III. DISCHARGE PROHIBITIONS

- A. Discharge of wastewater at a location or in a manner different from that described in the Findings is prohibited.
- 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 D).
- C. Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the CWC.
- D. Practices that allow accumulated sludge, grit, and solid residues to be discharged to surface waters or surface water drainage courses are prohibited.
- E. Discharge of aquaculture drugs or chemical additives except salt is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point No. 001

1. Final Effluent Limitations – Discharge Point No. 001

- a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program:

Table 6. Final Effluent Limitations

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	1.2	3.1	-	-
Ammonia Nitrogen, Total (as N)	mg/L	1.4	3.2	-	-
	lbs/day	14	83		
pH	standard units	-	-	6.5	8.5

- b. The Discharger shall minimize the discharge of total suspended solids through implementing best management practices established in Special Provision VI.C.3.a. of this Order.

9. 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;
- d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR 131.12.);
- e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;
- f. Pesticides to be present in concentration in excess of the maximum contaminant levels set forth in CCR, Title 22, division 4, chapter 15; nor
- g. Thiobencarb to be present in excess of 1.0 µg/L.

10. 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.

11. 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.

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

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

14. 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.

15. Temperature. The natural temperature to be increased by more than 5°F.

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

17. Turbidity. The turbidity to exceed the following limitations:

1. Where natural turbidity is less than 1 Nephelometric Turbidity Units (NTU), controllable factors shall not cause the downstream receiving water to exceed 2 NTU;
2. Where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;
3. Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed more than 20 percent;
4. Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTU; nor
5. Where natural turbidity is greater than 100 NTUs, increases shall not exceed more than 10 percent.

B. Groundwater Limitations

1. Release of waste constituents from any storage, treatment, or disposal component associated with the Facility shall not, in combination with other sources of the waste constituents, cause groundwater within influence of the Facility and discharge area(s) to contain waste constituents in concentrations in excess of natural background quality or the applicable water quality objectives, whichever is greater.
 - a. The water quality objectives are listed below.

<u>Constituent</u>	<u>Water Quality Objective, mg/L</u>
Boron	0.7
Chloride	106
Iron	0.3
Manganese	0.05
Sodium	69
Total Dissolved Solids	450
Nitrate (as N)	10

- b. Shall not exhibit a pH of less than 6.5 or greater than 8.4 pH units.

- c. Shall not impart taste, odor, toxicity, or color that creates nuisance or impairs any beneficial use.
2. If groundwater monitoring results show that the discharge of waste is causing groundwater to contain waste constituents in concentrations statistically greater than Water Quality Objectives or background water quality then, within **120 days** of the request of the Executive Officer, the Discharger shall submit a *BPTC Evaluation Workplan* that sets forth the scope and schedule for a systematic and comprehensive technical evaluation of each component of the facility's waste treatment and disposal system to determine best practicable treatment and control for each waste constituent listed in the Groundwater Limitations of this Order. The workplan shall contain a preliminary evaluation of each component of the Facility and effluent disposal system and propose a time schedule for completing the comprehensive technical evaluation. The schedule to complete the evaluation shall be as short as practicable, and shall not exceed one year.
3. In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for investigations and studies, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall bear the professional's signature and stamp.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions (federal NPDES standard conditions from 40 CFR Part 122) included in Attachment D of this Order.
2. The Discharger shall comply with the following provisions:
 - a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, division 3, chapter 26.
 - b. 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 CWA, 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 CFR 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.

- c. 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.

- d. 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.

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

- e. 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.
- f. 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.
- g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by USEPA under section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.
- h. A copy of this Order 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.
- i. 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 90 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.

- j.** The 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 contained in section VI.A.2.i. 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.

- k.** A publicly owned treatment works whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last 3 years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in 4 years, the Discharger shall notify the Central Valley Water Board by 31 January. A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Central Valley Water Board may extend the time for submitting the report.
- l.** 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.

- m.** The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the CWC, including, but not limited to, sections 13385, 13386, and 13387.
- n.** For publicly owned treatment works, prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (CWC section 1211).
- o.** 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 (916) 464-3291 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 D section V.E.1. [40 CFR 122.41(l)(6)(i)].
- p.** 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.
- q.** 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 D, 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

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

C. Special Provisions

1. Reopener Provisions

- a.** Conditions that necessitate a major modification of a permit are described in 40 CFR 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 permit 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.
- b.** 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 this Order as a result of the special condition monitoring data.
- c. Discharge of Aquaculture Chemicals.** This Order may be reopened to include additional prohibitions, effluent limitations or other discharge requirements in the event that the Discharger submits the required information under Section VI.C.2.a of this Order for the discharge of aquaculture chemicals or drugs in addition to salt and hydrogen peroxide.
- d. Ownership Changes.** If the ownership of that portion of the Facility property that is currently owned by the Ralph F. Nix 1995 Revocable Trust is transferred to TNC Holding Company, LLC, this Order will be reopened to remove the Ralph F. Nix 1995 Revocable Trust as a Discharger named to this Order.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. Aquaculture Chemicals or Drugs.** This permit authorizes the discharge of salt in accordance with the effluent limitations, BMP plan requirements, monitoring and reporting requirements and other conditions of this permit. In addition, this permit allows the use of hydrogen peroxide, which breaks down to water and oxygen gas, in the fish rearing tanks. Other aquaculture chemicals or drugs that may enter the wastewater discharge can only be authorized if the Discharger submits a report of waste discharge (RWD) to the Central Valley Water Board

and the Central Valley Water Board reopens and revises this Order. The RWD must include, at minimum, the following 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.
- 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 in accordance with methods specified in EPA 600/4-90/027, Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, using *Ceriodaphnia dubia* to determine the no observed adverse effect level (NOAEL), and the lowest observed adverse effect level (LOAEL).

3. Best Management Practices and Pollution Prevention

a. Best Management Practices (BMP). Within 6 months of adoption of this Order, the Discharger shall submit an updated BMP plan for approval. The updated BMP plan must be consistent with the following objectives:

- i. Minimize the discharge of salinity to surface waters and groundwater.
- ii. Solids Management
 1. Conduct fish feeding in aquaculture ponds in a manner that limits feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth and minimizes the discharge of unconsumed food and waste products to surface waters.
 2. Clean aquaculture ponds using procedures and at frequencies that minimize the disturbance and subsequent discharge of accumulated solids during routine activities such as inventorying, grading, and harvesting.
 3. Storage and disposal practices of harvested water hyacinths or duck weed from aquaculture ponds must be carried out in an environmentally safe

manner so as to prevent any nuisance conditions caused from storing on-site.

4. Report the final disposition of all other solids and liquids, including aquaculture drugs and chemicals, not discharged to surface waters in the effluent.

iii. Operations and Maintenance

1. Maintain in-system production and wastewater treatment technologies to prevent the overflow of any floating matter or bypassing of treatment technologies.
2. Inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.
3. Ensure storage and containment of drugs, chemicals, fuel, waste oil, or other materials to prevent spillage or release into the aquatic animal production Facility, surface waters, or groundwater.
4. Implement procedures for properly containing, cleaning, and disposing of any spilled material.
5. Prevent fish from being released within the FDA-required withdrawal time of any drug or chemical with which they have been treated.
6. Implement procedures to regulate salt usage and to minimize its discharge to surface waters and ground water.
7. Implement appropriate sediment control measures necessary to ensure the discharge does not cause sediment to be discharged into the Cosumnes River.

iv. Recordkeeping

1. Maintain records for aquatic animal rearing units documenting the feed amounts and estimates of the numbers and weight of aquatic animals in order to calculate representative feed conversion ratios.
2. Keep records documenting the frequency of cleaning, inspections, maintenance and repairs.

v. Training

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

2. Train staff on the proper operation and cleaning of production and wastewater treatment systems, including training in feeding procedures and proper use of equipment.

- b. Storm Water.** The Discharger shall obtain coverage under the State Water Board's general industrial storm water permit (Water Quality Order No. 97-03-DWQ). **Within 6 months of adoption of this Order**, the Discharger shall certify in writing to the Central Valley Water Board that it has obtained coverage for discharges of storm water. Application for storm water permit can be obtained from the following address:

State Water Resources Control Board
Division of Water Quality
Attn: Storm Water Section
P.O. Box 1977
Sacramento, CA 95812-1977

4. Construction, Operation and Maintenance Specifications

a. Solids disposal specifications:

- i. Collected screenings, sludges, and other solids, including fish carcasses, but not including harvested water hyacinths and duckweed, 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.
- ii. The discharge of solid waste to lands not owned or controlled by the Discharger, or in a manner not approved by the Executive Officer, is prohibited.
- iii. Collected water hyacinths and duckweed shall be disposed of in a manner that is consistent with the Best Management Plan developed in accordance with Provision VI.C.3.a.
- iv. Any proposed change in solids disposal from a previously approved practice (as described in this Order) shall be reported to this office at least 90 days in advance of the change.

b. Treatment Pond Operating Requirements.

- i. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas or property owned by the discharger.
- ii. The dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/L.

- iii. Ponds shall not have a pH less than 6.5 or greater than 8.5.
- iv. Freeboard shall never be less than two feet (measured vertically to the lowest point of overflow).
- v. Ponds shall be managed to prevent breeding of mosquitoes. In particular:
 - 1. An erosion control program should assure that small coves and irregularities are not created around the perimeter of water surfaces.
 - 2. Weeds shall be minimized, through control of water depth, harvesting, or herbicides.
 - 3. Dead algae, dead vegetation, and debris shall not accumulate on water surfaces.
- c. **Mosquito Prevention.** Areas utilized to collect and transport wastewater, or to treat wastewater shall be managed to prevent breeding of mosquitoes. More specifically,
 - i. Ditches shall be free of emergent, marginal and floating vegetation.
 - ii. Standing water shall not be allowed for greater than 48-hours.
 - iii. Low pressure and un-pressurized pipelines and ditches accessible to mosquitoes shall not be used to store wastewater.
 - iv. Fish tank leakage shall not create standing water.

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

6. Other Special Provisions

- a. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of, or clearance from the State Water Resources Control Board (Division of Water Rights).
- b. 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 this office.

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 paragraph of Standard Provision V.B, Attachment D, 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 California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

- A. Annual Average Effluent Limitation:** For constituents with effluent limitations specified as “calendar annual average” (i.e., iron), the compliance determination is calculated as the average of the monthly averages for the calendar year.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

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

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.

Bioaccumulative

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

Carcinogenic

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

Coefficient of Variation (CV)

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

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 1 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 USEPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays

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

Estimated Chemical Concentration

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

Estuaries

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

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 40 CFR Part 136, Attachment B, revised as of 3 July 1999.

Minimum Level (ML)

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

Mixing Zone

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

Not Detected (ND)

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

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.

Pollutant Minimization Program (PMP)

PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Central Valley Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to CWC section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention

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

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.

Satellite Collection System

The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

Source of Drinking Water

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

Standard Deviation (σ)

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

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

where:

x is the observed value;

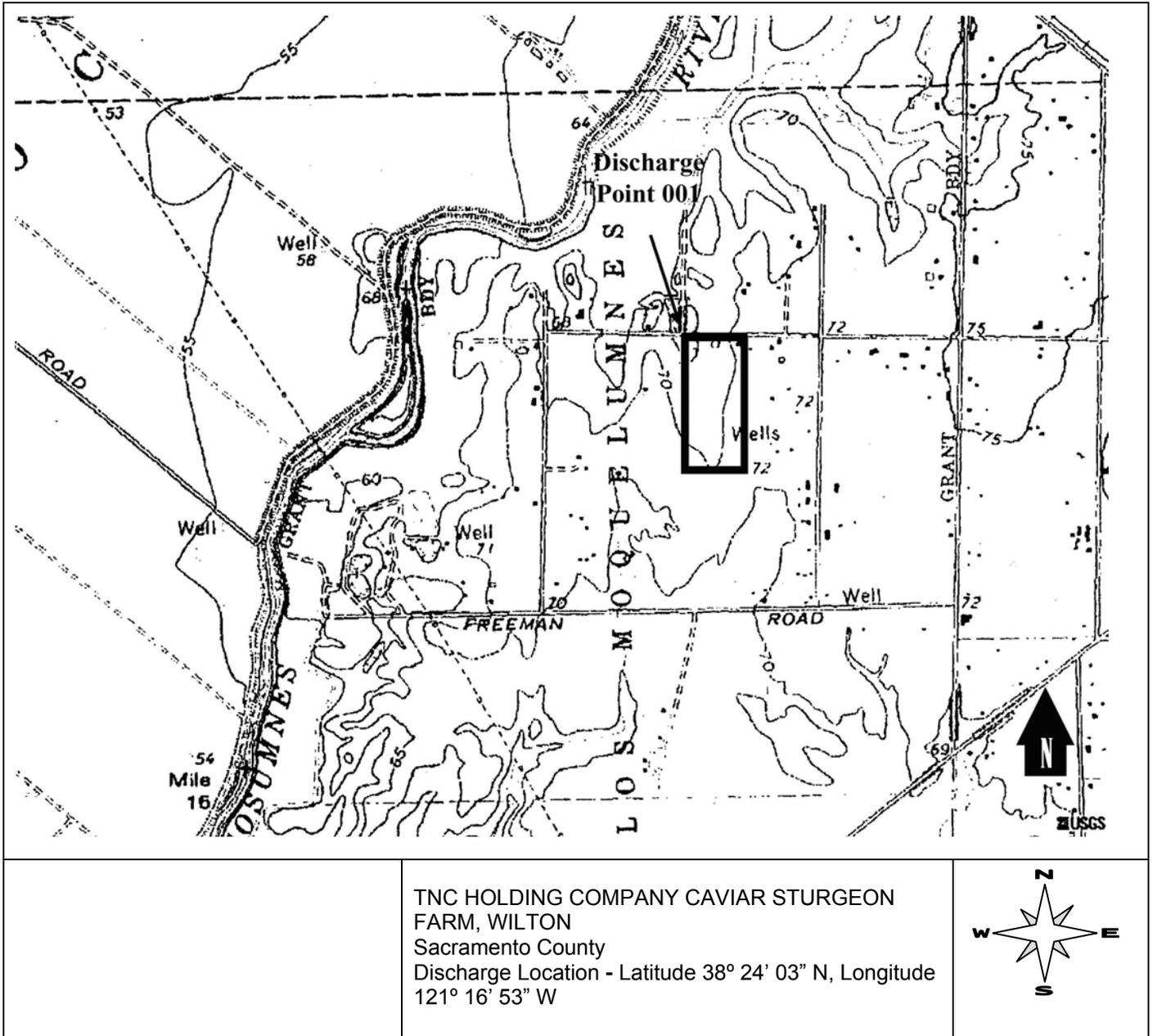
μ is the arithmetic mean of the observed values; and

n is the number of samples.

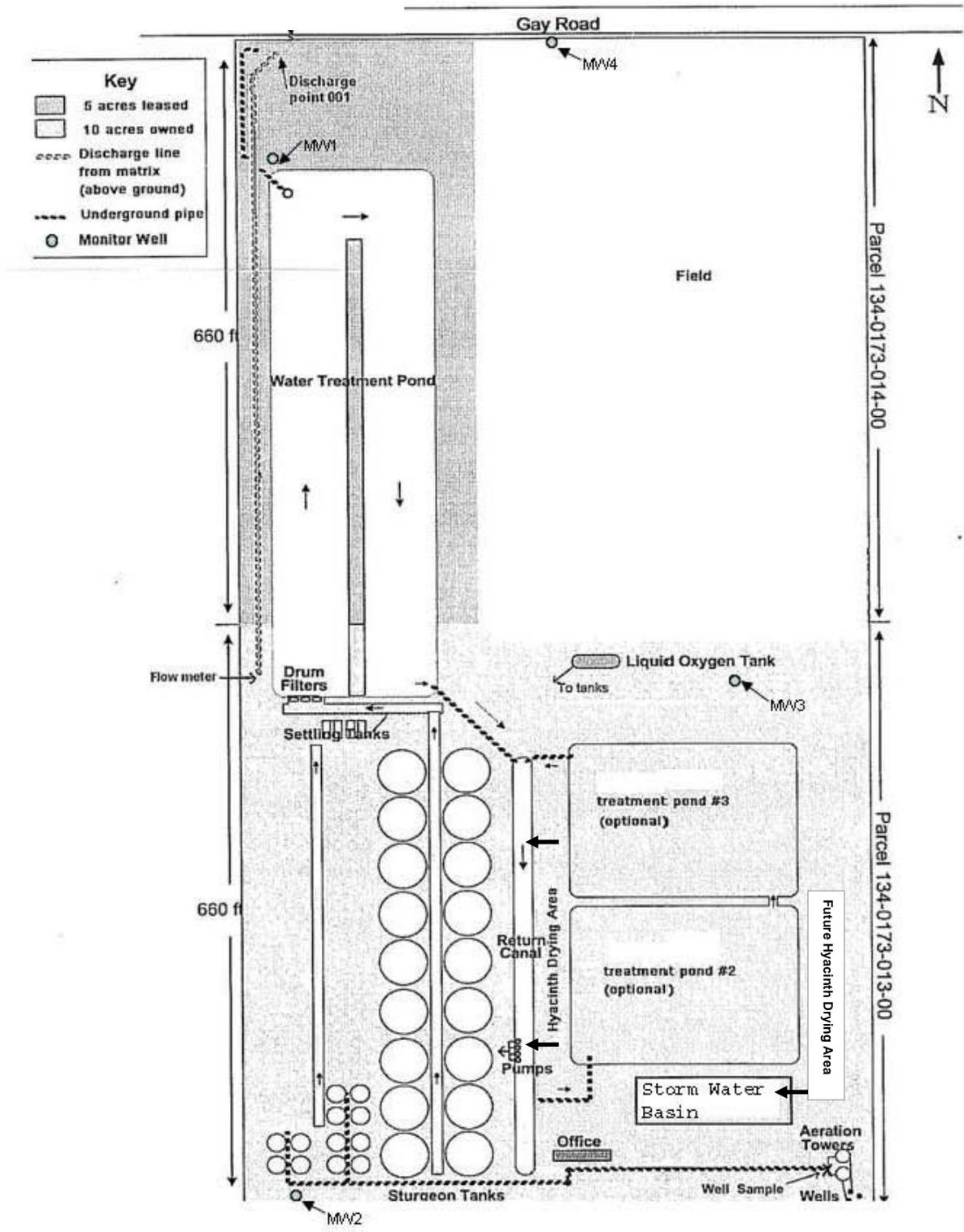
Toxicity Reduction Evaluation (TRE)

TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

ATTACHMENT B – MAP



ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 CFR 122.41(a).)
2. The Discharger shall comply with effluent standards or prohibitions established under section 307(a) of the 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 CFR 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 CFR 122.5(c).)

F. Inspection and Entry

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

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR 122.41(m)(1)(i).)
 - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR 122.41(m)(1)(ii).)
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 CFR 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 CFR 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR 122.41(m)(4)(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 CFR 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 CFR 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 CFR 122.41(m)(4)(ii).)
5. Notice
 - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 CFR 122.41(m)(3)(i).)
 - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 CFR 122.41(m)(3)(ii).)

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of 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 CFR 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 CFR 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 CFR 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 CFR 122.41(n)(3)(ii));
 - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 CFR 122.41(n)(3)(iii)); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR 122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 CFR 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

This Order is not transferable to any person except after notice to the 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 CWC. (40 CFR 122.41(l)(3) and 122.61.)

III. STANDARD PROVISIONS – MONITORING

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

- B.** Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order. (40 CFR 122.41(j)(4) 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 5 years (or longer as required by 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board Executive Officer at any time. (40 CFR 122.41(j)(2).)

B. Records of monitoring information shall include:

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

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

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the 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 CFR 122.41(h); Wat. Code, § 13267.)

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 CFR 122.41(k).)
2. All permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 CFR 122.22(a)(1).)
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 CFR 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 CFR 122.22(b)(2)); and

- c. The written authorization is submitted to the Central Valley Water Board and State Water Board. (40 CFR 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 CFR 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 CFR 122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR 122.22(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 CFR 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Central Valley Water Board. (40 CFR 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 CFR 122.41(l)(4)(iii).)

D. Compliance Schedules

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

E. Two-Hour and Twenty-Four Hour Reporting

1. The Discharger shall notify the Office of Emergency Services any noncompliance that may endanger health or the environment within 2-hours from the time the Discharger becomes aware of the circumstances. Any information shall be provided by telephone or fax within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR 122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 CFR 122.41(l)(6)(ii)):
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR 122.41(l)(6)(ii)(A).)
 - b. Any upset that exceeds any effluent limitation in this Order. (40 CFR 122.41(l)(6)(ii)(B).)
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 CFR 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 CFR 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b) (40 CFR 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 CFR 122.41(l)(1)(ii).)

The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are

subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 CFR 122.41(l)(1)(ii).)

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 CFR 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 CFR 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Central Valley Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 CFR 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

- A.** The Central Valley Water Board is authorized to enforce the terms of this permit 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 CFR 122.42(a)):

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

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Table of Contents

I.	General Monitoring Provisions.....	E-2
II.	Monitoring Locations	E-3
III.	Influent Monitoring Requirements.....	E-4
	A. Monitoring Location INF-001.....	E-4
IV.	Effluent Monitoring Requirements	E-4
	A. Monitoring Location EFF-001.....	E-4
V.	Whole Effluent Toxicity Testing Requirements – Not applicable.....	E-5
VI.	Land Discharge Monitoring Requirements – Not applicable.....	E-5
VII.	Reclamation Monitoring Requirements – Not applicable	E-5
VIII.	Receiving Water Monitoring Requirements	E-5
	A. Surface Water Monitoring – Not applicable.....	E-5
	B. Groundwater Monitoring	E-5
IX.	Other Monitoring Requirements.....	E-6
	A. Monitoring Location – PND-001	E-6
X.	Reporting Requirements.....	E-7
	A. General Monitoring and Reporting Requirements.....	E-7
	B. Self Monitoring Reports (SMRs)	E-8
	C. Discharge Monitoring Reports (DMRs) – Not Applicable	E-10
	D. Other Reports	E-10

List of Tables

Table E-1.	Monitoring Station Locations	E-3
Table E-2.	Effluent Monitoring	E-4
Table E-3.	Groundwater Monitoring.....	E-5
Table E-4.	Pond Monitoring	E-6
Table E-5.	Monitoring Periods and Reporting Schedule	E-8

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Title 40 of the Code of Federal Regulations (CFR), section 122.48 (40 CFR 122.48) requires that all NPDES permits specify monitoring and reporting requirements. California Water Code (CWC) sections 13267 and 13383 also authorize the 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 the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A.** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Regional 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 of any material required by this Order shall be conducted by a laboratory certified for such analyses by the Department of Public Health (DPH; formerly the Department of Health Services). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Regional Water Board. In the event a certified laboratory is not available to the Discharger for any onsite field measurements such as pH, turbidity, temperature and residual chlorine, such 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 for any onsite field measurements such as pH, turbidity, temperature and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Regional Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board.
- D.** 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, at least yearly, to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.
- E.** Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

- F. 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.
- G. The Discharger shall conduct analysis on any sample provided by USEPA as part of the Discharge Monitoring Quality Assurance (DMQA) program. The results of any such analysis shall be submitted to USEPA's DMQA manager.
- H. The Discharger shall file with the Regional Water Board technical reports on self-monitoring performed according to the detailed specifications contained in this Monitoring and Reporting Program.
- I. The results of all monitoring required by this Order shall be reported to the Regional 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

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
	INF-001	Representative sample of supply water from supply wells after initial treatment through the degassing/aeration tower.
001	EFF-001	Representative sample of total effluent wastewater flow after all treatment operations, at the last connection prior to discharge from Discharge Point No. 001
	MW-01	Groundwater monitoring well (See Attachment C for location designated as "MW1")
	MW-02	Groundwater monitoring well (See Attachment C for location designated as "MW2")
	MW-03	Groundwater monitoring well (See Attachment C for location designated as "MW3")
	MW-04	Groundwater monitoring well (See Attachment C for location designated as "MW4")
--	PND-001	Location where a representative sample of wastewater can be collected in the U-Shaped Treatment Pond

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor the process supply water obtained from two wells located in the southeast corner of the Facility. Monitoring of this source water shall be conducted after treatment in the degassing/aeration tower at Monitoring Location INF-001 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	standard units	Grab	1/Year	1
Aluminum, Total Recoverable	µg/L	Grab	1/Year	1,2
Electrical Conductivity @ 25 Deg. C	µmhos/cm	Grab	1/Year	1
Iron, Total Recoverable	µg/L	Grab	1/Year	1
Manganese, Total Recoverable	µg/L	Grab	1/Year	1
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Year	1
Total Dissolved Solids	mg/L	Grab	1/Year	1

¹ Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

² Monitoring for aluminum can be reported as either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry analysis methods, as supported by USEPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.)

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor aquaculture wastewater at Monitoring Location EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	1
pH	standard units	Grab	1/Week	1,3
Total Suspended Solids	mg/L	Grab	1/Week	1
Temperature	°F	Grab	1/Week	1,3

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	1/Week	1
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Week	1
Settleable Solids	ml/L	Grab	1/Month	1
Electrical Conductivity @ 25 Deg. C	µmhos/cm	Grab	1/Month	1
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	Grab	1/Quarter	1
Aluminum, Total Recoverable	µg/L	Grab	1/Quarter	1,2
Iron, Total Recoverable	µg/L	Grab	1/Quarter	1
Manganese, Total Recoverable	µg/L	Grab	1/Quarter	1
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Quarter	1
Total Dissolved Solids	mg/L	Grab	1/Quarter	1
Chloride	mg/L	Grab	1/Quarter	1

¹ Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136.

² Monitoring for aluminum can be reported as either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry analysis methods, as supported by USEPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.)

³ pH and temperature shall be recorded at the time of ammonia sample collection.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS – NOT APPLICABLE

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Surface Water Monitoring – Not applicable

B. Groundwater Monitoring

1. Monitoring Locations MW-1, MW-2, MW-3, MW-4

- a. Prior to construction and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for Executive Officer's approval. Once installed, all new wells shall be added to the monitoring network (which currently consists of groundwater monitoring wells MW-1, MW-2, MW-3, and MW-4), and shall be sampled and analyzed according to the schedule below. Water table

elevations shall be calculated to determine groundwater gradient and direction of flow.

Prior to sampling, the groundwater elevations shall be measured and the wells shall be purged of at least three well volumes until, temperature, pH, and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Samples shall be collected and analyzed using standard USEPA methods. Groundwater monitoring shall include, at minimum the following:

Table E-4. Groundwater Monitoring

Constituent/Parameter	Units	Type of Sample	Frequency	Required Analytical Test Method
Depth to Groundwater	Measured to 0.01 foot	Measured	2/Year ¹	--
Groundwater Elevation	Above mean sea level, to 0.01 foot	Calculated	2/Year ¹	--
Groundwater Direction	Degrees	Calculated	2/Year ¹	--
pH	pH Units	Grab	2/Year ¹	2
Total Nitrogen	mg/L	Grab	2/Year ¹¹	2
Nitrate Nitrogen	mg/L	Grab	2/Year ¹	2
Total Ammonia as N	mg/L	Grab	2/Year ¹	2

¹ April and October.

² Parameters shall be analyzed using the analytical methods described in 40 CFR Part 136

IX. OTHER MONITORING REQUIREMENTS

A. Monitoring Location – PND-001

1. The Discharger shall monitor wastewater in the treatment pond at Monitoring Location PND-001 as follows:

Table E-5. Pond Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Freeboard	ft.	Measure	1/Week	
pH	standard units	Grab	1/Month	2
Dissolved Oxygen	mg/L	Grab	1/Month	2
Total Nitrogen	mg/L	Grab	2/Year ¹	2
Nitrate Nitrogen	mg/L	Grab	2/Year ¹	2
Total Ammonia as N	mg/L	Grab	2/Year ¹	2

¹ April and October.

² Parameters shall be analyzed using the analytical methods described in 40 CFR Part 136.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. 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.
4. **Groundwater Reporting Requirements.** Groundwater monitoring reports shall be submitted twice per year under separate cover to the Central Valley Water Board. The Quarterly Report shall include the following:
 - a. Tabular summary of groundwater monitoring results.
 - b. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum.
 - c. An assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends, if any.
 - d. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable).
 - e. A comparison of the monitoring data during the reporting period to numerical groundwater limitations in the WDRs and an explanation of any exceedances of limitations.
 - f. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring (reference to previous submitted report(s) describing standard sampling procedures is acceptable).
 - g. Field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged.
 - h. Summary data tables of historical and current water table elevations and analytical results.
 - i. Copies of laboratory analytical report(s) for groundwater monitoring.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State Water Board or the 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.
2. 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 monthly 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.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-6. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
1/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Month	Permit effective date	First day of calendar month through last day of calendar month	30 days from the end of the monitoring period
1/Quarter	Permit effective date	1 January through 1 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	30 days from the end of the monitoring period
2/Year	Permit effective date	1 January through 30 June 1 July through 31 December	30 days from the end of the monitoring period
1/Year	Permit effective date	1 January through 31 December	30 days from the end of the monitoring period

4. **Reporting Protocols.** The Discharger shall report with each sample result the applicable reported Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR Part 136.

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

- e. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- f. 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 as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

- g.** Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
 - h.** Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
- 5. Multiple Sample Data.** When determining compliance with an AMEL, AWEL, 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.
- 6.** 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. 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.
 - i. Annual Average Limitations.** For constituents with effluent limitations specified as "calendar annual average" (iron) the Discharger shall report the calendar annual average in the December SMR. The calendar annual average

shall be calculated as the average of the monthly averages for the calendar year.

- ii. **Mass Loading Limitations.** For ammonia, the Discharger shall calculate and report the mass loading (lbs/day) in the SMRs. The mass loading shall be calculated as follows:

$$\text{Mass Loading (lbs/day)} = \text{Flow (MGD)} \times \text{Concentration (mg/L)} \times 8.34$$

When calculating daily mass loading, the daily average flow and constituent concentration shall be used. For weekly average mass loading, the weekly average flow and constituent concentration shall be used. For monthly average mass loading, the monthly average flow and constituent concentration shall be used.

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

Regional Water Quality Control Board
Central Valley Region
NPDES Compliance and Enforcement Unit
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670-6114

C. Discharge Monitoring Reports (DMRs) – Not Applicable

D. Other Reports

1. **Within 60 days of permit adoption**, the Discharger shall submit a report outlining minimum levels, method detection limits, and analytical methods for approval, with a goal to achieve detection levels below applicable water quality criteria. At a minimum, the Discharger shall comply with the monitoring requirements for CTR constituents as outlined in section 2.3 and 2.4 of the SIP.
2. **Annual Solids Disposal Report.** An annual solids disposal report shall be submitted with annual self-monitoring reports. The report shall describe the annual volume of solids generated by the Facility and specify the disposal practices. Solids include collected screenings, sludges, and other solids, including fish carcasses, but not including harvested water hyacinths and duckweed.
3. **Annual Drug and Chemical Use Report.** The information listed below shall be submitted for all aquaculture drugs or chemicals used at the Facility, as allowed by this Order. This information shall be reported at annual intervals and submitted with

the annual self-monitoring reports using the drug and chemical usage report table found in Attachment I of this Order. At such time as the Discharger is required to begin submitting self-monitoring reports electronically, it shall submit the annual drug and chemical use reports as an attachment.

- a.** The name(s) and active ingredient(s) of the drug or chemical.
- b.** The date(s) of application.
- c.** The purpose(s) for the application.
- d.** 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 in cubic feet per second (cfs) in the treatment units.
- e.** The total flow through the Facility in cubic feet per second (cfs) to the receiving water after mixing with the treated water.
- f.** 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.
- g.** The method of disposal for drugs or chemicals used but not discharged in the effluent.

ATTACHMENT F – FACT SHEET

Table of Contents

I.	Permit Information	F-3
II.	Facility Description	F-4
	A. Description of Wastewater and Biosolids Treatment or Controls	F-5
	B. Discharge Points and Receiving Waters.....	F-6
	C. Summary of Historical Requirements and Self-Monitoring Report (SMR) Data	F-6
	D. Compliance Summary.....	F-6
	E. Planned Changes – Not applicable.....	F-7
III.	Applicable Plans, Policies, and Regulations.....	F-7
	A. Legal Authorities	F-7
	B. California Environmental Quality Act (CEQA)	F-7
	C. State and Federal Regulations, Policies, and Plans	F-7
	D. Impaired Water Bodies on CWA 303(d) List	F-8
	E. Other Plans, Policies and Regulations – Not applicable.....	F-8
IV.	Rationale For Effluent Limitations and Discharge Specifications.....	F-8
	A. Discharge Prohibitions	F-10
	B. Technology-Based Effluent Limitations.....	F-10
	1. Scope and Authority.....	F-10
	2. Applicable Technology-Based Effluent Limitations	F-12
	C. Water Quality-Based Effluent Limitations (WQBELs).....	F-12
	1. Scope and Authority.....	F-12
	2. Applicable Beneficial Uses and Water Quality Criteria and Objectives	F-13
	3. Determining the Need for WQBELs	F-15
	4. WQBEL Calculations	F-23
	5. Whole Effluent Toxicity (WET)	F-24
	D. Final Effluent Limitations.....	F-25
	1. Mass-based Effluent Limitations	F-25
	2. Averaging Periods for Effluent Limitations	F-25
	3. Satisfaction of Anti-Backsliding Requirements.....	F-25
	4. Satisfaction of Antidegradation Policy.....	F-27
	5. Stringency of Requirements for Individual Pollutants.....	F-27
	E. Interim Effluent Limitations – Not applicable	F-27
	F. Land Discharge Specifications – Not applicable	F-27
	G. Reclamation Specifications – Not applicable	F-27
V.	Rationale for Receiving Water Limitations	F-27
	A. Surface Water.....	F-28
	B. Groundwater	F-28
VI.	Rationale for Monitoring and Reporting Requirements.....	F-28
	A. Influent Monitoring	F-29
	B. Effluent Monitoring.....	F-29
	D. Receiving Water Monitoring.....	F-29
	1. Surface Water.....	F-29
	2. Groundwater	F-30

- E. Other Monitoring Requirements F-30
- VII. Rationale for Provisions F-31
 - A. Standard Provisions F-31
 - B. Special Provisions..... F-31
 - 1. Reopener Provisions..... F-31
 - 2. Special Studies and Additional Monitoring Requirements..... F-32
 - 3. Best Management Practices and Pollution Prevention F-32
 - 4. Construction, Operation, and Maintenance Specifications..... F-33
 - 5. Special Provisions for Municipal Facilities (POTWs Only) – Not applicable..... F-33
 - 6. Other Special Provisions..... F-33
 - 7. Compliance Schedules – Not applicable..... F-34
- VIII. Public Participation F-34
 - A. Notification of Interested Parties F-34
 - B. Written Comments F-34
 - C. Public Hearing F-34
 - D. Waste Discharge Requirements Petitions..... F-35
 - E. Information and Copying..... F-35
 - F. Register of Interested Persons F-35
 - G. Additional Information F-35

List of Tables

- Table F-1. Facility Information F-3
- Table F-2. Historic Effluent Limitations and Monitoring Data F-6
- Table F-3. Summary of Technology-based Effluent Limitations Discharge Point No. 001 F-12
- Table F-4. Basin Plan Beneficial Uses F-14
- Table F-5. Summary of Final Effluent Limitations Discharge Point No. 001 F-25

ATTACHMENT F – FACT SHEET

As described in the Findings in Section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	5B34NP00009
Discharger	TNC Holding Company, LLC, and the Ralph F. Nix Revocable Trust
Name of Facility	TNC Holding Company Caviar Sturgeon Farm, Wilton
Facility Address	10822 Gay Road
	Wilton, CA 95693
	Sacramento County
Facility Contact, Title and Phone	Steve Wheeler, Farm Manager, 916-544-2464
Authorized Person to Sign and Submit Reports	Tom Trauger, General Manager, 415-543-3007
Mailing Address	60 Dorman Avenue San Francisco, CA 94124
Billing Address	Same as mailing address
Type of Facility	Concentrated Aquatic Animal Production/ Fish Hatchery (CAAP Facility), SIC Codes 0921 and 0273
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Pretreatment Program	Not applicable
Reclamation Requirements	Not applicable
Facility Permitted Flow	3.1 million gallons per day
Facility Design Flow	Not applicable
Watershed	North Valley Floor Hydrologic Unit
Receiving Water	Unnamed tributary of Cosumnes River
Receiving Water Type	Inland surface water

- A.** TNC Holding Company, LLC is the owner and operator of the TNC Holding Company Caviar Sturgeon Farm (Facility), formerly the Tsar Nicoulai Caviar Sturgeon Farm, having acquired through foreclosure in January 2011 the personal property assets and business of Tsar Nicoulai Caviar, LLC. The Ralph F. Nix 1995 Revocable Trust owns 5-acres of the property at 10822 Gay Road, Wilton, California on which the Facility’s

treatment pond is located. Title to the remaining 10 acres on which the Facility is located remains in Tsar Nicoulai Caviar, LLC, subject to a deed of trust in favor of TNC Holding Company, LLC, to secure additional indebtedness of the prior operator to TNC Holding Company, LLC. Together TNC Holding Company, LLC, and the Ralph F. Nix 1995 Revocable Trust are hereinafter referred to as Discharger. TNC Holding Company, LLC, is responsible for maintaining compliance with this Order. The Ralph F. Nix 1995 Revocable Trust is not responsible for the Facility's operations or the discharge to surface waters. The Ralph F. Nix 1995 Revocable Trust is also not responsible for the solids drying beds on the parcels it owns; however, it is ultimately responsible if enforcement actions against TNC Holding Company, LLC, are ineffective or would be futile, or if enforcement is necessary to protect public health or the environment. This Order includes provision that will allow the Central Valley Water Board to re-open this Order should the sole ownership of the Facility property be transferred to TNC Holding Company, LLC.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- B.** The Facility discharges wastewater to a Sacramento County drainage ditch, which discharges to an unnamed tributary of the Cosumnes River, a water of the United States, and is currently regulated by Order R5-2005-0080 which was adopted on 25 June 2005 and expired on 1 June 2010. The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.
- C.** The prior discharger/operator of the Facility filed a report of waste discharge (ROWD) and submitted an application for renewal of its WDRs and NPDES permit on 11 December 2009. Supplemental information was requested on 2 August 2010 and received on the same date. Pre-permitting site visits were conducted on 7 December 2010 and 29 March 2011.

II. FACILITY DESCRIPTION

The Facility is located approximately 0.8 miles southwest of Wilton, California (Sacramento County) within Assessor's Parcel Numbers (APNs) 134-0173-013 and 134-0173-014, as shown in Attachment B. TNC Holding Company, LLC, uses and occupies 10 acres owned by the former operator, Tsar Nicoulai Caviar, LLC, subject to a deed of trust in favor of TNC Holding Company, LLC; and TNC Holding Company, LLC leases the additional adjacent five acres from the Ralph F. Nix 1995 Revocable Trust on which the Facility's treatment pond is located.

According to the prior Discharger's ROWD, the Facility raises white sturgeon (*Acipenser transmontanus*) for sale as fresh and smoked meat, and for caviar. The Facility, while under the ownership and control of the prior operator, reported production of 210,000 pounds of white sturgeon in 2009, with approximately 22,000 pounds of food used during

the month of maximum feeding (August). Under the NPDES program, the Facility is considered a concentrated aquatic animal production (CAAP) facility.

The wastewater discharges from the Facility include unused food, fish excrement, and algae. The Discharger currently uses sodium chloride (salt) and hydrogen peroxide to control fish infections from surface abrasions and the spread of fish disease. According to the ROWD the Discharger does not currently use or plan to use any other aquaculture chemicals or drugs in its operations.

A. Description of Wastewater and Biosolids Treatment or Controls

Process supply water is obtained from two wells located in the southeast corner of the Facility. The combined capacity of the two process supply wells is 890 gallons per minute. The supply water passes through a degassing/aeration tower before it is mixed with process re-circulation water and fed to the fish tanks. Up to 90 percent, on a long-term basis, of the Facility's process wastewater will be re-circulated.

Facility source water from the degassing/aeration tower flows to a return canal where it mixes with re-circulated wastewater. The water is then pumped through an underground distribution matrix to eighteen 50-ft diameter lined steel grow-out tanks. Wastewater from the grow-out tanks, containing fish excrement and unused food, is discharged to a drainage canal to three large drum filters to remove particulates down to 60 micrometers. Sludge from the drum filters is collected in four settlement tanks configured in series. After filtration, wastewater is channeled through a 2.7 million gallon, U-shaped pond containing aquatic vascular vegetation for direct nutrient uptake and settling. Residual ammonia and dissolved organics are removed by a media based biofiltration system placed within the U-shaped pond. During short periods when the drum filters are offline for repair or maintenance, wastewater can directly enter the U-shaped pond, where solids will settle to the bottom and eventually be degraded. While the drum filters do improve the treatment performance of the ponds, they are not a critical treatment component for permit compliance. The treatment pond has proven to be capable of adequately treating the solids and/or meeting the permit requirements during periods when the drum filters are offline for brief periods during filter maintenance. Treated wastewater from the pond is routed to the return canal. From the return canal water can be directed through two post treatment ponds (#1 and #2) for further nutrient removal and temperature modification prior to being re-circulated to the return canal. Water can also be pumped from the return canal into the distribution matrix where it is sent back to the fish tanks as described above. . Water is discharged from the distribution matrix described above on an as-needed basis to control system water level and temperature in the grow-out tanks.

Less than 300 pounds per day of solid waste is accumulated through the filtration system and is dewatered in four plastic settlement tanks. After dewatering, the sludge collected in the filtration system, as well as other process solids (like fish carcasses), are transported off-site to a disposal facility (either a permitted landfill or land application site).

Water hyacinths and duckweed (500,000 lbs) harvested from the treatment pond are currently dried on-site in a 2,500 square foot unlined drying bed located on a 2 acre parcel of the Facility’s farm adjacent to the return canal (see Attachment C). Runoff from this drying area is directed to the return canal and receives treatment in the pond system. The Discharger is in the process of constructing a second unlined drying bed for plant material harvested from the treatment ponds at the south-east corner of the Facility (see Attachment C). The runoff from this drying area will be directed to an onsite basin. After drying, the harvested plant material is land applied in accordance with the Best Management Practices Plan.

B. Discharge Points and Receiving Waters

Treated wastewater from the Facility is discharged through Discharge Point No. 001, into a Sacramento County drainage ditch along the south side of Gay Road. Once offsite, wastewater flow continues along the natural storm drainage route, and discharges to an unnamed tributary of the Cosumnes River and is ultimately discharged to the Cosumnes River at a point latitude 38° 24’ 03” N and longitude 121° 16’ 53” W.

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

Effluent limitations contained in Order R5-2005-0080 for discharges from Discharge Point No. 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order No R5-2005-0080 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow	mgd	1.2	-	3.1	0.518	-	0.762
Iron, Total	µg/L	300	-	-	620	-	620
Manganese, Total	µg/L	50	-	-	97	-	97
Nitrate Nitrogen	mg/L	10	-	-	8.9	-	8.9
Ammonia, Total	mg/L	0.59	-	-	0.68	-	0.68
Electrical Conductivity	µmhos/cm	700	-	-	330	-	330
pH	standard units	6.5 – 8.5			6.64 – 7.94		

D. Compliance Summary

The Central Valley Water Board issued three Administrative Civil Liability (ACL) Complaints against the prior Discharger/owner during the previous permit term. The current Discharger is not responsible or liable for the violations addressed in the ACL complaints. ACL Complaint R5-2008-0575 recorded two effluent limitation violations, and determined one to

be a serious violation (violation of iron limitation) and assessed a mandatory minimum penalty of \$3,000. ACL Complaint R5-2009-0517 recorded three effluent limitation violations, and determined one (violation of iron limitation) to be a serious violation and assessed a mandatory minimum penalty of \$3,000. ACL Complaint R5-2010-0511 recorded seven effluent limitation violations, and determined two to be serious violations (violation of iron limitation) and five to be non-serious violation (violation of ammonia and manganese limitations) and assessed a mandatory minimum penalty of \$12,000.

E. Planned Changes – Not applicable

III. 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 II of this Order. The applicable plans, policies, and regulations relevant to the discharge include the following:

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

This Order meets the requirements of CEQA as specified in the Finding contained at section II.E of this Order.

C. State and Federal Regulations, Policies, and Plans

- 1. Water Quality Control Plans.** This Order implements the following water quality control plans as specified in the Finding contained at section II.H of this Order.
 - a. *Water Quality Control Plan, Fourth Edition (Revised September 2009), for the Sacramento and San Joaquin River Basins* (Basin Plan)**
- 2. National Toxics Rule (NTR) and California Toxics Rule (CTR).** This Order implements the NTR and CTR as specified in the Finding contained at section II.I of this Order.
- 3. State Implementation Policy (SIP).** This Order implements the SIP as specified in the Finding contained at section II.J of this Order.
- 4. Alaska Rule.** This Order is consistent with the Alaska Rule as specified in the Finding contained at section II.L of this Order.
- 5. Antidegradation Policy.** As specified in the Finding contained at section II.N of this Order and as discussed in detail in the Fact Sheet (Attachment F, Section IV.D.4.), the discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board (State Water Board) Resolution 68-16.

- 6. Anti-Backsliding Requirements.** This Order is consistent with anti-backsliding policies as specified in the Finding contained at section II.O of this Order. Compliance with the anti-backsliding requirements is discussed in the Fact Sheet (Attachment F, Section IV.D.3).
- 7. Storm Water Requirements.** USEPA promulgated federal regulations for storm water on 16 November 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program does not regulate storm water discharges from Concentrated Aquatic Animal Production Facilities or Fish Hatcheries.
- 8. Endangered Species Act.** This Order is consistent with the Endangered Species Act as specified in the Finding contained at section II.P of this Order.

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 12 November 2010 USEPA gave partial approval to California's 2010 section 303(d) List of Water Quality Limited Segments. The Basin Plan references 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 CFR Part 130, et seq.)*." The Basin Plan also states, "*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.*" The unnamed tributary of the Cosumnes River is not listed as an impaired water body, however, the Cosumnes River is listed as impaired due to exotic species.
- 2. Total Maximum Daily Loads (TMDLs).** USEPA requires the Central Valley Water Board to develop TMDLs for each 303(d) listed pollutant and water body combination. A TMDL for exotic species in the Cosumnes River is scheduled for development in 2019.
- 3.** The 303(d) listings and TMDLs have been considered in the development of the Order. The receiving water for this discharge is not listed as impaired and no applicable wasteload allocations have been developed for the receiving water.

E. Other Plans, Polices and Regulations – Not applicable

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

The CWA 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 U.S.C., §1311(b)(1)(C); 40 CFR 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 CFR 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 CFR 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 dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 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 Plan at page IV-17.00 contains 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 CFR 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) USEPA’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 CFR 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: *“All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.”* (Basin Plan at III-8.00.) The Basin Plan states 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 Plan further states 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. As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 CFR 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 CFR 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Central Valley Water Board’s prohibition of bypasses, the State Water Board adopted a precedential decision, Order WQO 2002-0015, which cites the federal regulations, 40 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation, provided that the bypass does not cause violation of effluent and/or receiving water limitations.
2. Fish raised in CAAP facilities may become vulnerable to disease and parasite infestations. Various aquaculture drugs and chemicals may be 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 may be used to treat fish for parasites, fungal growths and bacterial infections. Also, aquaculture drugs and chemicals are sometimes used to anesthetize fish prior to spawning or “tagging” processes. The Discharger confirmed in the ROWD submittal and its comments on the tentative Order, that salt and hydrogen peroxide are the only chemical additives that will be used at the Facility. Hydrogen peroxide will readily decompose into water and oxygen. Therefore, this Order prohibits the use and discharge of aquaculture drugs and chemicals, other than salt and hydrogen peroxide, from the Facility without first submitting a ROWD and receiving a permit authorizing the discharge from the Central Valley Water Board.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Effluent Limitations Guidelines and Standards for the Concentrated Aquatic Animal Production Point Source Category in 40 CFR Part 451, and as defined in 40 CFR 122.24.

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

- a. Best practicable treatment control technology (BPT) represents the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.
- b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.
- c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including 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.
- d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires USEPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. CWA section 402(a)(1) and 40 CFR 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the permit writer must consider specific factors outlined in 40 CFR 125.3.

On 23 August 2004 USEPA published Effluent Limitation Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Point Source Category. These ELGs 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 its proposed rule, published on 12 September 2002, USEPA proposed to establish numeric limitations for a single constituent – total suspended solids (TSS) – while controlling the discharge of other constituents through narrative requirements. In the final rule, however, USEPA determined that, for a nationally applicable regulation, it would be more appropriate to promulgate qualitative TSS limitations in the form of solids control best management practices (BMP) requirements. Furthermore, the final ELG does not include numeric effluent limitations for non-conventional and toxic constituents, such as aquaculture drugs and chemicals, but also relies on narrative limitations to address these constituents. The final ELG applies to CAAP facilities that produce, hold or contain 100,000 pounds or more of aquatic animals per year (any 12 month period). The Discharger’s facility is therefore subject to ELG requirements.

2. Applicable Technology-Based Effluent Limitations

- a. **TSS.** USEPA’s final ELG for the aquaculture industry does 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 ELG. To comply with the ELG, this Order includes a narrative effluent limitation that requires the Discharger to minimize the discharge of TSS through implementing BMPs established in compliance with the Special Provision contained in section VI.C.3 of this Order.

Based on effluent samples , from July 2006 to September 2010, the minimum, maximum and average TSS for the discharge was reported as non-detect, 10 mg/l, and 23 mg/l, respectively. These results indicate the Discharger is continuing to implement the BMPs to prevent or minimize the discharge of TSS to the waters of the State. Therefore, the Discharger’s current BMPs for TSS are considered adequate.

- b. **Flow.** This Order contains a maximum daily effluent discharge flow limitation of 3.1 mgd and an average monthly effluent discharge flow limitation of 1.2 mgd based on review of flow data during the previous permit term and consistent with Order R5-2005-0080.

Table F-3. Summary of Technology-based Effluent Limitations Discharge Point No. 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	1.2		3.1	-	-
TSS	mg/L	1				

¹ The Discharger shall minimize the discharge of TSS through implementing BMPs established in compliance with Special Provision VI.C.3 of this Order.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

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

40 CFR 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric

water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

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

The Basin Plan on page II-1.00 states: *“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 CFR 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. Section 131.3(e), 40 CFR, 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 CFR section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

- a. **Receiving Water and Beneficial Uses.** The Facility discharges into the Sacramento County stormwater system then to an unnamed tributary of the Consumnes River before then discharging to the Consumnes River itself.

The Basin Plan at II-2.00 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan

does not specifically identify beneficial uses for unnamed tributary of the Consumnes River but does identify present and potential uses for the Consumnes River, to which the unnamed tributary of the Consumnes River is tributary. Thus, beneficial uses applicable to the unnamed tributary of the Consumnes River are as follows:

Table F-4. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Uses
001	Unnamed Tributary of the Consumnes River	<u>Existing:</u> Municipal and domestic supply (MUN); agricultural supply, including irrigation and stock watering (AGR); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); cold freshwater habitat (COLD); migration of aquatic organisms, warm and cold (MIGR); spawning, reproduction, and/or early development, warm and cold (SPWN); and wildlife habitat (WILD).

- b. Effluent and Ambient Background Data.** The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on effluent data submitted in SMRs and obtained during compliance inspections.
- c. Hardness-Dependent CTR Metals Criteria.** The *California Toxics Rule* and the *National Toxics Rule* contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc.

This Order has established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP¹, the CTR² and State Water Board Order WQO 2008-0008 (City of Davis). The SIP and the CTR require the use of “receiving water” or “actual ambient” hardness, respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 CFR § 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 Central Valley Water Board thus has considerable discretion in determining ambient hardness (*Id.*, p.10.).

¹ 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.

² The CTR requires that, for waters with a hardness of 400 mg/L (as CaCO₃), 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.

The reasonable worst-case receiving water condition is when there is zero receiving water flow. Therefore, the effluent dominated condition represents the reasonable worst-case condition for determining the downstream receiving water hardness for calculating the CTR hardness-dependent metals criteria. The downstream hardness under this condition is represented by the lowest observed effluent hardness value, which was utilized in calculating the criteria values for hardness dependent metals.

d. Assimilative Capacity/Mixing Zone

The receiving water body is an unnamed tributary of the Cosumnes River that flows through neighboring properties, and is utilized in a private pond. The Central Valley Water Board finds that based on the available information and on the Discharger's application, that unnamed tributary of the Cosumnes River, absent the discharge, is an ephemeral stream. The ephemeral nature of the unnamed tributary of the Cosumnes River means that the designated beneficial uses must be protected, but that no credit for receiving water dilution is available. Although the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. At other times, natural flows within the unnamed tributary of the Cosumnes River help support the aquatic life. Both conditions may exist within a short time span, where the unnamed tributary of the Cosumnes River would be dry without the discharge and periods when sufficient background flows provide hydraulic continuity with the Cosumnes River. Dry conditions occur primarily in the summer months, but dry conditions may also occur throughout the year, particularly in low rainfall years. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water quality goals and aquatic life. Therefore, the Central Valley Water Board has evaluated the need for water quality-based effluent limitations for pollutants without benefit of dilution in this Order. These water quality-based effluent limitations are based on the application of water quality criteria or objectives at the point of discharge (Discharge Point No. 001).

3. Determining the Need for WQBELs

- a. The Central Valley Water Board conducted the RPA in accordance with section 1.3 of the SIP. Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that the Central Valley Water Board may use the SIP as guidance for water quality-based toxics control.³ 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

¹ ³ See Order WQO 2001-16 (Napa) and Order WQO 2004-0013 (Yuba City).

programs. Effluent data from January 2007 – December 2009 were used to conduct the RPA.

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

i. Aluminum

- (a) WQO.** Absent numeric aquatic life criteria for aluminum, WQBELs are based on the narrative toxicity objective. The Basin Plan's Policy for Application of Water Quality Objectives requires the Central Valley Water Board to consider, "on a case-by-case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations. In considering such criteria, the Board evaluates whether the specific numerical criteria which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective." Relevant information includes, but is not limited to, USEPA recommended criteria. (Basin Plan, p. IV.-17.00; see also, 40 CFR 122.44(d)(vi).)

The Central Valley Water Board considered all available material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations, the USEPA National Recommended Ambient Water Quality Criteria (NAWQC) and supporting studies, National Recommended Water Quality Criteria–Correction, the Arid West Water Quality Research Project and supporting studies, and site-specific aluminum studies conducted by other dischargers within the Central Valley Region in evaluating the appropriate criteria for protection of the beneficial uses of the Cosumnes River, and the unnamed tributary to the Cosumnes River to comply with the narrative toxicity objective.

Footnote L to the National Recommended Ambient Water Quality Criteria Correction (1999) summary table for aluminum indicates that the chronic aquatic life criterion is based on studies conducted under specific receiving water conditions with a low pH (6.5 to 6.6 pH units) and low hardness (<10 mg/L as CaCO₃). USEPA advises that a water effects ratio may be more appropriate to better reflect the actual toxicity of aluminum to aquatic organisms. Monitoring data demonstrates that these conditions are not similar to those in the Cosumnes River, which consistently has an upstream hardness concentrations ranging from 19 to 52 mg/L (as CaCO₃) and the pH ranging from 6.6 – 7.9 s.u. Thus, it is unlikely that

application of the chronic criterion of 87 µg/L is necessary to protect aquatic life in Cosumnes River. Furthermore, the effluent hardness ranges from 60 to 96 mg/L (as CaCO₃) and the pH ranges from 6.64 -7.94 s.u., so the application of the chronic criterion of 87 µg/L is unlikely to be necessary to protect aquatic life in the effluent dominated unnamed tributary to the Cosumnes River as well.

Aluminum toxicity studies and water effects ratio studies^{4 5 6 7} have been performed in several Central Valley waters that demonstrate the application of the chronic criterion of 87 µg/L is not necessary to protect aquatic life.

Based on the above information, the acute (1-hour) and chronic (4-day average) aquatic life criteria for aluminum are 750 µg/L. These criteria interpret the narrative toxicity objective using best professional judgment and are protective of the aquatic life beneficial use. The Department of Public Health (DPH) established a secondary Maximum Contaminant Level - Consumer Acceptance Limit (MCL) for aluminum for the protection of the MUN beneficial use at 200 µg/L that implements the Basin Plan's narrative chemical constituents objective.

(b) RPA Results. The maximum effluent concentration (MEC) for aluminum was 220 µg/L, and the maximum annual average effluent concentration of aluminum was 160 µg/L. Therefore, aluminum in the discharge does not have a reasonable potential to cause or contribute to an in-stream excursion above the narrative chemical constituents objective and the narrative toxicity objective. Based on 13 data points from January 2007 through December 2009, the effluent aluminum data ranged from non-detect to 220 µg/L. A sample collected in December 2009 was measured at 600 µg/L, however, this sample is considered an outlier and was not used in the RPA. The average and standard deviation of the data was 76 µg/L and 59 µg/L, respectively. Therefore, the one sample measuring 600 µg/L was nearly 8 standard deviations from the mean, which is clearly an outlier and not representative of the effluent.

ii. Manganese

(a) WQO. The Basin Plan includes a water quality objective that “...*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) specified in the following provisions of Title 22 of the California Code of Regulations...Tables 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) and 64449-B*

⁴ City of Modesto, Aluminum Water Effect Ratio Study Plan (November 2005)...

⁵ City of Yuba City, Aluminum Water Effect Ratio Study Plan (January 2007)

⁶ City of Manteca, Aluminum Water Effect Ratio Study (March 2007)

⁷ City of Auburn, Aluminum Toxicity Study (November 2010)

...

(Secondary Maximum Contaminant Levels-Ranges) of Section 64449.” Municipal and domestic supply is a beneficial use of the Receiving Water. DPH established a secondary Maximum Contamination Limit (MCL) of 50 µg/L for manganese which is protective of the Basin Plan’s WQO and is applied as an annual average.

(b) RPA Results. Based on monthly effluent monitoring data from 2007 to 2009, the maximum running annual average for manganese was 32 µg/L. Therefore, the discharge does not have reasonable potential to cause or contribute to an exceedance of the applicable water quality objective in the receiving water.

iii. Salinity (EC)

(a) WQO. There are no USEPA water quality criteria for the protection of aquatic organisms for electrical conductivity (EC), total dissolved solids (TDS), sulfate, and chloride. The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for EC, TDS, sulfate, and chloride.

Table F-4. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Goal ¹	Secondary MCL ³	Effluent	
			Average	Maximum
EC (µmhos/cm)	Varies ²	900, 1600, 2200	242	330
TDS (mg/L)	Varies	500, 1000, 1500	188	360
Sulfate (mg/L)	Varies	250, 500, 600	8.5	8.5
Chloride (mg/L)	Varies	250, 500, 600	6.2	15

¹ Agricultural water quality goals based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985)

² The EC level in irrigation water that harms crop production depends on the crop type, soil type, irrigation methods, rainfall, and other factors. An EC level of 700 umhos/cm is generally considered to present no risk of salinity impacts to crops. However, many crops are grown successfully with higher salinities.

³ 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 recommended agricultural water quality goal for chloride, that would apply the narrative chemical constituent objective, is 106 mg/L as a long-term average based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 106 mg/L water quality goal is intended to protect against adverse effects on sensitive crops when irrigated via sprinklers.

(2) Electrical Conductivity. The secondary MCL for EC is 900 $\mu\text{mhos/cm}$ as a recommended level, 1600 $\mu\text{mhos/cm}$ as an upper level, and 2200 $\mu\text{mhos/cm}$ as a short-term maximum. The agricultural water quality goal, that would apply the narrative chemical constituents objective, is 700 $\mu\text{mhos/cm}$ as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). The 700 $\mu\text{mhos/cm}$ agricultural water quality goal is intended to prevent reduction in crop yield, i.e. a restriction on use of water, for salt-sensitive crops, such as beans, carrots, turnips, and strawberries. These crops are either currently grown in the area or may be grown in the future. Most other crops can tolerate higher EC concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the EC, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

(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. The secondary MCL for TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum. The recommended agricultural water quality goal for TDS, that would apply the narrative chemical constituent objective, is 450 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985). Water Quality for Agriculture evaluates the impacts of salinity levels on crop tolerance and yield reduction, and establishes water quality goals that are protective of the agricultural uses. The 450 mg/L water quality goal is intended to prevent reduction in crop yield, i.e. a restriction on use of water, for salt-sensitive crops. Only the most salt sensitive crops require irrigation water of 450 mg/L or less to prevent loss of yield. Most other crops can tolerate higher TDS concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the TDS, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

(b) RPA Results.

(1) Chloride. Chloride concentrations in the effluent ranged from 2.2 mg/L to 15 mg/L, with an average of 6.2 mg/L. These levels do not exceed the agricultural water goal.

(2) Electrical Conductivity. A review of the Discharger's monitoring reports shows an average effluent EC of 242 $\mu\text{mhos/cm}$, with a range

from 190 $\mu\text{mhos/cm}$ to 330 $\mu\text{mhos/cm}$. These levels do not exceed the agricultural water goal.

(3) Sulfate. A review of the Discharger's monitoring reports shows a single sample sulfate concentration of 8.5 mg/L. This level does not exceed the secondary MCL value of 250 mg/L.

(4) Total Dissolved Solids. The average TDS effluent concentration was 187.8 mg/L with concentrations ranging from 140 mg/L to 360 mg/L. These levels do not exceed the applicable water quality objectives.

Based on monthly effluent monitoring data from 2006 to 2010, the discharge does not demonstrate reasonable potential to cause or contribute to an exceedance of the applicable water quality objectives for the salinity objectives in the receiving water. Therefore, WQBELs for salinity constituents are not included in this Order. The previous Order included WQBELs for EC due to use of salt for fish treatments. Based on available data since adoption of the previous Order, the use of salt does not result in salinity concentrations in the discharge that exceed the applicable water quality objectives. Therefore, the WQBELs have not been carried forward. Compliance with the federal antibacksling regulations is discussed in Section IV.D.3 of the Fact Sheet.

c. Constituents with Reasonable Potential. The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for aluminum, iron, and manganese. WQBELs for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. Ammonia

(a) WQO. The NAWQC for the protection of freshwater aquatic life for total ammonia, recommends acute (1-hour average; criteria maximum concentration or CMC) standards based on pH and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. USEPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. USEPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature. The Cosumnes River has a beneficial use of cold freshwater habitat and the presence of salmonids and early fish life stages in the Cosumnes River is well-documented. However, the discharge from the Facility is to a storm water ditch that is located about 1 mile upstream of the Cosumnes River where salmonids are present. The ammonia

discharged to the storm water ditch will naturally undergo nitrification prior to reaching the downstream river. Therefore, the use of the recommended acute criterion for waters where salmonids are absent is protective of the ditch and the downstream river. The maximum permitted effluent pH is 8.5, as the Basin Plan objective for pH in the receiving stream is the range of 6.5 to 8.5. In order to protect against the worst-case short-term exposure of an organism, a pH value of 8.5 was used to derive the acute criterion. The resulting acute criterion is 3.2 mg/L.

Paired effluent data for temperature and pH were used to calculate the 30-day CCC. This was done based on 490 samples taken between 1 May 2009 and 31 March 2011. The lowest 30-day CCC calculated during this period was 1.56 mg/L as N and was based on a paired 30-day average pH of 8.1, 30-day average temperature of 19.4°C, which occurred from 20 September 2010 to 19 October 2010, and early fish life stages present. The 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 1.56 mg/L (as N), the 4-day average concentration that should not be exceeded is 3.90 mg/L (as N).

(b) RPA Results. Untreated Cold Water Concentrated Aquatic Animal Production Facility discharges contain ammonia. Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia in toxic concentrations would violate the Basin Plan's narrative toxicity objective. The MEC for ammonia was 0.68 mg/L. Although the effluent does not exceed the applicable water quality objectives for ammonia, Section 1.3, Step 7, of the SIP, allows that WQBELs can be required based on other information. If not properly treated, wastewater from CAAP facilities may contain ammonia in concentrations that may cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Hence, WQBELs for ammonia are included in this Order.

(c) WQBELs. The Central Valley Water Board calculates WQBELs in accordance with SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long-term average discharge condition (LTA). However, USEPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day CCC. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day CCC was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 4-day CCC, and 30-day CCC is then selected for deriving the AMEL and the MDEL. The remainder of the WQBEL calculation for ammonia was performed according to the SIP

procedures. This Order contains a final AMEL and MDEL for ammonia of 1.4 mg/L and 3.2 mg/L, respectively, based on the acute criterion value.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC is less than the WQBELs. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

ii. Iron

(a) WQO. The Department of Public Health (DPH) establishes a secondary Maximum Contaminant Level (MCL) of 300 ug/L for iron which is protective of the Basin Plan's chemical constituent objective.

(b) RPA Results. The MEC for iron was 620 µg/L while the maximum annual average for iron was 306 µg/L in 2009. Therefore, iron in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

(c) WQBELs. Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for iron. This Order contains a final annual average effluent limitation for iron of 300 µg/L based on the secondary MCL.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the maximum annual average effluent concentration of 306 µg/L exceeds the WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for iron are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, a compliance time schedule for compliance with the iron effluent limitations is established in a separate Time Schedule Order (TSO) No. R5-2011-0085 in accordance with CWC section 13301, that requires preparation of a pollution prevention plan in compliance with CWC section 13263.3.

iii. pH

(a) WQO. The 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."

(b) RPA Results. The discharge of aquaculture wastewater has a reasonable potential to cause or contribute to an excursion above the Basin Plan's numeric objectives for pH.

(c) **WQBELs.** Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.5 as an instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH.

(d) **Plant Performance and Attainability.** Analysis of the effluent data shows that the MEC of 6.64 – 7.94 s.u. is within the range of the applicable WQBEL. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

4. WQBEL Calculations

- a. This Order includes WQBELs for pH, ammonia, and iron. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.
- 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:

$$\begin{aligned} ECA &= C + D(C - B) && \text{where } C > B, \text{ and} \\ ECA &= C && \text{where } C \leq B \end{aligned}$$

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.

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

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

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

where:

$mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL

$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL

MA = statistical multiplier converting acute ECA to LTA_{acute}

MC = statistical multiplier converting chronic ECA to $LTA_{chronic}$

5. Whole Effluent Toxicity (WET)

- a. **Acute Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.” (Basin Plan at page III-8.00) The Basin Plan also states that, “...effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate...”. USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc."
- b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, “All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.” (Basin Plan at page III-8.00)

Due to the nature of operations and chemical treatments at this Facility, its effluent contains only two toxic pollutants at any given time that may have an effect on whole effluent toxicity (i.e., ammonia and sodium chloride). Therefore, the Central Valley Water Board is using a chemical-specific approach to determine “reasonable potential” for discharges of aquaculture drugs and

chemicals, and ammonia. As such it is not necessary to include an acute toxicity effluent limitation or require acute or chronic WET testing.

D. Final Effluent Limitations

Table F-5. Summary of Final Effluent Limitations Discharge Point No. 001

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	1.2	3.1	--	--
Iron, Total	µg/L	300 ¹	--	--	--
Total Ammonia as N	mg/L	1.4	3.2	--	--
	lbs/day	14	83	--	--
pH	standard units	--	--	6.5	8.5

¹ Calendar annual average effluent limit.

1. Mass-based Effluent Limitations

40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

2. Averaging Periods for Effluent Limitations

40 CFR 122.45 (d) requires maximum daily and average monthly discharge limitations for all dischargers other than publicly owned treatment works unless impracticable.

For effluent limitations based on Secondary MCLs, this Order includes annual average effluent limitations. The Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. Since it is necessary to determine compliance on an annual average basis, it is impracticable to calculate average weekly and average monthly effluent limitations.

3. Satisfaction of Anti-Backsliding Requirements

The effluent limitations in this Order are at least as stringent as the effluent limitations in the existing Order, with the exception of effluent limitations for ammonia, EC, nitrate, iron, and manganese. The effluent limitations for these pollutants are less stringent than those in Order R5-2005-0080. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA

and federal regulations. These changes are also consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Any impact on existing water quality will be insignificant.

Nitrate and Manganese. Nitrate and manganese do not demonstrate reasonable potential and therefore the effluent limitations are being removed. Removal of the WQBELs in the previous permit is in accordance with CWA sections 303(d)(4) and 402(o), which allow for the removal of WQBELs for attainment waters where antidegradation requirements are satisfied. Removal of the WQBELs is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Therefore, the modifications to these effluent limitations do not violate anti-backsliding requirements.

Iron. Order R5-2005-0080 required AMEL for iron. The AMEL contained in Order R5-2005-0080 for this pollutant has been revised to annual average effluent limitation consistent with input from DPH and the fact that secondary MCL is designed to protect human health over long exposure periods.

Order R5-2005-0080 established final mass-based effluent limitation for iron. 40 CFR 122.45(f)(1)(ii) states that mass limitations are not required when applicable standards and limitations are expressed in terms of other units of measurement. The numerical effluent limitation for iron established in this Order is based on water quality standards and objectives, which are expressed in terms of concentration. Pursuant to 40 CFR 122.25(f)(1)(ii), expressing the effluent limitations in terms of concentration is in accordance with federal regulations. Since this Order includes a flow limit, the removal of mass limits will not result in an increase in the mass of this pollutant. Compliance with the concentration-based limit will ensure that significantly less mass of the pollutant is discharged to the receiving water. Discontinuing mass-based effluent limitation for this parameter is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Any impact on existing water quality will be insignificant. Therefore, relaxation of effluent limitation is allowed under CWA section 303(d)(4).

Ammonia. The WQBELs for ammonia are less stringent than previous Order R5-2005-0080. The WQBELs were revised based on extensive pH and temperature effluent data that was not previously available at the time Order R5-2005-0080 was adopted. The relaxation of the WQBELs based on the new information is consistent with the federal Antbacksliding regulations and complies with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Any impact on existing water quality will be insignificant.

Electrical Conductivity (EC). Based on monthly effluent monitoring data from 2006 to 2009 EC does not demonstrate reasonable potential to cause or contribute to an exceedance of the applicable water quality objectives in the receiving water. Therefore, the effluent limitations for EC have been removed. The maximum effluent concentration for EC was 330 μ mhos/cm, which is well below the agricultural goal of 700 μ mhos/cm for EC. Removal of the WQBELs in the previous permit is in accordance with CWA sections 303(d)(4) and 402(o), which allow for the removal of

WQBELs for attainment waters where antidegradation requirements are satisfied. Removal of the WQBELs is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Therefore, based on “new information”, the modification to these effluent limitations does not violate anti-backsliding requirements. However, since this Order authorizes the use sodium chloride at the Facility, monthly monitoring for EC is required.

4. Satisfaction of Antidegradation Policy

This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. 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. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 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. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of narrative restrictions on TSS. The WQBELs consist of restrictions on pH, ammonia, and iron. This Order’s technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

E. Interim Effluent Limitations – Not applicable

F. Land Discharge Specifications – Not applicable

G. Reclamation Specifications – Not applicable

V. 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 maximum contaminant levels (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 Plan requires 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

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 Plan. The Basin Plan states that “[t]he numerical and narrative water quality objectives define the least stringent standards that the Central Valley Water Board will apply to regional waters in order to protect the beneficial uses.” The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Water Limitations based on the Basin Plan numerical and narrative water quality objectives for Biostimulatory Substances, Chemical Constituents, Color, Dissolved Oxygen, Floating Material, Oil and Grease, pH, Pesticides, Radioactivity, Sediment, Settleable Material, Suspended Material, Tastes and Odors, Temperature, Toxicity and Turbidity.

B. Groundwater

1. The Basin Plan designates the beneficial uses of groundwater in the discharge area as MUN, AGR, industrial service supply (IND), and industrial process supply (PRO).
2. There is discharge to underlying groundwater from the Facility’s U-shaped treatment pond, unlined fish solids drying beds, and other onsite unlined wastewater conveyance channels. The constituents of concern are ammonia and nitrate. Groundwater monitoring for these constituents is required.
3. Consistent with Order No, R5-2005-0080, and based on the State Antidegradation Policy, State Water Board Resolution 68-16, the following Groundwater Limitation is included in this Order:

Release of waste constituents from any storage, treatment, or disposal component associated with the Facility shall not, in combination with other sources of the waste constituents, cause groundwater within influence of the Facility and discharge area(s) to contain waste constituents in concentrations in excess of natural background quality or the applicable water quality objectives, whichever is greater.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (Attachment E) of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for the Facility. The monitoring reports required by this Order are necessary to determine compliance with the Order.

A. Influent Monitoring

1. Process supply water is obtained from two wells located in the southeast corner of the Facility. Monitoring of this source water after treatment in the degassing/aeration tower is required once per year. This monitoring is required to characterize the influent source water from the groundwater supply wells.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 CFR 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 stream and groundwater.
2. Effluent monitoring for flow, pH, temperature, dissolved oxygen, total ammonia nitrogen, total iron, and TSS have been retained from Order R5-2005-0080 to determine compliance with effluent limitations for these parameters.
3. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants is required for which criteria or objectives apply and for which no effluent limitations have been established. However, low volume discharges can be exempt from this monitoring. The discharge does not contain priority pollutants at levels that exceed the CTR criteria. The pollutants in the discharge are well known and do not change. Therefore, the Discharger is exempt from priority pollutant monitoring.
4. Monitoring data collected over the existing permit term for arsenic, CBOD₅, fluoride, MBAS, nitrite, oil and grease, and phosphorus did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order R5-2005-0080.

C. Whole Effluent Toxicity Testing Requirements – Not applicable

D. Receiving Water Monitoring

1. Surface Water

- a. This Order contains receiving surface water limitations as required to comply with the Basin Plan's water quality objectives. However, receiving surface water monitoring is not feasible and, therefore, not required in this Order. Sampling for compliance with the receiving surface water limitations will be established through monitoring of the Facility's effluent.

The Facility discharges to a Sacramento County drainage ditch. Once offsite, wastewater flow continues along the natural storm drainage route, discharges to an unnamed tributary of the Cosumnes River, into a pond on a neighboring parcel, and ultimately to the Cosumnes River. The unnamed tributary is an ephemeral stream, containing no flow for much of the year, making upstream

monitoring infeasible. Furthermore, since the discharge flows through open areas prior to entering downstream waters, impacts from any discharges entering the drainage course could mask actual impacts of the discharge on downstream waters.

2. Groundwater

- a. CWC section 13267 states, in part, *“(a) A Central Valley Water Board, in establishing...waste discharge requirements... may investigate the quality of any waters of the state within its region” and “(b) (1) In conducting an investigation..., the Central Valley Water Board may require that any person who... discharges... waste...that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Central Valley Water 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.”* 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 Central Valley Water 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 Monitoring and Reporting Program is issued pursuant to CWC section 13267. The groundwater monitoring and reporting program required by this Order and the Monitoring and Reporting Program are necessary to assure compliance with these waste discharge requirements. The Discharger is responsible for the discharges of waste at the facility subject to this Order.
- b. Monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations, when compared to background. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this permit may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened and specific numeric limitations established consistent with Resolution 68-16 and the Basin Plan.

E. Other Monitoring Requirements

1. **Solids Disposal Monitoring.** This Order requires an annual solids disposal report describing the annual volume of solids generated by the Facility and specifying the disposal practices. Solids include collected screenings, sludges, and other solids, including fish carcasses, but not including harvested water hyacinths and duckweed. Solids disposal monitoring is required to evaluate compliance with Construction,

Operation, and Maintenance Specifications, Section VI.C. 2.e, of Limitations and Discharge Requirements of this Order.

2. **Treatment Pond Monitoring.** Treatment pond monitoring is required to evaluate compliance with Construction, Operation, and Maintenance Specifications, Section VI.C.4.a., of this Order (i.e., monitoring for pH, dissolved oxygen, and freeboard). In addition, monitoring for chemical constituents that are also monitored in the groundwater have been required in this Order to have the ability to determine if constituent concentrations in the ponds are causing or contributing to degradation of the groundwater (i.e., monitoring for total nitrogen, total ammonia, and nitrate nitrogen).

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

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

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

B. Special Provisions

CWC sections 13267 and 13383 authorize the Central Valley Water Board to require the submittal of technical reports. The technical reports required by this Order, as described in this Section, are necessary to determine compliance with the Order and to ensure protection of beneficial uses of the receiving water.

1. Reopener Provisions

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 this Order as a result of the special condition monitoring data.

Conditions that necessitate a major modification of a permit are described in 40 CFR section 122.62, including:

- a. If new or amended applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, this permit may be reopened and modified in accordance with the new or amended standards.
- b. When new information, that was not available at the time of permit issuance, would have justified different permit conditions at the time of issuance.

2. Special Studies and Additional Monitoring Requirements

- a. **Chemical and Aquaculture Drug Reporting Requirements.** As described in Section IV.B.1 of this Fact Sheet, the final Effluent Limitation Guidelines (ELG) includes the following reporting and narrative requirements for CAAP facilities that are subject to 40 CFR Part 451:
 - i. 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. Reporting requirement 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. Develop and maintain a best management practice (BMP) plan for solids control, material storage, structural maintenance, record keeping, and training.

Prior to using any new chemical or aquaculture drug at the Facility, the Discharger is required to submit to the Central Valley Water Board a RWD and be issued waste discharge requirements and/or NPDES permit authorizing the discharge. The RWD must contain the reporting and toxicity testing of the new chemical or aquaculture drug as specified in Section VI.C.2.a of this Order. These reporting and toxicity testing requirements are needed for the 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 Plan, or narrative water quality objective for toxicity from the Basin Plan.

3. Best Management Practices and Pollution Prevention

- a. **Best Management Practices.** Best Management Practices 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 CFR 451. CAAP facilities that are subject to the federal ELG are required to develop and maintain a BMP plan that address the following requirements: solids control, material storage, structural maintenance, recordkeeping, and training. The Discharger must make the BMP plan available to the Central Valley Water Board upon request.

- b. Storm Water.** Storm water discharges from the Facility are to be regulated under the General Permit for Discharges of Storm Water Associated with Industrial Activities (State Water Resources Control Board, Water Quality Order 97-03-DWQ, NPDES General Permit No. CAS000001). During inspections of the Facility, it has been observed that proper BMPs are not being implemented to minimize pollutants in onsite storm water from flowing to surface waters. The Facility includes a storage area containing large amounts of metal (i.e., equipment components, empty 55-gallon drums, piping, fencing, and rusting corrugated metal sheets) which were stored directly on the ground surface. The storm water drainage from this area can flow to surface waters. Therefore, this Order requires the Discharger to enroll in the State Water Board's industrial storm water general order.

4. Construction, Operation, and Maintenance Specifications

- a. Solids Disposal Specifications.** These provisions are operational requirements to ensure the proper disposal of solids on the site.
- b. Treatment Pond Specifications.** These provisions are operational requirements for the treatment pond to ensure the facilities do not cause nuisance odors or adversely impact groundwater.
- c. Mosquito Control.** These provisions require that the Discharger manage the Facility's ponds and grounds to prevent the breeding of mosquitoes. Based on findings from Facility site visits and inspections, the current operational and site conditions at the Facility indicate excessive standing water and vegetation that is conducive to habitats for mosquitoes and other vectors and may result in the Facility creating a condition of nuisance. Surrounding landowners have complained about mosquito problems originating at the Facility. Provision VI.C.4.b requires the Discharger to implement adequate operation and maintenance practices to prevent breeding of mosquitoes and to ensure the Facility does not create a condition of nuisance.

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

6. Other Special Provisions

- a. Ownership Change.** To maintain the accountability of the operation of the Facility, the Discharger is required to notify the succeeding owner or operator of the existence of this Order by letter if, and when, there is any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger.

7. Compliance Schedules – Not applicable

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board is considering the issuance of WDRs that will serve as an NPDES permit for the Facility. 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 the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through posting of a Notice of Public Hearing.

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.

To be fully responded to by staff and considered by the Central Valley Water Board, written comments must be received at the Central Valley Water Board offices by 5:00 p.m. on **24 October 2011**.

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: **30 November/1/2 December 2011**
Time: 8:30 a.m.
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 discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is 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, related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the 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 Facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Anand Mamidi at (916) 464-4853.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Ammonia	mg/L	0.69	NA	1.56	2.14	1.56					Y
Antimony	µg/L	0.83	NA	6			14	4300		6	N
Arsenic	µg/L	4.5	NA	10	340	150				10	N
Copper	µg/L	1.1	NA	6.03	8.65	6.03	1300			1000	N
Mercury	µg/L	0.00121	NA	0.05			0.05	0.051			N
Nickel	µg/L	1.9	NA	33.86	305	33.86	610	4600		100	N
Zinc	µg/L	7.3	NA	77.72	77.7	77.72				5000	N
Aluminum	µg/L	220/160 ¹	NA	200	750	750				200	N
Barium	µg/L	58	NA	1000						1000	N
Chloride	mg/L	15	NA	106	860	230			106		N
Chromium, Total	µg/L	1.6	NA	50						50	N
EC	umhos/cm	330	NA	700					700	900	N
Fluoride	µg/L	170	NA	1000					1000	2000	N
Iron	µg/L	306 ¹	NA	300		1000				300	Y
Manganese	µg/L	38 ¹	NA	50					200	50	N
MBAS	µg/L	120	NA	500						500	N
Nitrate	mg/L	8.9	NA	10						10	N
Nitrite	mg/L	0.19	NA	1						1	N
Sulfate	mg/L	8.5	NA	250						250	N
TDS	mg/L	360	NA	450					450		N

General Note: All inorganic concentrations are given as a total recoverable.

¹ Maximum annual average effluent concentration.

MEC = Maximum Effluent Concentration

B = Maximum Receiving Water Concentration or lowest detection level, if non-detect

C = Criterion used for Reasonable Potential Analysis

CMC = Criterion Maximum Concentration (CTR or NTR)

CCC = Criterion Continuous Concentration (CTR or NTR)

Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)

Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)

Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective

MCL = Drinking Water Standards Maximum Contaminant Level

NA = Not Available

ND = Non-detect

ATTACHMENT H – CALCULATION OF QBELS

Parameter	Units	Most Stringent Criteria			Dilution Factors			HH Calculations			Aquatic Life Calculations								Final Effluent Limitations		
		HH	CMC	CCC	HH	CMC	CCC	ECA _{HH} = AMEL _{HH}	AMEL/MDEL Multiplier _{HH}	MDEL _{HH}	ECA Multiplier _{acute}	LTA _{acute}	ECA Multiplier _{chronic}	LTA _{chronic}	Lowest LTA	AMEL Multiplier ₉₅	AMEL _{AL}	MDEL Multiplier ₉₉	MDEL _{AL}	Lowest AMEL	Lowest MDEL
Ammonia Nitrogen, Total (as N)	mg/L	--	3.2 ¹	1.56 ¹	--	--	--	--	--	--	0.24	0.8	0.71	1.1	0.8	1.8	1.4	4.1	3.2	1.4	3.2

¹ USEPA Ambient Water Quality Criteria.

ATTACHMENT I – DRUG AND CHEMICAL USAGE REPORT TABLE

Name of Drug or Chemical, and Active Ingredient	Date(s) of Application	Location and Purpose of Application	Method of Application or Treatment	Duration of Treatment	Static or Flush Treatment	Total Amount Applied	Flow in Treatment Unit (cfs)	Total Facility Flow (cfs)	Method of Disposal for Used Drug or Chemical
<u>EXAMPLE:</u> Salt, active ingredient sodium chloride	9/1/05 to 9/4/05	Tank Nos. 1,2 Infection treatment	Added directly to water in tanks.	3 days	Flush	200 pounds per tank per day = 200 x 2 x 3 = 1200 pounds total	5 cfs	28 cfs	Discharged via Discharge Point No. 001