

North Coast Regional Water Quality Control Board

ORDER NO. R1-2018-0046
NPDES NO. CA0022721
WDID NO. 1B83136OHUM

**WASTE DISCHARGE REQUIREMENTS
AND
WATER RECYCLING REQUIREMENTS**

FOR THE

**CITY OF FERNDALE
WASTEWATER TREATMENT PLANT
HUMBOLDT COUNTY**

The following Permittee is subject to waste discharge requirements (WDRs) and water recycling requirements set forth in this Order:

Table 1. Permittee Information

Permittee	City of Ferndale
Name of Facility	City of Ferndale Wastewater Treatment Plant
Facility Address	606 Port Kenyon Road
	Ferndale, CA 95536
	Humboldt County
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	0.55 million gallons per day (mgd) (average dry weather design flow)
	0.95 mgd (peak average daily wet weather design flow)

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Disinfected Tertiary Treated Municipal Wastewater	40° 35' 40"	124° 15' 44"	Natural drainage channel, tributary to the Salt River
002	Disinfected Secondary Treated Municipal Wastewater	--	--	Water Recycling/Irrigation Use on Neighboring Agricultural Land

Table 3. Administrative Information

This Order was adopted on:	November 15, 2018
This Order shall become effective on:	January 1, 2019
This Order shall expire on:	December 31, 2023
The Permittee shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations, (CCR) and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	January 15, 2023
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, North Coast Region have classified this discharge as follows:	Minor

IT IS HEREBY ORDERED, that Waste Discharge Requirements (WDR) Order No. R1-2012-0097 and Monitoring and Reporting Program (MRP) No. R1-2012-0097, are rescinded upon the effective date of this Order except for enforcement purposes, and in order to meet the provisions contained in division 7 of the California Water Code (Water Code) (commencing with section 13000) and regulations and guidelines adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Permittee shall comply with the requirements of this Order. This action in no way prevents the North Coast Regional Water Quality Control Board (Regional Water Board) from taking enforcement action for past violations of the previous permit.

I, Matthias St. John, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, North Coast Region, on **November 15, 2018**.

 Matthias St. John, Executive Officer

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I. FACILITY INFORMATION

Information describing the City of Ferndale (Permittee), Wastewater Treatment Plant (Facility) is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Facility's permit application.

II. FINDINGS

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

- A. Legal Authorities.** This Order serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (U.S. EPA) and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a NPDES permit authorizing the Permittee to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDRs in this Order.
- B. Basis and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the Permittee's application, through monitoring and reporting program, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into this Order and constitutes Findings for this Order. Attachments A through E are also incorporated into this Order.
- C. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections III.E, III.F, IV.B, IV.C, V.B, and VI.C.5.a, VI.C.5.d, and VI.C.5.e of this Order and sections VI, VII, and X.E of the Monitoring and Reporting Program (MRP) are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- D. Notification of Interested Parties.** The Regional Water Board has notified the Permittee 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 the notification are provided in the Fact Sheet.
- E. Consideration of Public Comment.** The Regional 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.

III. DISCHARGE PROHIBITIONS

- A.** The discharge of any waste not disclosed by the Permittee or not within the reasonable contemplation of the Regional Water Board is prohibited.
- B.** Creation of pollution, contamination, or nuisance, as defined by section 13050 of the Water Code is prohibited.
- C.** The discharge of sludge or digester supernatant is prohibited, except as authorized under section VI.C.5.c of this Order (Sludge Disposal and Handling Requirements).

- D.** The discharge or recycling use of untreated or partially treated waste (receiving a lower level of treatment than described in section II.A of the Fact Sheet) from anywhere within the collection, treatment, or disposal systems is prohibited, except as provided for in Attachment D, Standard Provisions G (Bypass) and H (Upset).
- E.** Any sanitary sewer overflow (SSO) that results in a discharge of untreated or partially treated wastewater to (a) waters of the state or (b) land and creates pollution, contamination, or nuisance, as defined in Water Code section 13050(m) is prohibited.
- F.** The discharge of waste to land that is not owned by the Permittee, governed by City ordinance, or under agreement to use by the Permittee, or for which the Permittee has explicitly permitted such use, is prohibited, except for use for fire suppression as provided in title 22, sections 60307(a) and 60307(b) of the California Code of Regulations (CCR).
- G.** The discharge of waste at any point not described in Finding II.B of the Fact Sheet or authorized by a permit issued by the State Water Resources Control Board (State Water Board) or another Regional Water Board is prohibited.
- H.** The average dry weather flow of waste through the Facility shall not exceed 0.55 million gallons per day (mgd) measured daily and averaged over a calendar month. The peak average daily wet weather flow of waste through the Facility shall not exceed 0.95 mgd. Compliance with this prohibition shall be determined as defined in sections VII.K and VII.L of this Order.
- I.** The discharge of waste to the Lower Eel River and its tributaries is prohibited during the period from May 15 through September 30 of each year.
- J.** During the period from October 1 through May 14, discharges of treated wastewater to the natural drainage channel, tributary to the Salt River thence to the Eel River, shall not exceed one hundred percent of the flow of Francis Creek, as measured in Francis Creek at the Van Ness bridge. For the purposes of this Order, compliance with this discharge prohibition shall be determined as follows:
 - 1.** The discharge of tertiary treated wastewater shall be adjusted at least once daily to avoid exceeding, to the extent practicable, one hundred percent of the most recent daily flow measurement of Francis Creek. Daily flow shall be based on flow meter comparisons reasonably read between the hours of 12:01 am and 12:00 midnight; and,
 - 2.** In no case shall the total volume of tertiary treated wastewater discharged in a calendar month exceed one hundred percent of the total volume of Francis Creek in the same calendar month. At the beginning of the discharge season, the monthly flow volume comparisons shall be based on the date when the discharge commenced to the end of the calendar month. At the end of the discharge season, the monthly flow volume comparisons shall be based on the first day of the calendar month to the date when the discharge ceased for the season.
- K.** The discharge of any radiological, chemical, or biological warfare agent into waters of the state is prohibited under Water Code section 13375.
- L.** The acceptance of septage is prohibited except as approved pursuant to section VI.C.4.c (Septage Handling Requirements).

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

- a. The discharge of treated wastewater shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the MRP (Attachment E).

Table 4. Effluent Limitations – Discharge Point 001 (Monitoring Location EFF-001)

Parameter	Units	Effluent Limitations ¹				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	10	15	--	--	--
Total Suspended Solids (TSS)	mg/L	10	15	--	--	--
pH	s.u.	--	--	--	6.5	8.5
Settleable Solids	ml/L	0.1	--	0.2	--	--
Ammonia Impact Ratio ²	mg/L	1	--	1	--	--
Nitrogen, Total (as N) ³	mg/L	10	--	--	--	--
2,3,7,8-TCDD	µg/L	1.3 x 10 ⁻⁸	--	2.6 x 10 ⁻⁸	--	--

Table Notes:

1. See Definitions in Attachment A and Compliance Determination discussion in section VII of this Order.
2. The Ammonia Impact Ratio (AIR) is calculated as the ratio of the ammonia concentration in the effluent and the applicable ammonia standard (AMEL and MDEL). Attachment H is a PDF example of the calculator that will be sent to the Permittee to determine compliance with the AMEL/MDEL AIR. For each of the applicable ammonia standards, Attachment H includes two tables that provide the variable AMEL and MDEL ammonia standards used in calculating the AIR. The AIR is the ammonia effluent limit and must be reported in the self-monitoring reports in addition to ammonia concentrations, and pH and temperature values in the effluent and receiving water. Monitoring for ammonia, pH and temperature must be conducted concurrently in order for the AIR to be calculated properly.
3. The sum of the concentrations of nitrate nitrogen, nitrite nitrogen, total organic nitrogen, and ammonia.

- b. **Percent Removal.** The average monthly percent removal of BOD₅ and TSS shall not be less than 85 percent. Percent removal shall be determined from the monthly average value of influent wastewater concentration in comparison to the monthly average value of effluent concentration for the same constituent over the same time period as measured at Monitoring Locations INF-001 and EFF-001, respectively.
- c. **Disinfection.** Disinfected effluent discharged from the Facility through Discharge Point 001 to the natural drainage channel tributary to the Salt River shall not contain total coliform bacteria exceeding the following concentrations, as measured at Monitoring Location EFF-001:
 - i. The median concentration shall not exceed a Most Probable Number (MPN) of 23 per 100 milliliters (mL) in a calendar month¹; and

¹ See section VII.H of this Order regarding compliance with bacteriological limitations.

- ii. No sample shall exceed an MPN of 240 total coliform bacteria per 100 mL.
- d. **Acute Toxicity.** There shall be no acute toxicity in treated wastewater discharged to the natural drainage channel tributary to the Salt River. The Permittee will be considered in compliance with this limitation when the survival of aquatic organisms in a 96-hour bioassay of undiluted effluent complies with the following:
 - i. Minimum for any one bioassay: 70 percent survival; and
 - ii. Median for any three or more consecutive bioassays: at least 90 percent survival.

Compliance with these effluent limitations shall be determined in accordance with section VII.I of this Order and section V.A of the MRP (Attachment E).
- e. **Chronic Toxicity.** As measured at Monitoring Location EFF-001, there shall be no chronic toxicity in the effluent when discharging to the natural drainage channel tributary to the Salt River. Compliance with this narrative chronic toxicity effluent limitation shall be determined in accordance with section VII.J of this Order and sections V.B and V.C of the MRP (Attachment E).

2. Interim Effluent Limitations – Not Applicable

This Order does not establish interim effluent limitations or schedules for compliance with final limitations.

B. Land Discharge Specifications and Requirements – Not Applicable

This Order does not authorize discharges to land.

C. Water Recycling Specifications and Requirements – Discharge Point 002

- 1. **Authorized Recycled Water Location:** This Order authorizes use of recycled water at Discharge Point 002 to a pasture area adjacent to the Facility, identified in Attachment B-1, in accordance with the water recycling specifications and requirements that follow.
- 2. **Water Recycling Specifications**
 - a. When discharging to the recycled water system, the Permittee shall maintain compliance with the following limitations at Discharge Point 002, with compliance measured at Monitoring Location EFF-002, as described in the attached MRP (Attachment E).

Table 5. Recycling Discharge Specifications – Discharge Point 002 (Monitoring Location EFF-002)

Parameter	Units	Discharge Specifications ¹		
		Average Monthly	Average Weekly	Maximum Daily
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	30	--	--
Total Suspended Solids (TSS)	mg/L	30	--	--
Settleable Solids	ml/L	0.1	--	0.2
Table Notes:				
1. See Definitions in Attachment A and Compliance Determination discussion in section VII of this Order.				

- b. Disinfection.** Disinfected effluent discharged from the Facility through Discharge Point 002 to the recycled water system shall not contain total coliform bacteria exceeding the following concentrations, as measured at Monitoring Location EFF-002:
 - i.** The median concentration shall not exceed an MPN of 23 per 100 mL in a calendar month²; and
 - ii.** No sample shall exceed an MPN of 240 total coliform bacteria per 100 mL.

3. Water Recycling Requirements

- a.** The Permittee shall comply with applicable state and local requirements regarding the production and use of recycled water, including requirements of Water Code sections 13500-13577 (Water Reclamation) and State Water Board, Division of Drinking Water (DDW) regulations at title 22, sections 60301 – 60357 of the CCR (Water Recycling Criteria).
- b.** The Permittee submitted a title 22 Recycled Water Engineering Report on June 25, 2018 and received approval from DDW on July 17, 2018. The Permittee shall maintain an up-to-date DDW-approved Recycled Water Engineering Report. The Permittee shall revise its title 22 Recycled Water Engineering Report and receive DDW approval prior to adding any new recycled water user(s).
- c.** The Permittee shall be responsible for ensuring that recycled water meets the quality standards of this Order, the operation and maintenance of distribution piping and equipment, and for the application and use of recycled water on the designated recycled water use areas. The Permittee's specific responsibilities, at a minimum, shall include the following:
 - i.** Proper installation, operation, and maintenance of the irrigation system to ensure compliance with all requirements of this Order;
 - ii.** Control of onsite piping to prevent any cross-connections with potable water supplies;
 - iii.** General responsibilities to ensure compliance with this Order and continuous implementation of best management practices (BMPs) identified as necessary to prevent potential hazards to public health and to protect the environment.
- d.** The Permittee shall conduct periodic inspections of the irrigation system, facilities, and operations to monitor and ensure compliance with the conditions of this Order.
- e.** The Permittee shall report all violations of this Order in the Permittee's self-monitoring reports, including any runoff events.
- f.** The use of treated effluent for irrigation shall not result in unreasonable waste of water.
- g.** The Permittee shall manage the recycled water system to prevent surface runoff of recycled water.

² See section VII.H of this Order regarding compliance with bacteriological limitations.

- h.** The use of recycled water shall not create a condition of pollution or nuisance as defined in Water Code section 13050(m).
- i.** Areas irrigated with recycled water shall be managed to prevent ponding and conditions conducive to the proliferation of mosquitoes and other disease vectors, and to avoid creation of public nuisance or health hazard. The following practices shall be implemented:
 - i.** Irrigation water shall infiltrate completely within a 48-hour period; and
 - ii.** Low pressure and unpressurized pipelines and ditches that may be accessible to mosquitoes shall not be used to store recycled water.
- j.** Recycled water used for irrigation shall not be allowed to escape from the distribution system or the recycled water use areas in the form of surface runoff. [CCR title 22, section 60310(e)] Where appropriate, practices and strategies to prevent the occurrence of runoff shall include, but not be limited to:
 - i.** A minimum 50-foot setback to all surface waters or provide written documentation of appropriate BMPs that will be implemented to prevent or minimize the potential for runoff discharging to surface water;
 - ii.** Implementation of an Operations and Maintenance Plan that provides for detection of leaks from recycled water piping and irrigation equipment, and correction within 72 hours of learning that runoff, or prior to release of 1,000 gallons, whichever comes first;
 - iii.** Proper design and aim of sprinkler heads;
 - iv.** Proper design and operation of the irrigation system;
 - v.** Refraining from irrigation during precipitation events;
 - vi.** Application at an agronomic rate that does not exceed the water or nutrient demand of the crop or vegetation being irrigated;
 - vii.** Use of repeat start times and/or multiple water days with short run times to increase irrigation efficiency and reduce runoff potential; and
 - viii.** Maintenance of irrigation infrastructure (pipelines, pumps, sprinkler equipment, etc.) to prevent and minimize breakage and leaks.
- k.** Recycled water and airborne spray shall not be allowed to escape from the authorized recycled water use area(s).
- l.** Direct or windblown spray, mist, or runoff from irrigation areas shall not enter dwellings, designated outdoor eating areas, or food handling facilities.
- m.** Disinfected secondary treated recycled water shall not be irrigated within 100 feet of any domestic water supply well or domestic water supply surface intake, unless the technical requirements specified at title 22, section 60301(a) of the CCR have been met and approved by DDW.
- n.** All areas where treated effluent is used for irrigation that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than four inches high by eight inches wide that include the following wording: 'RECYCLED WATER – DO

NOT DRINK'. [CCR title 22, section 60310(g)] Each sign shall display an international symbol similar to that shown in CCR title 22, Figure 60310-A. These warning signs shall be posted at least every 500 feet with a minimum of a sign at each corner and access road.

- o.** The main shutoff valve of the irrigation system shall be tagged with a recycled water warning sign and shall be equipped with an appropriate locking device to prevent unauthorized operation of the valve.
- p.** The discharge or use of recycled water for irrigation shall not cause or contribute to an exceedance of any applicable water quality standard. The Permittee shall be responsible for ensuring that all recycled water meets all terms and conditions of this Order, including the water quality standards in sections IV and V of this Order.
- q.** The Permittee shall discontinue all delivery of recycled water for irrigation during any period that there is reason to believe that the requirements for use as specified in this Order or the requirements of DDW or U.S. EPA are not being met. The delivery of recycled water for irrigation shall not resume until all non-compliant conditions have been corrected.
- r.** The use of recycled water for dust suppression shall only occur during periods of dry weather, shall be limited to periods of short duration, and shall be limited to areas under the Permittee's control.

D. Other Requirements

1. Filtration Process Requirements (INT-001)

- a. Turbidity.** The effluent from the filtration process shall at all times be filtered such that the filtered effluent does not exceed any of the following specifications at Monitoring Location INT-001:

 - i.** An average of 2 NTU during any 24-hour period; and
 - ii.** 10 NTU at any time.

2. Disinfection Process Requirements (INT-002)

The Permittee shall operate the ultraviolet light (UV) disinfection system in accordance with the operating protocol and technical and administrative requirements set out by DDW in order to demonstrate compliance with disinfection effluent limitations specified in section IV.A.1.c and disinfection water recycling specifications in section IV.C.2.b of this Order. Specifically, the Permittee shall:

- a.** Provide continuous, reliable monitoring of flow, UV transmittance, UV intensity, UV dose, and UV power at Monitoring Location INT-002 and turbidity following the filtration process.
- b.** The Permittee shall establish and maintain a UV dose that ensures the discharge meets the total coliform effluent limitations at the end of the disinfection process for discharges to Discharge Points 001 and 002. The Permittee must demonstrate that the UV dose (reported in mJ/cm² or mW-s/cm²) is sufficient to ensure compliance with the total coliform effluent limitations in sections IV.A.1.c, and IV.C.2.b.1 of the Order.

- c.** Ensure that the UV transmittance (at least 254 nanometers) in the wastewater does not fall below 55 percent of maximum at any time, unless otherwise approved by DDW.
- d.** Visually inspect the quartz sleeves and cleaning system components per the manufacturer's operation manual for physical wear (scoring, solarization, seal leaks, etc.) and check the efficacy of the cleaning system.
- e.** Wipe/clean the quartz sleeves at fixed intervals following the manufacturer's procedures to ensure the minimum required UV dose delivery is consistently achieved. Cleaning intervals shall be increased as necessary to ensure compliance with permit requirements such as UV dose and total coliform organism requirements.
- f.** Operate the UV disinfection system in accordance with an approved operations and maintenance plan, which specifies clearly the operational limits and responses required for critical alarms. The Permittee shall maintain a copy of the approved operations plan at the treatment plant and make the plan readily available to operations personnel and regulatory agencies. The Permittee shall post a quick reference plant operations data sheet at the treatment plant. The data sheet shall include the following information:
 - i.** The alarm set points for secondary and tertiary turbidity, high and low flow, UV dose and transmittance, UV lamp operation hours, and power.
 - ii.** The values of secondary and tertiary turbidity, high and low flow, UV dose and transmittance, UV lamp operation hours, and power and specific actions to be taken to maintain compliance.
 - iii.** The required frequency of calibration for all meters measuring turbidity, flow, UV transmittance, and power.
 - iv.** The required frequency of mechanical cleaning/wiping and equipment inspection.
 - v.** Procedure for diverting or otherwise preventing non-compliant recycled water from being discharged to the receiving water or the recycled water system.
- g.** Replace lamps per the manufacturer's recommendation (10,000 hours), or sooner, if there are indications the lamps are failing to provide adequate disinfection. The Permittee shall maintain lamp age and lamp replacement records for a time period consistent with the record retention requirements in the Standard Provisions (Attachment D, Section IV).
- h.** Properly calibrate flow meters and UV transmittance (UVT) monitors to ensure proper disinfection.
 - i.** Ensure reliable operation, performance, and calibration of the on-line UVT meter.
 - j.** Operate the UV disinfection system with a built-in automatic reliability feature that must be triggered when the system is below the target UV dose. If the measured UV dose goes below the minimum UV dose, the UV reactor in question must alarm and startup the next available row of UV lamps or UV lamp bank.
 - k.** Ensure that flow through the UV disinfection system not exceed 0.95 mgd as a daily average flow, unless otherwise approved by DDW.

3. **Storage Ponds.** Ponds used for wet weather influent equalization and/or storage of treated wastewater shall be constructed in a manner that protects groundwater. Prior to construction of any new wastewater storage ponds or use of any existing pond for storage of recycled water, the Permittee shall submit to the Regional Water Board Executive Officer for review and approval, a technical report that includes design proposals and a technical evaluation that demonstrates that the pond design complies with the Water Code and title 27 of the CCR and is protective of ground water quality. Pond design and operation plan must include features and best management practices (BMPs) to protect groundwater and prevent exceedances of groundwater quality objectives.

V. RECEIVING WATER LIMITATIONS

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. Receiving water conditions not in conformance with the limitation are not necessarily a violation of this Order. Compliance with receiving water limitations shall be measured at monitoring locations described in the MRP (Attachment E). The Regional Water Board may require an investigation to determine cause and culpability prior to asserting that a violation has occurred.

A. Surface Water Limitations

Discharges from the Facility shall not cause the following in the receiving water:

1. The discharge shall not cause the dissolved oxygen concentration of the receiving water to be depressed below 9.0 mg/L.

In those waterbodies for which the aquatic life-based DO requirements are unachievable due to natural conditions³, site-specific background DO requirements can be applied⁴ as water quality objectives by calculating the daily minimum DO necessary to maintain 85% DO saturation during the dry season and 90% DO saturation during the wet season under site salinity, site atmospheric pressure, and natural receiving water temperature⁵. In no event may controllable factors reduce the daily minimum DO below 6.0 mg/L.

For the protection of estuarine habitat (EST), the dissolved oxygen concentration of enclosed bays and estuaries shall not be depressed to levels adversely affecting beneficial uses as a result of controllable water quality factors.

2. The discharge shall not cause the pH of receiving waters to depress below 6.5 nor raised above 8.5. Within this range, the discharge shall not cause the pH of the receiving waters to be changed at any time more than 0.5 units from what occurs naturally.
3. The discharge shall not cause the turbidity of receiving waters to be increased more than 20 percent above naturally occurring background levels.
4. The discharge shall not cause receiving waters to contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

³ Natural conditions are conditions or circumstances affecting the physical, chemical, or biological integrity of water that are not influenced by past or present anthropogenic activities.

⁴ Upon approval from the Regional Water Board Executive Officer

⁵ The method(s) used to estimate natural temperatures for a given waterbody or stream length must be approved by the Executive Officer and may include, as appropriate, comparison with reference streams, simple calculation, or computer models.

5. The discharge shall not cause receiving waters to contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.
6. The discharge shall not cause receiving waters to contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses.
7. The discharge shall not cause coloration of receiving waters that causes nuisance or adversely affects beneficial uses.
8. The discharge shall not contain substances in concentrations that result in deposition of material in receiving waters to the extent that such deposits cause nuisance or adversely affect beneficial uses.
9. The discharge shall not cause receiving waters to contain concentrations of biostimulatory substances that promote objectionable aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.
10. The discharge shall not cause receiving waters to contain toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in humans, plants, animals, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods, as specified by the Regional Water Board.
11. The discharge shall not cause a receiving water temperature to increase by more than 5° F above natural receiving water temperature at any time.
12. The discharge shall not cause an individual pesticide or combination of pesticides to be present in concentrations that adversely affect beneficial uses. The discharge shall not cause bioaccumulation of pesticide concentrations in bottom sediments or aquatic life.
13. The discharge shall not cause receiving waters to contain concentrations of pesticides in excess of Maximum Contaminant Levels (MCLs) established for these pollutants in title 22, division 4, chapter 15, article 5.5 of the CCR.
14. The discharge shall not cause receiving waters to contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise affect beneficial uses.
15. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board, as required by the federal CWA and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the CWA, or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such more stringent standards.
16. The discharge shall not cause concentrations of chemical constituents to occur in excess of MCLs and secondary MCLs (SMCLs) established for these pollutants in title 22, division 4, chapter 15, article 4, section 64431, article 5.5, section 64444, and article 16, section 64449 of the CCR.

17. The discharge shall not cause receiving waters to contain radionuclides in concentrations, which are deleterious to human, plant, animal or aquatic life, nor which result in the accumulation of radionuclides in the food web to an extent, which presents a hazard to human, plant, animal or indigenous aquatic life, nor in excess of the MCLs and SMCLs established for these pollutants in title 22, division 4, chapter 15, article 5, sections 64442 and 64443 of the CCR.

B. Groundwater Limitations

1. The collection, treatment, storage, and disposal of wastewater or use of recycled water shall not cause degradation of groundwater quality unless a technical evaluation is performed that demonstrates that any degradation that could reasonably be expected to occur, after implementation of all regulatory requirements (e.g., Basin Plan) and reasonable BMPs, will not violate groundwater quality objectives or cause impacts to beneficial uses of groundwater.
2. The collection, treatment, storage, and disposal of wastewater or use of recycled water shall not cause alterations of groundwater that contain chemical concentrations in excess of the MCL and SMCL provisions established for these pollutants in title 22, division 4, chapter 15, article 4, 64431, article 5.5, section 64444, and article 16, section 64449.
3. The collection, treatment, storage, and disposal of wastewater or use of recycled water shall not cause groundwater to contain radionuclides in concentrations that cause nuisance or adversely affect beneficial uses, nor in excess of the MCLs and SMCLs established for these pollutants in title 22, division 4, chapter 15, article 5, sections 64442 and 64443 of the CCR.
4. The collection, treatment, storage, and disposal of wastewater or use of recycled water shall not cause groundwater to contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.
5. In groundwaters used for domestic or municipal supply (MUN), the collection, treatment, storage, and disposal of wastewater or use of recycled water shall not cause the median of the most probable number of coliform organisms over any 7-day period to exceed 1.1 MPN/100 mL or 1 colony/100 mL.
6. Groundwaters shall not contain toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in humans, or that adversely affects beneficial uses. This limitation applies regardless of whether the toxicity is caused by a single substance or the synergistic effect of multiple substances.

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Permittee shall comply with all Standard Provisions included in Attachment D of this Order.
2. **Regional Water Board Standard Provisions.** The Permittee shall comply with the following Regional Water Board standard provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:
 - a. 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

Permittee to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Permittee to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

- b. In the event the Permittee does not comply or will be unable to comply for any reason, with any prohibition, final effluent limitation, recycled water specification, other specification, receiving water limitation, or provision of this Order that may result in a significant threat to human health or the environment, such as inundation of treatment infrastructure, breach of pond containment, sanitary sewer overflow, recycled water main break or equivalent release, irrigation runoff, etc., that results in a discharge to a drainage channel or a surface water, the Permittee shall notify Regional Water Board staff within 24 hours of having knowledge of such non-compliance. Spill notification and reporting shall be conducted in accordance with Section V.E of Attachment D and X.E of the Monitoring and Reporting Program.

B. Monitoring and Reporting Program (MRP) Requirements

The Permittee shall comply with the MRP, included as Attachment E of this Order, and future revisions thereto.

C. Special Provisions

1. Reopener Provisions

- a. **Standard Revisions.** This Order may be reopened for modification, (1) if applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, or (2) 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. **Reasonable Potential.** This Order may be reopened for modification to include an effluent limitation, if monitoring establishes that the discharge causes, or has the reasonable potential to cause or contribute to, an excursion above a water quality criterion or objective applicable to the receiving water.
- c. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a narrative or numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on that objective.
- d. **303(d)-Listed Pollutants.** If an applicable total maximum daily load (TMDL) (see Fact Sheet, section III.D) program is adopted, this Order may be reopened and effluent limitations for the pollutant(s) that are the subject of the TMDL may be modified or imposed to conform this Order to the TMDL requirements.
- e. **Water Effects Ratios (WERs) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating California Toxic Rule (CTR) criteria for applicable priority pollutant inorganic constituents, except for copper, for which a site-specific WER of 3.2 has been used as further described in section IV.C.3.c of the Fact Sheet. In addition, default dissolved-to-total metal translators have been used to convert water

quality objectives from dissolved to total recoverable. If the Permittee performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators and submits a report that demonstrates that WER or translator studies were performed in accordance with U.S. EPA or other approved guidance, this Order may be reopened to modify the effluent limitations for the applicable constituents.

- f. **Nutrients.** This Order contains effluent limitations for ammonia, and total nitrogen and effluent monitoring for nutrients (ammonia, nitrate, nitrite, organic nitrogen, total nitrogen, and phosphorus). If new water quality objectives for nutrients are established, if monitoring data indicate the need for new or revised effluent limitations for any of these parameters, or if new or revised methods for compliance with effluent limitations for any of these parameters are developed, this Order may be reopened and modified to include new or modified effluent limitations or other requirements, as necessary.
- g. **Salt and Nutrient Management Plans (SNMPs).** The Recycled Water Policy adopted by the State Water Board on February 3, 2009, and effective May 14, 2009, recognizes the fact that some groundwater basins in the state contain salts and nutrients that exceed or threaten to exceed water quality objectives in the applicable Basin Plans, and that not all Basin Plans include adequate implementation procedures for achieving or ensuring compliance with the water quality objectives for salt or nutrients. This Order may be reopened to incorporate provisions consistent with any SNMP(s) adopted by the Regional Water Board or subsequent amendments to the Recycled Water Policy.
- h. **Title 22 Engineering Report.** This Order implements title 22 requirements to protect public health. If future revisions to the Permittee's title 22 engineering report require modifications to this Order to adequately implement title 22, this Order may be reopened and modified as necessary.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. **Ammonia Study.** The Permittee shall conduct a study to determine the presence of freshwater mussels in the receiving water to support implementation of the water quality criteria for ammonia in the April 2013 *Aquatic Life Ambient Water Quality for Ammonia – Freshwater 2013* (EPA-822-R-13-001). The Permittee may conduct literature searches of historical mussel surveys and/or conduct a site-specific mussel survey to evaluate the presence/absence of mussels in the receiving water. The study shall be conducted in accordance with the August 2013 *Technical Support Document for Conducting and Reviewing Freshwater Mussel Occurrence Surveys for the Development of Site-Specific Water Quality Criteria for Ammonia* (EPA-800-R-13-003). The Permittee shall submit a work plan for conducting the study by **December 1, 2020**. The study shall be initiated within 3 years of the permit effective date and a final report summarizing the results of the study shall be submitted by the Regional Water Board in conjunction with the Report of Waste Discharge by **January 15, 2023**.

3. Best Management Practices and Pollution Prevention

- a. **Pollutant Minimization Program (PMP)**
 - i. The Permittee shall, as required by the Executive Officer, develop and conduct a PMP as further described below when there is evidence (e.g., sample results from analytical methods more sensitive than those methods required by this Order,

presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

- (a) The concentration of the pollutant is reported as “Detected, but Not Quantified” (DNQ) and the effluent limitation is less than the reporting limit (RL);
 - (b) A sample result is reported as non-detect (ND) and the effluent limitation is less than the method detection limit (MDL), using definitions described in Attachment A and reporting protocols described in MRP section X.B.5.
- ii. The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:
- (a) An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;
 - (b) Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;
 - (c) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;
 - (d) Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
 - (e) An annual status report that shall be submitted as part of the Annual Facility Report due **March 1st** to the Regional Water Board and shall include:
 - (1) All PMP monitoring results for the previous year;
 - (2) A list of potential sources of the reportable pollutant(s);
 - (3) A summary of all actions undertaken pursuant to the control strategy; and
 - (4) A description of actions to be taken in the following year.

4. Construction, Operation and Maintenance Specifications

- a. This Order (Attachment D, Standard Provision I.D) requires that the Permittee at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Permittee to achieve compliance with this Order. Proper operation and maintenance includes adequate laboratory quality control and appropriate quality assurance procedures.
- b. The Permittee shall maintain an updated Operation and Maintenance (O&M) Manual for the operational components of the Facility. The Permittee shall update the O&M Manual, as necessary, to conform to changes in operation and maintenance of the Facility. The Permittee shall operate and maintain the Facility in accordance with the most recently updated O&M Manual. The O&M Manual shall be readily available to

operating personnel onsite and for review by state or federal inspectors. The O&M Manual shall include the following.

- i. Description of the Facility's organizational structure showing the number of employees, duties and qualifications and plant attendance schedules (daily, weekends and holidays, part-time, etc.). The description should include documentation that the personnel are knowledgeable and qualified to operate the Facility to achieve the required level of treatment at all times.
- ii. Detailed description of safe and effective operation and maintenance of treatment processes, process control instrumentation and equipment.
- iii. Description of laboratory and quality assurance procedures.
- iv. Process and equipment inspection and maintenance schedules.
- v. Description of safeguards to assure that, should there be reduction, loss, or failure of electric power, the Permittee will be able to comply with requirements of this Order.
- vi. Description of preventive (fail-safe) and contingency (response and cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. These plans shall identify the possible sources (such as loading and storage areas, power outage, waste treatment unit failure, process equipment failure, tank and piping failure) of accidental discharges, untreated or partially treated waste bypass, and polluted drainage.

c. Septage Handling Requirements

- i. **Septage Management Plan.** The Permittee shall submit a Septage Management Plan for approval by the Regional Water Board Executive Officer by **June 1, 2019**. The Septage Management Plan shall include a description of the proposed septage receiving location and how septage is handled, identify the necessary legal authorities to monitor and enforce septage handling requirements, specify standard operating procedures (SOPs) for accepting septage, and demonstrate that the Facility has the capability of receiving and handling the septage without violating any conditions of this Order.
- ii. **Septage Handling Specifications.** The Permittee shall comply with the following specifications for accepting septage:
 - (a) The Permittee shall implement any necessary legal authorities to monitor and enforce septage handling requirements, including restriction of discharges of toxic materials to the collection system and wastewater treatment facility and inspection facilities connected to the system.
 - (b) The Permittee shall maintain a waste hauler manifest that identifies the name of the hauler, county identification number, the date and time the waste load was transferred, and the volume and source of the waste.
 - (c) The Permittee shall accept the discharge of septage only during business hours and when the Permittee's operations staff is on site.

- (d) The Permittee shall accept septage only at an approved septage receiving station/location.
- (e) The Permittee shall collect representative grab samples of septage loads in accordance with the MRP (Attachment E).

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Wastewater Collection Systems

i. Statewide General WDRs for Sanitary Sewer Systems

The Permittee has coverage under, and is separately subject to, the requirements of State Water Board Order No. 2006-0003-DWQ, Statewide General WDRs for Sanitary Sewer Systems, as amended by Order No. WQ 2013-0058-EXEC. As such, the Permittee provides notification and reporting of SSOs in accordance with the requirements of Order Nos. 2006-0003-DWQ and WQ 2013-0058-EXEC and any revisions thereto for operation of its wastewater collection system.

b. Source Control and Pretreatment Provisions

- i. The Permittee shall perform source control functions and provide a summary of source control activities conducted in the Annual Report (due **March 1st** to the Regional Water Board). Source control functions and requirements shall include the following:
 - (a) Implement the necessary legal authorities to monitor and enforce source control standards, restrict discharges of toxic materials to the collection system and inspect facilities connected to the system.
 - (b) If waste haulers are allowed to discharge to the Facility, establish a waste hauler permit system, to be reviewed by the Executive Officer, to regulate waste haulers discharging to the collection system or Facility.
 - (c) Perform public outreach to educate industrial, commercial, and residential users about the importance of preventing discharges of industrial and toxic wastes to the wastewater treatment plant, at least once per year.
 - (d) Perform on-going inspections and monitoring, as necessary, to ensure adequate source control.
 - (e) General Prohibitions. Pollutants introduced into wastewater treatment facilities (WWTFs) by a non-domestic source shall not pass through [40 CFR 403.3(n)] the WWTF or interfere [40 CFR 403.3(i)] with the operation or performance of the works. These general prohibitions and the specific prohibitions in paragraph (f) of this provision apply to all non-domestic sources introducing pollutants into a WWTF whether or not the source is subject to other National Pretreatment Standards or any national, state, or local pretreatment requirements.
 - (f) Specific Prohibitions. In addition, the following pollutants shall not be introduced into a WWTF:
 - (1) Pollutants that create a fire or explosion hazard in the WWTF;

- (2) Pollutants that will cause corrosive structural damage to the WWTF, but in no case discharges with pH lower than 5.0, unless the WWTF is specifically designed to accommodate such discharges;
 - (3) Solid or viscous pollutants in amounts that will cause obstruction to the flow in the WWTF resulting in interference;
 - (4) Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration that will cause interference with the WWTF;
 - (5) Heat in amounts that will inhibit biological activity in the WWTF resulting in interference, but in no case heat in such quantities that the temperature at the WWTF exceeds 40°C (104°F) unless the Regional Water Board, upon request of the Permittee, approves alternate temperature limits;
 - (6) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interferences or pass through; and
 - (7) Pollutants that result in the presence of toxic gases, vapors, or fumes within the WWTF in a quantity that may cause acute worker health and safety problems.
- ii. In the event that the Permittee identifies industrial wastes subject to regulation under the NPDES Pretreatment Program being discharged to the wastewater treatment plant, or the Regional Water Board or its Executive Officer determines that circumstances warrant pretreatment requirements in order to prevent interference [40 C.F.R. §403.3(j)] with the wastewater treatment Facility or Pass Through [40 C.F.R. §403.3(n)], then:
- (a) The Permittee shall notify the Regional Water Board **within 30 days** after there are discharges that trigger the pretreatment requirements;
 - (b) The Permittee shall submit a revised report of waste discharge (ROWD) and the pretreatment program for the Regional Water Board's review and approval as soon as possible, but **not more than one year after the Permittee's notification** to the Regional Water Board of the need for pretreatment requirements being triggered;
 - (c) The Permittee shall enforce the federal categorical pretreatment standards on all categorical industrial users (CIUs);
 - (d) The Permittee shall notify each CIU of its discharge effluent limits. The limits must be as stringent as the pretreatment standards contained in the applicable federal category (40 C.F.R. part 400-699). The Permittee may develop more stringent, technology-based local limits if it can show cause; and
 - (e) The Permittee shall notify the Regional Water Board if any CIU violates its discharge effluent limits.

- iii. The Regional Water Board retains the right to take legal action against an industrial user and/or the Permittee where a user fails to meet the approved applicable federal, state, or local pretreatment standards.
 - iv. The Regional Water Board may amend this Order, at any time, to require the Permittee to develop and implement an industrial pretreatment program pursuant to the requirements of 40 C.F.R. part 403 if the Regional Water Board finds that the Facility receives pollutants from an industrial user that is subject to pretreatment standards, or if other circumstances so warrant.
- c. Sludge Disposal and Handling Requirements**
- i. Sludge, as used in this Order, means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screenings generated during preliminary treatment. Biosolids refers to sludge that has been treated, tested, and demonstrated to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.
 - ii. All collected sludges and other solid waste removed from liquid wastes shall be removed from screens, sumps, ponds, and tanks as needed to ensure optimal plant operation and disposed of in accordance with applicable federal and state regulations.
 - iii. The use and disposal of biosolids shall separately comply with all of the land application and disposal requirements in 40 C.F.R. part 503, which are enforceable by the U.S. EPA, not the Regional Water Board. If during the life of this Order, the state accepts primacy for implementation of 40 C.F.R. part 503, the Regional Water Board may also initiate enforcement where appropriate.
 - iv. Sludge or biosolids that are disposed of in a municipal solid waste landfill or used as daily landfill cover shall meet the applicable requirements of 40 C.F.R. part 258. In the annual self-monitoring report, the Permittee shall report the amount of sludge placed in a landfill and the landfill(s) that received the sludge or biosolids.
 - v. The Permittee shall take all reasonable steps to prevent and minimize any sludge use or disposal in violation of this Order that may adversely affect human health or the environment.
 - vi. Solids and sludge treatment, storage, and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, and shall not result in groundwater contamination.
 - vii. Solids and sludge treatment and storage sites shall have facilities adequate to divert surface water runoff from adjacent areas, to protect the boundaries of the site from erosion, and to prevent drainage from the treatment and storage site. Adequate protection is defined as protection from a design storm with a 100-year recurrence interval and 24-hour duration.
 - viii. The discharge of sewage sludge and solids shall not cause waste material to be in a position where it is, or can be, conveyed from the treatment and storage sites and deposited in the waters of the state.

d. Biosolids Management

For any discharge of biosolids from the Facility, the Permittee shall comply with the following requirements:

- i. For the land application of biosolids as a soil amendment to areas outside the California Coastal Zone, as defined in and mapped pursuant to Public Resources Code section 30103, within the North Coast Region, the Permittee shall separately obtain or maintain coverage under the State Water Board Water Quality Order No. 2004-0012-DWQ General WDRs for the Discharge of Biosolids to Land or Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities.
- ii. For the land application of biosolids as a soil amendment in the California Coastal Zone, as defined in and mapped pursuant to Public Resources Code section 30103, the Permittee shall submit a report of waste discharge.
- iii. Alternatively, the Permittee may dispose of biosolids at another appropriately permitted facility.
- iv. New sludge treatment and storage facilities must comply with the requirements of the Water Code and title 27 of the CCR for the protection of water quality.

e. Operator Certification

Supervisors and operators of municipal wastewater treatment facilities shall possess a certificate of appropriate grade in accordance with title 23, CCR, section 3680. The State Water Board may accept experience in lieu of qualification training. In lieu of a properly certified wastewater treatment facility operator, the State Water Board may approve use of a water treatment facility operator of appropriate grade certified by DDW where water recycling is involved.

f. Adequate Capacity

If the Facility will reach capacity within 4 years, the Permittee shall notify the Regional Water Board. A copy of such notification shall be sent to appropriate local elected officials, local permitting agencies, and the press. Factors to be evaluated in assessing reserve capacity shall include, at a minimum, (1) comparison of the wet weather design flow with the highest daily flow, and (2) comparison of the average dry weather design flow with the lowest 30-day flow. The Permittee shall demonstrate that adequate steps are being taken to address the capacity problem. The Permittee shall submit a technical report to the Regional Water Board showing how flow volumes will be prevented from exceeding capacity, or how capacity will be increased, **within 120 days after providing notification to the Regional Water Board**, or within 120 days after receipt of Regional Water Board notification that the Facility will reach capacity within 4 years. The time for filing the required technical report may be extended by the Regional Water Board. The Executive Officer may grant an extension of up to 30 days, and the Regional Water Board itself may grant longer extensions. [CCR title 23, section 2232].

6. Other Special Provisions

a. Storm Water

For the control of storm water discharge from the Facility, if required, the Permittee shall seek separate authorization to discharge under the requirements of the State Water Board's Water Quality Order No. 2014-0057-DWQ, NPDES General Permit No. CAS000001, General Permit for Storm Water Discharges Associated with Industrial Activities (or subsequent renewed versions of the NPDES General Permit CAS000001), which is not incorporated by reference in this Order.

BMPs to control the run-on of storm water to the Facility site shall be maintained and upgraded as necessary. The Permittee shall describe the effectiveness of these storm water BMPs, as well as activities to maintain and upgrade these BMPs during the previous year, in its annual report to the Regional Water Board.

7. Compliance Schedules – Not Applicable

This Order does not establish interim effluent limitations or schedules of compliance for final numeric effluent limitations.

VII. COMPLIANCE DETERMINATION

Compliance with the prohibitions and effluent limitations contained in sections III and IV of this Order will be determined as specified below.

A. General

Compliance with effluent limitations for priority pollutants, when effluent limitations have been established, shall be determined using sample reporting protocols defined in the MRP and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Permittee shall be deemed out of compliance with effluent limitations if the concentration of pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported ML.

B. Multiple Sample Data

When determining compliance with an average monthly effluent limitation (AMEL) for priority pollutants, and more than one sample result is available, the Permittee shall compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or ND. In those cases, the Permittee shall compute the median in place of the arithmetic mean in accordance with the following procedure.

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two middle values 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 and a value of zero shall be used for the ND or DNQ value in the median calculation for compliance purposes only.

Using a value of zero for DNQ or ND samples does not apply when performing reasonable potential or antidegradation analysis.

C. Average Monthly Effluent Limitation

If the average (or when applicable, the median determined by subsection B, above, for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Permittee will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Permittee will be considered out of compliance for that calendar month. The Permittee will only be considered out of compliance for days when the discharge occurs. If there are ND or DNQ results for a specific constituent in a calendar month, the Permittee shall calculate the median of all sample results within that month for compliance determination with the AMEL as described in section VII.B, above.

D. Average Weekly Effluent Limitation (AWEL)

If the average (or when applicable, the median determined by subsection B, above, for multiple sample data) of daily discharges over a calendar week exceeds the AWEL for a given parameter, this will represent a single violation, though the Permittee will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of non-compliance. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Permittee will be considered out of compliance for that calendar week. The Permittee will only be considered out of compliance for days when the discharge occurs. If there are ND or DNQ results for a specific constituent in a calendar week, the Permittee shall calculate the median of all sample results within that week for compliance determination with the AWEL as described in section VII.B, above.

E. Maximum Daily Effluent Limitation (MDEL)

If a daily discharge (or when applicable, the median determined by subsection B, above, for multiple sample data of a daily discharge) exceeds the MDEL for a given parameter, the Permittee will be considered out of compliance for that parameter for that 1 day only within the reporting period.

F. Instantaneous Minimum Effluent Limitation

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, the Permittee will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of non-compliance with the instantaneous minimum effluent limitation).

If the Permittee monitors pH continuously, pursuant to 40 C.F.R. section 401.17, the Permittee shall be in compliance with the pH limitation specified herein provided that both of the following conditions are satisfied: (1) the total sum of time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (2) no individual excursion from the range of pH values shall exceed 60 minutes.

G. Instantaneous Maximum Effluent Limitation

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, the Permittee will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

If the Permittee monitors pH continuously, pursuant to 40 C.F.R. section 401.17, the Permittee shall be in compliance with the pH limitation specified herein provided that both of the following conditions are satisfied: (1) the total sum of time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month; and (2) no individual excursion from the range of pH values shall exceed 60 minutes.

H. Bacteriological Limitations (Total Coliform)

- 1. Median.** The median is the central tendency concentration of the pollutant. The data set shall be ranked from low to high, ranking the ND concentrations lowest, followed by quantified values. The median value is determined based on the number of data points in the set. 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, the median is the average of the two middle values, unless one or both points are ND or DNQ, in which case the median value shall be the lower of the two middle data points. DNQ is lower than a detected value, and ND is lower than DNQ.
- 2.** Compliance with the monthly median will be determined on a monthly basis by calculating the median of the weekly samples collected during the month, as described in VII.H.1, immediately above.

I. Acute Toxicity Limitations

Compliance with the three-sample median acute toxicity effluent limitation shall be determined when there is a discharge, by calculating the median percent survival of the three most recent consecutive samples meeting all test acceptability criteria collected from Monitoring Location EFF-001.

Compliance with the accelerated monitoring and TRE provisions shall constitute compliance with the acute toxicity requirements, all specified in the MRP (Attachment E, sections V.A and V.C).

J. Chronic Toxicity

Compliance with the accelerated monitoring and TRE provisions specified in the MRP (Attachment E, sections V.B.8 and V.C) shall constitute compliance with the narrative chronic toxicity requirement specified as Effluent Limitation IV.A.1.e. The MRP, section V.B.6.a, further describes how a determination of Pass/Fail shall be made.

K. Average Dry Weather Flow

Compliance with the average dry weather flow prohibition in section III.H of this Order will be determined once each calendar year by evaluating all flow data collected at Monitoring Location INF-001 in a calendar year. The flow through the facility, measured daily and averaged monthly, must be 0.55 mgd or less for the month with the lowest average monthly flow.

L. Peak Daily Wet Weather Flow

The peak daily wet weather flow is the maximum flow rate that occurs over a 24-hour period. Compliance with the peak daily wet weather flow prohibition in section III.H of this Order will be determined daily by measuring the daily average flow at Monitoring Point INF-001. If the measured daily average flow exceeds 0.95 mgd, the discharge does not comply with Prohibition III.H of this Order.

DRAFT

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 Pollutants

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.

Coefficient of Variation (CV)

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 one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

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

Detected, but Not Quantified (DNQ)

Sample results that are less than the reported Minimum Level, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit

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.

Effective Concentration (EC)

A point estimate of the toxicant concentration that would cause an adverse effect on a quantal, “all or nothing,” response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Kärber. EC25 is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.

Effluent Concentration Allowance (ECA)

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

Enclosed Bays

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 headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

Estimated Chemical Concentrations

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

Estuaries and Coastal Lagoons are waters at the mouths of streams that serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams that are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, Russian, San Diego, and Otay Rivers. Estuaries do not include inland surface waters or ocean waters.

Inhibition Concentration (IC)

The IC25 is typically calculated as a percentage of effluent. It is the level at which the organisms exhibit 25 percent reduction in biological measurement such as reproduction or growth. It is calculated statistically and used in chronic toxicity testing.

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).

Lowest Observed Effect Concentration (LOEC)

The lowest concentration of an effluent or toxicant that results in adverse effects on the test organism (i.e., where the values for the observed endpoints are statistically different from the control).

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)

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 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)

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

Mixing Zone

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

Not Detected (ND)

Those sample results less than the laboratory's MDL.

No Observed Effect Concentration (NOEC)

The highest tested concentration of an effluent or a test sample at which the effect is no different from the control effect, according to the statistical test used (see LOEC). The NOEC is usually the highest tested

concentration of an effluent or toxicant that causes no observable effects on the aquatic test organisms (i.e., the highest concentration of toxicity at which the values for the observed responses do not statistically differ from the controls). It is determined using hypothesis testing.

Persistent Pollutants

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 Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention

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 Regional Water Board.

Publicly Owned Treatment Works (POTW)

A treatment works as defined in section 212 of the Clean Water Act (CWA), which is owned by a State or municipality as defined by section 502(4) of the CWA. [Section 502(4) of the CWA defines a municipality as a city, town, borough, county, parish, district, association, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes). This definition includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the CWA, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.

Recycled Water

Water that, as a result of treatment of municipal wastewater, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource (Water Code section 13050). The terms "recycled water" and "reclaimed water" have the same meaning (Water Code section 26).

Reporting Level (RL)

The RL is the ML (and its associated analytical method) chosen by the Permittee for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for

reporting a sample result that are selected by the Regional 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.

Septage

Defined as the liquid or solid material removed from a septic tank, cesspool, portable toilet, type III marine sanitation device, recreational vehicle's sanitation tank, or similar storage or treatment works that receives domestic waste.

Source of Drinking Water

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

Standard Deviation (σ)

A measure of variability that is calculated as follows:

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

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)

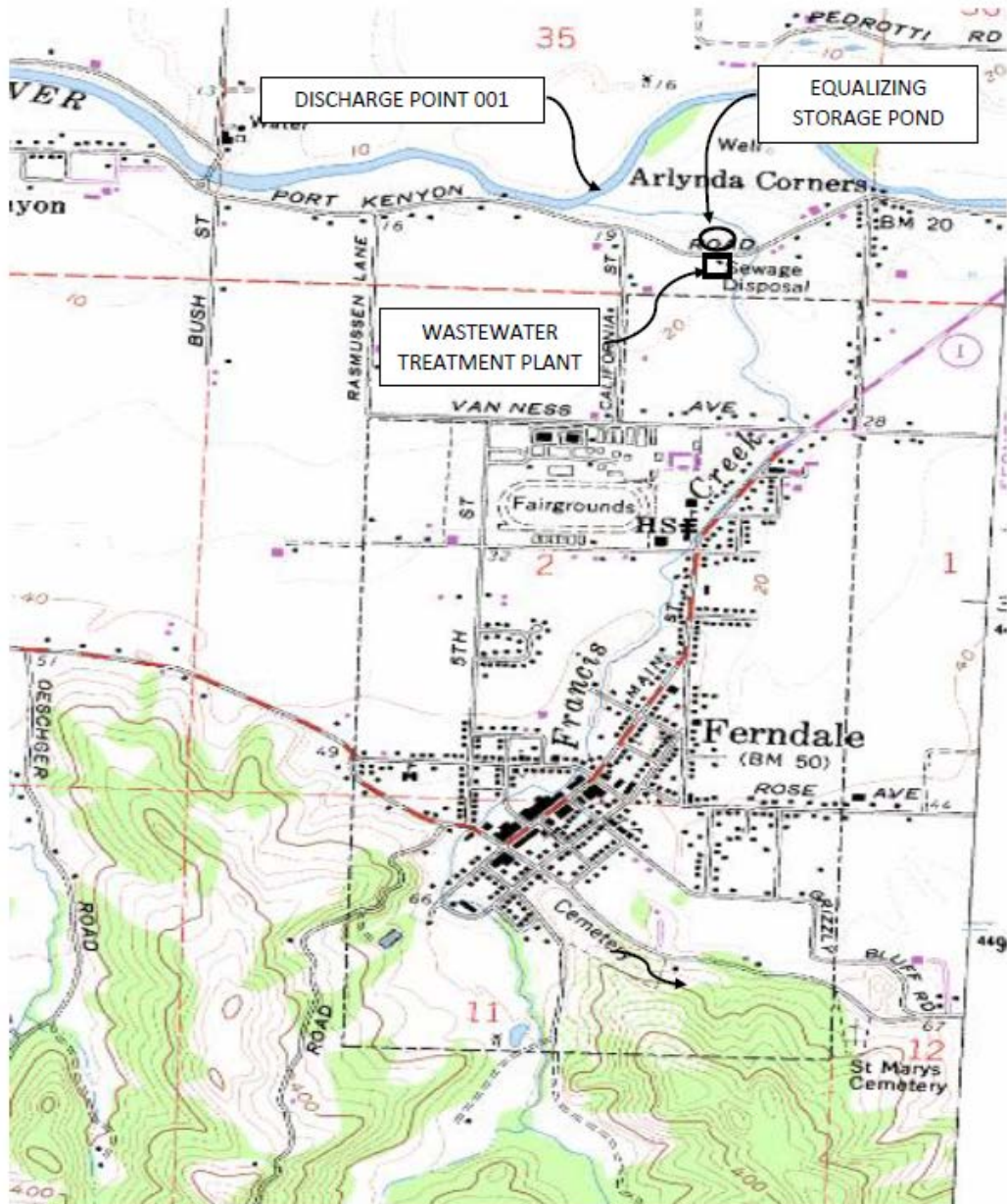
A study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection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

Test of Significant Toxicity (TST)

The statistical approach described in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R10-003, 2010). The TST was developed by the U.S. Environmental Protection Agency (EPA) for analyzing WET and ambient toxicity data. Using the TST approach, the sample is declared toxic if there is greater than or equal to a 25% effect in chronic tests, or if there is greater than or equal to a 20% effect in acute tests at the permitted instream waste concentration (IWC) (referred to as the toxic regulatory management decision (RMD)). The sample is declared non-toxic if there is less than or equal to a 10% effect at the IWC in acute or chronic tests (referred to as the non-toxic RMD).

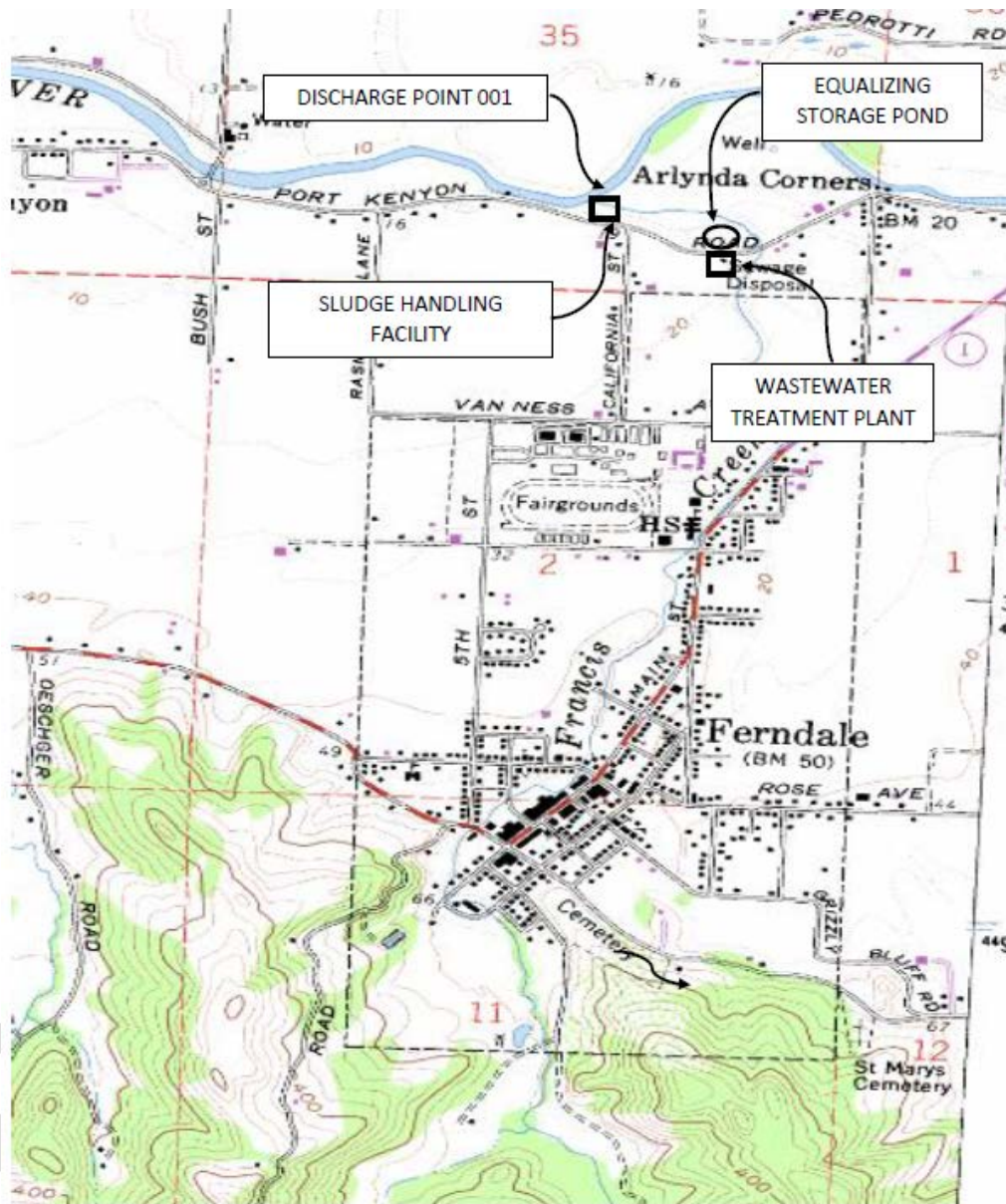
ATTACHMENT B - MAP

Figure B-1. Waste Water Treatment Plant Location Map



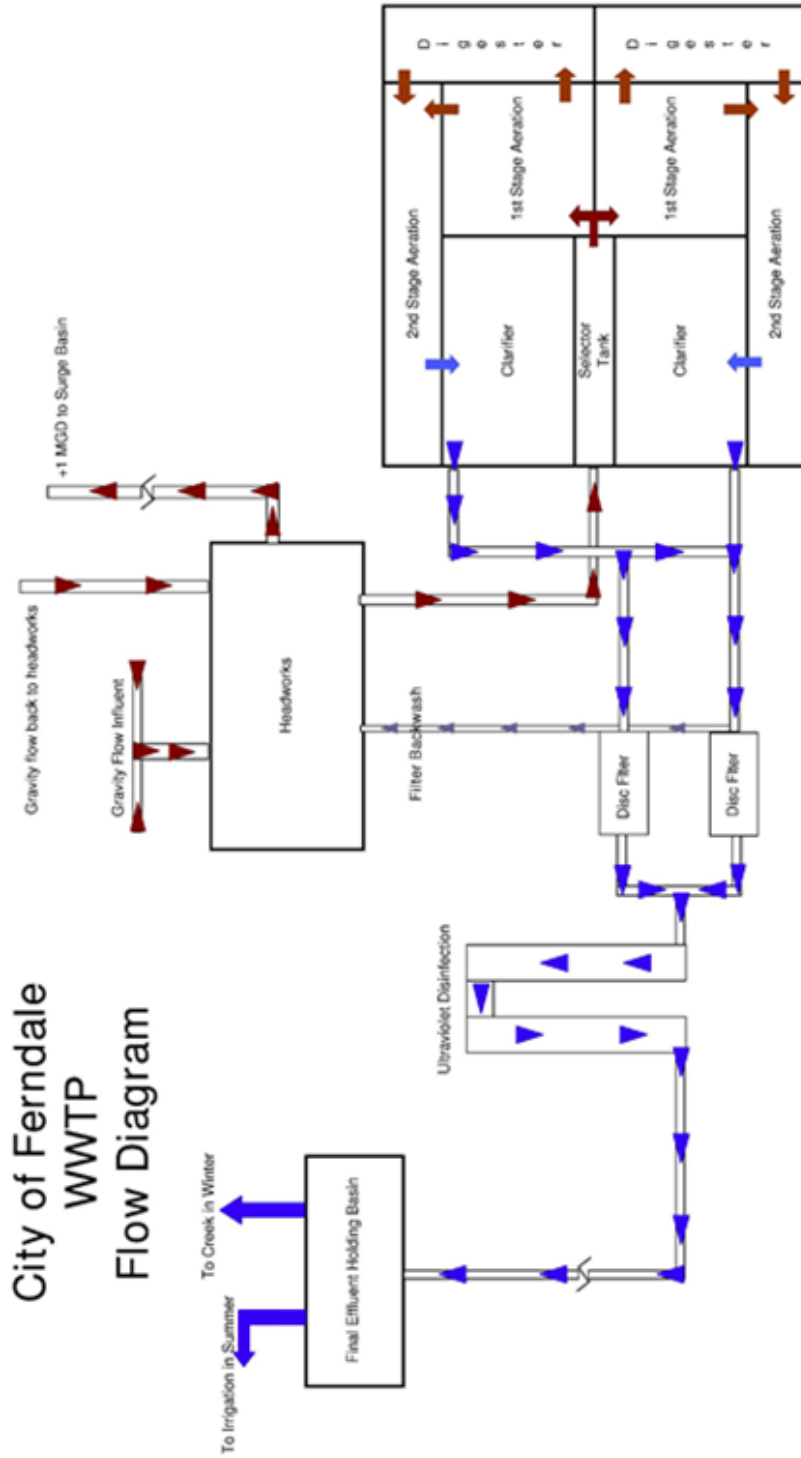
<p>CITY OF FERNDALE LOCATION MAP LOST COAST ENGINEERING JULY 23, 2017</p>	<p>FIGURE 1 NPDES APPLICATION</p>
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Figure B-2. Sludge Handling Facility Location Map



<p>CITY OF FERNDALE</p> <p>SLUDGE HANDLING FACILITY</p> <p>LOST COAST ENGINEERING</p> <p>AUGUST 3, 2017</p>	<p>FIGURE 2</p> <p>NPDES</p> <p>APPLICATION</p>
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ATTACHMENT C - FLOW SCHEMATIC



City of Ferndale
WWTP
Flow Diagram

ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Permittee 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 and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 130001, 13304, 13350, 13385.)
2. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

The Permittee 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 Permittee 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 Permittee only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

E. Property Rights

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

F. Inspection and Entry

The Permittee shall allow the Regional Water Board, State Water Board, U.S. EPA, and/or their authorized representatives (including an authorized contractor acting as their representative),

upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. § 1318(a)(4)(b); 40 C.F.R. § 122.41(i); Wat. Code, §§ 13267, 13383):

1. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(b)(i); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(b)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. § 1318(a)(4)(b)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, §§ 13267, 13383); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C. § 1318(a)(4)(b); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

G. Bypass

1. Definitions

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

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

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

- a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
- b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
- c. The Permittee submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)

4. **Burden of Proof.** In any enforcement proceeding, the permittee seeking to establish the bypass defense has the burden of proof.
5. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)
6. **Notice**
 - a. **Anticipated bypass.** If the Permittee knows in advance of the need for a bypass, it shall submit a prior notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)
 - b. **Unanticipated bypass.** The Permittee shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

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

1. **Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)
2. Conditions necessary for a demonstration of upset. A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Permittee can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));
 - c. The Permittee submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
 - d. The Permittee complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)
3. **Burden of Proof.** In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

A. Monitoring must be conducted according to test procedures under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. chapter 1, subchapters N or O. Monitoring must be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. part 136 for the analysis of pollutants or pollutant parameters or required under 40 C.F.R. chapter 1, subchapter N or O. For the purposes of this paragraph, a method is “sufficiently sensitive” when:

1. The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter, and, either the method ML is at or below the level of the applicable water quality criterion for the measured pollutant or pollutant parameter or the method ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility’s discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or
2. The method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N or O for the measured pollutant or pollutant parameter.

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

In the case of sludge use or disposal approved under 40 C.F.R. part 136, monitoring must be conducted according to test procedures in part 503 unless otherwise specified in 40 C.F.R. or other test procedures have been specified in this Order.

IV. STANDARD PROVISIONS – RECORDS

- A.** Except for records of monitoring information required by this Order related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the Permittee 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 Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)
- B. Records of monitoring information shall include:**
1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
 2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
 3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
 4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
 5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
 6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)
- C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):**
1. The name and address of any permit applicant or Permittee (40 C.F.R. § 122.7(b)(1)); and
 2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Permittee shall furnish to the Regional Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Regional Water Board, State Water Board, or U.S. EPA 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 Permittee shall also furnish to the Regional Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3).)

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and
 - c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)
5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” (40 C.F.R. § 122.22(d).)
6. Any person providing the electronic signature for documents described in Standard Provisions – V.B.1, V.B.2, or V.B.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting V.B, and shall ensure that all relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R. § 122.22(e).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting

results of monitoring, sludge use, or disposal practices. As of December 21, 2016, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J and comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(l)(4)(i).)

3. If the Permittee monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. chapter 1, subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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

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

As of December 21, 2020, all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted to the Regional Water Board and must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J. The reports shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. The Regional Water Board may also require the Permittee to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(6)(i).)

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

- a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
- b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
3. The Regional Water Board may waive the above-required written report under this provision on a case by case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. § 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Permittee shall give advance notice to the Regional Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

The Permittee 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. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting V.E and the applicable required data in appendix A to 40 C.F.R. part 127. The Regional Water Board may also require the Permittee to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

When the Permittee 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

Regional Water Board, State Water Board, or U.S. EPA, the Permittee shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

J. Initial Recipient for Electronic Reporting Data

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 C.F.R. § 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of this Order (40 C.F.R. § 122.42(b)(2)).
3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3)).

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 C.F.R. § 122.48) requires that all National Pollutant Elimination Discharge (NPDES) permits specify monitoring and reporting requirements. California Water Code (Water Code) section 13383 also authorizes the Regional Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and California regulations.

I. GENERAL MONITORING PROVISIONS

- A. Wastewater Monitoring Provision.** Composite samples may be taken by a proportional sampling device approved by the Executive Officer or by grab samples composited in proportion to flow. In compositing grab samples, the sampling interval shall not exceed 1 hour.
- B. Supplemental Monitoring Provision.** If the Permittee monitors any pollutant more frequently than required by this Order, using test procedures approved by 40 C.F.R. part 136 or as specified in this Order, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the monthly and annual discharge monitoring reports.
- C. Laboratory Certification.** Laboratories analyzing monitoring samples shall be certified by the State Water Resources Control Board (State Water Board) in accordance with the provisions of Water Code section 13176, and must include quality assurance/quality control data with their analytical reports.
- D. Instrumentation and Calibration Provision.** All monitoring instruments and devices used by the Permittee to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated no less than the manufacturer's recommended intervals or one year intervals, (whichever comes first) to ensure continued accuracy of the devices.
- E. Minimum Levels (ML) and Reporting Levels (RL).** Unless otherwise specified by this MRP, all monitoring shall be conducted according to test procedures established at 40 C.F.R. 136, *Guidelines Establishing Test Procedures for Analysis of Pollutants*. All analyses shall be conducted using the lowest practical quantitation limit achievable using U.S. Environmental Protection Agency (U.S. EPA) approved methods. For the purposes of the NPDES program, when more than one test procedure is approved under 40 C.F.R., part 136 for the analysis of a pollutant or pollutant parameter, the test procedure must be sufficiently sensitive as defined at 40 C.F.R. 122.21(e)(3) and 122.44(i)(1)(iv). Where effluent limitations are set below the lowest achievable quantitation limits, pollutants not detected at the lowest practical quantitation limits will be considered in compliance with effluent limitations. Analysis for toxics listed by the California Toxics Rule (CTR) shall also adhere to guidance and requirements contained in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (2005) (SIP). However, there may be situations when analytical methods are published with MLs that are more sensitive than the MLs for analytical methods listed in the SIP. For instance, U.S. EPA Method 1631E for mercury is not currently listed in SIP Appendix 4, but it is published with an ML of 0.5 ng/L that makes it a sufficiently sensitive analytical method. Similarly, U.S. EPA Method 245.7 for mercury is published with an ML of 5 ng/L.

F. Discharge Monitoring Report Quality Assurance (DMR-QA) Study. The Permittee shall ensure that the results of the DMR-QA Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board at the following address:

State Water Resources Control Board
 Quality Assurance Program Officer
 Office of Information Management and Analysis
 1001 I Street, Sacramento, CA 95814

II. MONITORING LOCATIONS

The Permittee 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	Influent at the headworks of the wastewater treatment plant (WWTP) prior to treatment.
--	INT-001	Location for monitoring turbidity after the filtration process and prior to the ultraviolet light (UV) disinfection process
--	INT-002	Location for monitoring UV radiation dose and UV transmittance of the UV disinfection system.
001	EFF-001	Treated effluent downstream of the disinfection processes and before the effluent comes in contact with the receiving water.
002	EFF-002	Treated effluent downstream of disinfection processes and before effluent application to recycled water use area(s).
--	RSW-001	Upstream receiving water monitoring location in Francis Creek at the Van Ness Avenue bridge and upstream of Discharge Point 001. For flow monitoring only.
--	RSW-002	Upstream receiving water monitoring location in the Salt River downstream of the outlet from the Francis Creek sediment management area and upstream of the confluence with the natural drainage channel receiving discharges from Discharge Point 001.
--	RSW-003	Downstream receiving water monitoring location within 50 feet downstream of the confluence of the natural drainage channel with the Salt River, or other location approved by the Executive Officer.
--	BIO-001	A representative sample of the sludge or biosolids generated when removed for disposal.
--	SEP-001	Monitoring of each septage load for pH.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Permittee shall monitor influent to the Facility at Monitoring Location INF-001 as follows:

Table E-2. Influent Monitoring – Monitoring Location INF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Influent Flow ¹	mgd	Meter	Continuous	--
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	24-hr Composite	Monthly	Part 136 ²
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Monthly	Part 136 ²
Table Notes:				
1. The Permittee shall report the average daily and average monthly flows.				
2. Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board.				

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. During periods of surface water discharge, the Permittee shall monitor effluent to be discharged to the natural drainage channel tributary to the Salt River at Monitoring Location EFF-001 as follows:

Table E-3. Effluent Monitoring – Monitoring Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Effluent Flow ¹	mgd	Meter	Continuous	--
Dilution Rate	% of stream flow	Calculation	Daily	--
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	24-hr Composite	Weekly ²	Part 136 ³
	% Removal	Calculate	Monthly	--
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Weekly ²	Part 136 ³
	% Removal	Calculate	Monthly	--
pH ⁵	s.u.	Grab	Weekly ²	Standard Methods ³
Temperature ⁵	°C	Grab	Monthly	Standard Methods ³
Settleable Solids	ml/L	24-hr Composite	Weekly ²	Standard Methods ³
Total Coliform Bacteria	MPN/100 mL	Grab	Weekly ²	Part 136 ³
Ammonia Nitrogen, Total (as N)	mg/L	Grab	Monthly ⁵	Part 136 ³

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Ammonia Nitrogen, Unionized	mg/L	Calculation	Monthly	--
Ammonia Impact Ratio ⁵		Calculation	Monthly ⁴	--
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Monthly	Part 136 ³
Nitrite Nitrogen, Total (as N)	mg/L	Grab	Monthly	Part 136 ³
Organic Nitrogen, Total	mg/L	Grab	Monthly	Part 136 ³
Nitrogen, Total (as N) ⁶	mg/L	Calculation	Monthly ⁴	Part 136 ³
Phosphorus, Total (as P)	mg/L	Grab	Monthly	Part 136 ³
Specific Conductance	µmhos/cm	Grab	Monthly ⁷	Part 136 ³
Total Dissolved Solids	mg/L	Grab	Monthly ⁷	Part 136 ³
2,3,7,8-TCDD	µg/L	Grab	Three times per permit term ^{4,8}	Part 136 ³
CTR Priority Pollutants ⁹	µg/L	24-hr Composite ¹⁰	Once per permit term ¹¹	Part 136 ^{3,12}
Acute Toxicity ¹³	% Survival, Pass or Fail, and % Effect	24-hr Composite	Annually ¹⁴	See Section V below
Chronic Toxicity ¹³	Pass or Fail, and % Effect	24-hr Composite	Annually ¹⁴	See Section V below

Table Notes:

- The Permittee shall report the daily average and monthly average flows.
- Accelerated Monitoring (weekly monitoring frequency). If two consecutive weekly test results exceed an effluent limitation, the Permittee shall take two samples each of the two weeks following receipt of the second sample result. During the intervening period, the Permittee shall take steps to identify the cause of the exceedance and take steps to return to compliance.
- Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).
- Accelerated Monitoring (monthly and three times per permit term monitoring frequency). If a test result exceeds an effluent limitation, the Permittee shall take two more samples, one within 7 days and one within 14 days following receipt of the initial sample result. During the intervening period, the Permittee shall take steps to identify the cause of the exceedance and take steps needed to return to compliance.
- Monitoring for pH and Temperature at RSW-001 must be conducted concurrently with the ammonia effluent sample in order for the AMEL and MDEL AIR to be calculated properly.
- The sum of the concentrations of nitrate nitrogen, nitrite nitrogen, total organic nitrogen, and ammonia.
- After two years of monitoring, the data will be evaluated to determine whether or not the concentration of TDS and SC in the discharge is impacting the water quality of the Salt River. If the results demonstrate that the discharge is not negatively impacting the Salt River, monitoring requirements may be reduced or eliminated.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
<u>Table Notes (continued)</u>				
8. 2,3,7,8-TCDD monitoring shall occur in the first three years of the permit term during periods of discharge to the natural drainage tributary to the Salt River.				
9. Those pollutants identified by the California Toxics Rule at 40 C.F.R. section 131.38. The Permittee is not required to sample and analyze for asbestos. Hardness shall be monitored concurrently with the priority pollutant sample.				
10. CTR pollutant samples shall be collected using 24-hour composite sampling, except for pollutants that are volatile. Samples for volatile pollutants may be collected as grab samples.				
11. CTR priority pollutant sampling shall be completed no later than April 15, 2023 during a period of discharge to the natural drainage channel tributary to the Salt River. Effluent and receiving water monitoring shall occur concurrently.				
12. Analytical methods must achieve the lowest ML specified in Appendix 4 of the SIP and, in accordance with section 2.4 of the SIP, the Permittee shall report the ML and method detection limit (MDL) for each sample result.				
13. Whole effluent acute and chronic toxicity shall be monitored in accordance with the requirements of section V of this MRP.				
14. Monitoring shall occur once during the first three months of surface water discharge each year in order to provide sufficient time for accelerated monitoring, if necessary.				

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing

The Permittee shall conduct acute whole effluent toxicity testing (WET) in accordance with the following acute toxicity testing requirements.

1. **Test Frequency.** The Permittee shall conduct acute WET testing in accordance with the schedule established by this MRP while discharging at Discharge Point 001, as summarized in Table E-3, above.
2. **Discharge In-stream Waste Concentration (IWC) for Acute Toxicity.** The IWC for this discharge is 100 percent effluent.¹
3. **Sample Volume and Holding Time.** The total sample volume shall be determined by the specific toxicity test method used. Sufficient sample volume shall be collected to perform the required toxicity test. All toxicity tests shall be conducted as soon as possible following sample collection. No more than 36 hours shall elapse before the conclusion of sample collection and test initiation.
4. **Freshwater Test Species and Test Methods.** The Permittee shall conduct the following acute toxicity tests in accordance with species and test methods in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (U.S. EPA Report No. EPA-821-R-02-012, 5th edition or subsequent editions). In no case shall these species be substituted with another test species unless written authorization from the Executive Officer is received.
 - a. A 96-hour static renewal toxicity test with an invertebrate, the water flea, *Ceriodaphnia dubia* (Survival Test Method 2002.0).
 - b. A 96-hour static renewal toxicity test with a vertebrate, the rainbow trout, *Oncorhynchus mykiss* (Survival Test Method 2019.0).

¹ The acute toxicity test shall be conducted using 100 percent effluent collected at Monitoring Location EFF-001.

5. **Species Sensitivity Screening.** Species sensitivity screening shall be conducted during this permit's first required sample collection. The Permittee shall collect a single effluent sample and concurrently conduct two acute toxicity tests using the invertebrate and fish species identified in section V.A.4, above. This sample shall also be analyzed for the parameters required for the discharge. The species that exhibits the highest "Percent (%) Effect" at the discharge IWC during species sensitivity screening shall be used for routine acute toxicity monitoring during the permit term.
6. **Quality Assurance and Additional Requirements.** Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual referenced in section V.A.4, above. Additional requirements are specified below.
 - a. The discharge is subject to determination of "Pass" or "Fail" and "Percent (%) Effect" from acute toxicity tests using the Test of Significant Toxicity (TST) approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R10-003, 2010), Appendix A, Figure A-1, and Table A-1. The null hypothesis (H_0) for the TST approach is: Mean discharge IWC response $\leq 0.80 \times$ Mean control response. A test result that rejects this null hypothesis is reported as "Pass". A test result that does not reject this null hypothesis is reported as "Fail". The relative "Percent (%) Effect" at the discharge IWC is defined and reported as: $((\text{Mean control response} - \text{Mean discharge IWC response}) \div \text{Mean control response}) \times 100$.
 - b. If the effluent toxicity test does not meet the minimum effluent test acceptability criteria (TAC) specified in the referenced test method, then the Permittee shall re-sample and re-test within 7 days.
 - c. Dilution water and control water shall be laboratory water prepared and used as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.
 - d. Test procedures related to pH control, sample filtration, aeration, temperature control and sample dechlorination shall be performed in accordance with the U.S. EPA method and fully explained and justified in each acute toxicity report submitted to the Regional Water Board. The control of pH in acute toxicity tests is allowed, provided the test pH is maintained at the effluent pH measured at the time of sample collection, and the control of pH is done in a manner that has the least influence on the test water chemistry and on the toxicity of other pH sensitive materials such as some heavy metals, sulfide and cyanide.
 - e. **Ammonia Toxicity.** The acute toxicity test shall be conducted without modifications to eliminate ammonia toxicity.
7. **Notification.** The Permittee shall notify the Regional Water Board verbally within 72 hours and in writing 14 days after receipt of test results exceeding the acute toxicity effluent limitation during regular or accelerated monitoring. The notification shall describe actions the Permittee has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status report on any actions required by this Order, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.

8. **Accelerated Monitoring Requirements.** If the result of any acute toxicity test fails to meet the single test minimum limitation (70 percent survival), and the testing meets all TAC, the Permittee shall take two more samples, one within 14 days and one within 21 days following receipt of the initial sample result. If any one of the additional samples do not comply with the three-sample median minimum limitation (90 percent survival), the Permittee shall initiate a Toxicity Reduction Evaluation (TRE) in accordance with section V.C of the MRP. If the two additional samples are in compliance with the acute toxicity requirement and testing meets all TAC, then a TRE will not be required. If the discharge stops before additional samples can be collected, the Permittee shall contact the Executive Officer within 21 days with a plan to demonstrate compliance with the effluent limitation.
9. **Reporting.** The Self-Monitoring Report (SMR) shall include a full laboratory report for each toxicity test (WET report). The WET report shall be prepared using the format and content of section 12 (Report Preparation) of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (U.S. EPA Report No. EPA-821-R-02-012, 5th edition or subsequent editions), including:
 - a. The toxicity test results in percent (%) survival for the 100 percent effluent sample.
 - b. The toxicity test results for the TST approach, reported as “Pass” or “Fail” and “Percent (%) Effect” at the acute toxicity IWC for the discharge.
 - c. Water quality measurements for each toxicity test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, chlorine, ammonia).
 - d. TRE/Toxicity Identification Evaluation (TIE) results. The Executive Officer shall be notified no later than 30 days from completion of each aspect of TRE/TIE analyses.
 - e. Statistical program (e.g., TST calculator, CETIS, etc.) output results for each toxicity test.

B. Chronic Toxicity Testing

The Permittee shall conduct chronic toxicity testing in accordance with the following chronic toxicity testing requirements:

1. **Test Frequency.** The Permittee shall conduct chronic toxicity testing in accordance with the schedule established by this MRP while discharging at Discharge Point 001, as summarized in Table E-3, above.
2. **Discharge IWC for Chronic Toxicity.** The chronic toxicity IWC for this discharge is 100 percent effluent.²
3. **Sample Volume and Holding Time.** The total sample volume shall be determined by the specific toxicity test method used. Sufficient sample volume shall be collected to perform the required toxicity test. All toxicity tests shall be conducted as soon as possible following sample collection. For toxicity tests requiring renewals, a minimum of three 24-hour composite samples shall be collected. The lapsed time (holding time) from sample collection to first use of each sample must not exceed 36 hours.

² The chronic toxicity test shall be conducted using a series of five dilutions and a control. The series shall consist of the following dilutions: 12.5, 25, 50, 75, and 100 percent. Compliance determination will be based on the IWC (100 percent effluent) and a control as further described in Fact Sheet section IV.C.5.c.

- 4. Freshwater Test Species and Test Methods.** The Permittee shall conduct the following chronic toxicity tests in accordance with species and test methods in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms* (U.S. EPA Report No. EPA-821-R-02-013 or subsequent editions). In no case shall these species be substituted with another test species unless written authorization from the Executive Officer is received.

 - a. A 7-day static renewal toxicity test with a vertebrate, the fathead minnow, *Pimephales promelas* (Larval Survival and Growth Test Method 1000.0).
 - b. A static renewal toxicity test with an invertebrate, the water flea, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.0).
 - c. A 96-hour static non-renewal toxicity test with a plant, the green algae, *Selenastrum capricornutum* (also named *Raphidocelis subcapitata*) (Growth Test Method 1003.0).
- 5. Species Sensitivity Screening.** Species sensitivity screening shall be conducted during this permit's first required sample collection. The Permittee shall collect a single effluent sample and concurrently conduct three chronic toxicity tests using the fish, the invertebrate, and the algae species identified in section V.B.4, above. This sample shall also be analyzed for the parameters required for the discharge. The species that exhibits the highest "Percent (%) Effect" at the discharge IWC during species sensitivity screening shall be used for routine monitoring during the permit term.
- 6. Quality Assurance and Additional Requirements.** Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are specified below.

 - a. The discharge is subject to determination of "Pass" or "Fail" and "Percent (%) Effect" for chronic toxicity tests using the TST approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R10-003, 2010), Appendix A, Figure A-1, and Table A-1. The null hypothesis (H_0) for the TST approach is: Mean discharge IWC response $0.75 \times$ Mean control response. A test result that rejects this null hypothesis is reported as "Pass". A test result that does not reject this null hypothesis is reported as "Fail". The relative "Percent (%) Effect" at the discharge IWC is defined and reported as: $((\text{Mean control response} - \text{Mean discharge IWC response}) \div \text{Mean control response}) \times 100$. The IWC for the chronic toxicity test is 100 percent effluent.
 - b. If the effluent toxicity test does not meet the minimum effluent or reference toxicant TAC specified in the referenced test method, then the Permittee shall re-sample and re-test within 14 days.
 - c. Dilution water and control water shall be laboratory water prepared and used as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.
 - d. Monthly reference toxicant testing is sufficient. All reference toxicant test results should be reviewed and reported.
 - e. The Permittee shall perform toxicity tests on final effluent samples. Chlorine and ammonia shall not be removed from the effluent sample prior to toxicity testing, unless

explicitly authorized under this section of the MRP and the rationale is explained in the Fact Sheet (Attachment F).

- f. **Ammonia Removal.** Except with prior approval from the Executive Officer of the Regional Water Board, ammonia shall not be removed from bioassay samples. The Permittee must demonstrate the effluent toxicity is caused by ammonia because of increasing test pH when conducting the toxicity test. It is important to distinguish the potential toxic effects of ammonia from other pH sensitive chemicals, such as certain heavy metals, sulfide, and cyanide. The following may be steps to demonstrate that the toxicity is caused by ammonia and not other toxicants before the Executive Officer would allow for control of pH in the test.
- i. There is consistent toxicity in the effluent and the maximum pH in the toxicity test is in the range to cause toxicity due to increased pH.
 - ii. Chronic ammonia concentrations in the effluent are greater than 4 mg/L total ammonia.
 - iii. Conduct graduated pH tests as specified in the toxicity identification evaluation methods. For example, mortality should be higher at pH 8 and lower at pH 6.
 - iv. Treat the effluent with a zeolite column to remove ammonia. Mortality in the zeolite treated effluent should be lower than the non-zeolite treated effluent. Then add ammonia back to the zeolite-treated samples to confirm toxicity due to ammonia.

When it has been demonstrated that toxicity is due to ammonia because of increasing test pH, pH may be controlled using appropriate procedures that do not significantly alter the nature of the effluent.

7. **Notification.** The Permittee shall notify the Regional Water Board verbally within 72 hours and in writing within 14 days after the receipt of a result of "Fail" during routine or accelerated monitoring.
8. **Accelerated Monitoring Requirements.** Accelerated monitoring for chronic toxicity is triggered when a chronic toxicity test, analyzed using the TST approach, results in "Fail" and the "Percent Effect" is ≥ 0.50 . Within 24 hours of the time the Permittee becomes aware of a summary result of "Fail", the Permittee shall implement an accelerated monitoring schedule consisting of four toxicity tests—consisting of 5-effluent concentrations (including the discharge IWC) and a control—conducted at approximately 2-week intervals, over an 8 week period. If each of the accelerated toxicity tests results is "Pass," the Permittee shall return to routine monitoring for the next monitoring period. If one of the accelerated toxicity test results is "Fail", the Permittee shall immediately implement the TRE Process conditions set forth in section V.C, below.
9. **Reporting**
 - a. **Routine Reporting.** Chronic toxicity monitoring results shall be submitted with the quarterly SMR for the quarter that chronic toxicity monitoring was performed. Routine reporting shall include the following in order to demonstrate compliance with permit requirements:

- i. WET reports shall include the contracting laboratory's complete report provided to the Permittee and shall be consistent with the appropriate "Report Preparation and Test Review" sections of the methods manual and this MRP. The WET test reports shall contain a narrative report that includes details about WET test procedures and results, including the following:
- (a) Receipt and handling of the effluent sample that includes a tabular summary of initial water quality characteristics (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, chlorine, ammonia);
 - (b) The source and make-up of the lab control/diluent water used for the test;
 - (c) Any manipulations done to lab control/diluent and effluent such as filtration, nutrient addition, etc.;
 - (d) Tabular summary of test results for control water and each effluent dilution and statistics summary to include calculation of the No Observed Effect Concentration (NOEC), TUC, and IC25;
 - (e) Identification of any anomalies or nuances in the test procedures or results;
 - (f) WET test results shall include, at a minimum, for each test:
 - (1) Sample date(s);
 - (2) Test initiation date;
 - (3) Test species;
 - (4) Determination of "Pass" or "Fail" and "Percent Effect" following the Test of Significant Toxicity hypothesis testing approach in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010). The "Percent Effect" shall be calculated as follows:
$$\text{"Percent Effect" (or Effect, in \%)} = ((\text{Control mean response} - \text{IWC mean response}) \div \text{Control mean response}) \times 100$$
 - (5) End point values for each dilution (e.g., number of young, growth rate, percent survival);
 - (6) NOEC value(s) in percent effluent;
 - (7) IC15, IC25, IC40, and IC50 values (or EC15, EC25...etc.) in percent effluent;
 - (8) TUC values (100/NOEC);
 - (9) Mean percent mortality (\pm s.d.) after 96 hours in 100 percent effluent (if applicable);
 - (10) NOEC and LOEC values for reference toxicant test(s);
 - (11) IC50 or EC50 value(s) for reference toxicant test(s);
 - (12) Available water quality measurements for each test (e.g., pH, DO, temperature, conductivity, hardness, salinity, ammonia);

- (13) Statistical methods used to calculate endpoints;
 - (14) The statistical program (e.g., TST calculator, CETIS, etc.) output results, which includes the calculation of percent minimum significant difference (PMSD); and
 - (15) Results of applicable reference toxicant data with the statistical output page identifying the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD and dates tested; the reference toxicant control charts for each endpoint, to include summaries of reference toxicant tests performed by the contracting laboratory; and any information on deviations from standard test procedures or problems encountered in completing the test and how the problems were resolved.
- b. **TRE/TIE results.** The Executive Officer shall be notified no later than 30 days from completion of each aspect of TRE/TIE analyses. TRE/TIE results shall be submitted to the Regional Water Board within 60 days of completion.

C. Toxicity Reduction Evaluation (TRE) Process

1. **TRE Work Plan.** The Permittee submitted a TRE Work Plan to the Regional Water Board on May 7, 2007. The Permittee shall review the TRE Work Plan by **July 1, 2019**, and update the Work Plan as necessary in order to remain current with permit requirements and applicable to the discharge and discharge facilities. The Permittee's TRE Work Plan shall be reviewed once every five years and updated as necessary.

The Permittee shall notify the Regional Water Board of this review and submit any revisions of the TRE Work Plan within 90 days of the notification, to be ready to respond to toxicity events. The TRE Work Plan shall describe the steps the Permittee intends to follow if toxicity is detected, and should include at least the following items:

- a. A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.
 - b. A description of the facility's methods of maximizing in-house treatment efficiency, good housekeeping practices, and a list of all chemicals used in the operation of this Facility.
 - c. If a TIE is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).
2. **Preparation and Implementation of a Detailed TRE Work Plan.** If one of the accelerated toxicity tests described in section V.A.8 (above) does not comply with the three sample median minimum limitation (90 percent survival) or in section V.B.8 (above) results in "Fail", the Permittee shall immediately initiate a TRE using EPA manual *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989) and within 30 days of receipt submit the accelerated monitoring result to the Regional Water Board Executive Officer. The Permittee shall also submit a Detailed TRE Work Plan, which shall follow the generic TRE Work Plan revised as appropriate for the toxicity event described in section V.A.8 or V.B.8 of this MRP. The Detailed TRE Work Plan shall include the

following information, and comply with additional conditions set by the Regional Water Board Executive Officer:

- a. Further actions by the Permittee to investigate, identify, and correct causes of toxicity.
 - b. Actions the Permittee will take to mitigate effects of the discharge and prevent the recurrence of toxicity.
 - c. A schedule for these actions, progress reports, and the final report.
3. **TIE Implementation.** The Permittee may initiate a TIE as part of a TRE to identify the causes of toxicity using the same species and test methods and, as guidance, EPA manuals: *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures* (EPA/600/6-91/003, 1991); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); and *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054, 1996). The TIE should be conducted on the species demonstrating the most sensitive toxicity response.
4. Many recommended TRE elements parallel required or recommended efforts for source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. As toxic substances are identified or characterized, the Permittee shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with toxicity evaluation parameters.
5. The Permittee shall conduct routine effluent monitoring for the duration of the TRE process. Additional accelerated monitoring and TRE work plans are not required once a TRE has begun.
6. The Regional Water Board recognizes that toxicity may be episodic and identification of the causes and reduction of sources of toxicity may not be successful in all cases. The TRE may be ended at any stage, pending Regional Water Board Executive Officer approval, if monitoring finds there is no longer toxicity.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

This Order does not authorize discharges to land.

VII. RECYCLING MONITORING REQUIREMENTS

A. Monitoring Location EFF-002

1. The Permittee shall monitor treated wastewater to be recycled and used for irrigation at Monitoring Location EFF-002, as follows:

Table E-4. Recycled Water Monitoring – Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Effluent Flow ¹	mgd	Meter	Continuous	--
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	24-hr Composite	Monthly ²	Part 136 ³
Total Suspended Solids (TSS)	mg/L	24-hr Composite	Monthly ²	Part 136 ³
Settleable Solids	mL/L	24-hr Composite	Weekly ⁴	Standard Methods ³
Total Coliform Organisms	MPN/100 mL	Grab	Weekly ^{4,5}	Part 136 ³
Ammonia Nitrogen, Total (as N) ⁶	mg/L	Grab	Monthly	Part 136 ³
Nitrate Nitrogen, Total (as N) ⁶	mg/L	Grab	Monthly	Part 136 ³
Nitrite Nitrogen, Total (as N) ⁶	mg/L	Grab	Monthly	Part 136 ³
Organic Nitrogen, Total ⁶	mg/L	Grab	Monthly	Part 136 ³
Total Dissolved Solids	mg/L	Grab	Monthly	Part 136 ³

Table Notes:

- The Permittee shall report the daily average and monthly average flows.
- Accelerated Monitoring (monthly monitoring frequency). If a test result exceeds an effluent limitation, the Permittee shall take two more samples, one within 7 days and one within 14 days following receipt of the initial sample result. During the intervening period, the Permittee shall take steps to identify the cause of the exceedance and take steps needed to return to compliance.
- Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).
- Accelerated Monitoring (weekly monitoring frequency). If two consecutive weekly test results exceed an effluent limitation, the Permittee shall take two samples each of the two weeks following receipt of the second sample result. During the intervening period, the Permittee shall take steps to identify the cause of the exceedance and take steps to return to compliance.
- If animals that produce milk for human consumption are allowed to graze in the pasture areas where recycled water is applied for reuse, coliform sampling shall be increased to a minimum of daily sampling.
- Monitoring for nitrate, nitrite, ammonia, and organic nitrogen is for the purpose of determining total nitrogen concentration for agronomic rate calculations in Table E-5.

B. Recycled Water Use Area Monitoring

1. Recycled water quality characteristics and precipitation data shall be used to ascertain nitrogen loading rates at each recycled water use site.
2. Reporting of the required monitoring shall be provided annually in the Water Recycling System Annual Report to the Regional Water Board.
3. Use area monitoring shall include the following parameters:

Table E-5. Recycled Water Production and Use

Parameter	Units	Sample Type	Frequency	
			Sampling	Reporting
Volume of recycled water ¹	gpd ²	Meter ³	Daily	Annually
Total area of application	Acres	Observation	Monthly	Annually
Application Rate	Inches/acre/year	Calculation	--	Annually
Total Nitrogen application rate ^{4,5}	lbs/acre/year	Calculation	Monthly	Annually
Rainfall ⁶	Inches	Gauge	Monthly	Annually
Notification Signs ⁷	--	Observation	Monthly	Annually
Visual Observations ⁸	--	Observation	Monthly	Annually

Table Notes:

1. Estimation of the volume of recycled water shall not include other potable or non-potable “make-up” water used in conjunction with recycled water.
2. gpd denotes gallons per day.
3. Meter requires meter reading, a pump run time meter, or other approved method.
4. Nitrogen application rate shall consider nutrients contained in the recycled water, based on analytical data obtained by the Permittee.
5. Nitrogen concentrations shall be calculated and reported “as N”. For example, nitrate-nitrogen = 27 mg/L as NO₃ shall be converted and reported as nitrate-nitrogen = 6.1 mg/L as N using a conversion factor of 14.067 (N)/62.0049 (NO₃)
6. Rainfall shall be reported monthly to an accuracy of 0.1 inches for comparison to surface water flow and recycled water application rates.
7. Notification signs shall be consistent with the requirements of California Code of Regulations, title 22, section 60310(g).
8. During periods of discharge to the irrigation system, visual observations shall be conducted at least monthly for agronomic applications and shall confirm proper operation of the recycled water system and associated best management practices (BMPs) and include a record of any malfunctions or findings of improper operation, including, but not limited to soil saturation/ponding, nuisance odors, nuisance vectors, evidence of surface run-off, discharge off-site, or ponding that exceeds 24-hours. Reporting shall include the daily volume of treated wastewater discharged to the irrigation system and any observations indicating non-compliance with the provisions of the waste discharge requirements.

VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Monitoring Location RSW-001

1. The Permittee shall monitor Francis Creek at Monitoring Location RSW-001 during periods of discharge as follows:

Table E-6. Receiving Water Monitoring – Monitoring Location RSW-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Gage or Meter ¹	Daily	--

Table Notes:

- The flow rate shall be determined using the flow in Francis Creek, as measured by the Redwood Science Laboratory at the Van Ness Avenue bridge.

B. Monitoring Location RSW-002

- The Permittee shall monitor the Salt River at Monitoring Location RSW-002 during periods of discharge as follows:

Table E-7. Receiving Water Monitoring – Monitoring Location RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH ¹	s.u.	Grab	Weekly	Standard Methods ²
Hardness, Total (as CaCO ₃)	mg/L	Grab	Monthly	Standard Methods ²
Temperature ¹	°C	Grab	Weekly	Standard Methods ²
Turbidity	NTU	Grab	Monthly	Standard Methods ²
Dissolved Oxygen	mg/L	Grab	Weekly	Standard Methods ²
Specific Conductance	µmhos/cm	Grab	Weekly ³	Standard Methods ²
Total Dissolved Solids	mg/L	Grab	Monthly ³	Part 136 ²
CTR Priority Pollutants ⁴	µg/L	Grab	Once per permit term ⁵	Part 136 ^{2,6}

Table Notes:

- Once each month pH and temperature monitoring must coincide with monthly effluent monitoring for ammonia.
- Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).
- After two years of monitoring, the data will be evaluated to determine whether or not the concentration of TDS and SC in the discharge is impacting the water quality of the Salt River. If the results demonstrate that the discharge is not negatively impacting the Salt River, monitoring requirements may be reduced or eliminated.
- Those pollutants identified by the California Toxics Rule at 40 C.F.R. section 131.38. The Permittee is not required to sample and analyze for asbestos. Hardness shall be monitored concurrently with the priority pollutant sample. Monitoring shall occur simultaneously with effluent monitoring for CTR priority pollutants required by section IV.A of this MRP.
- CTR priority pollutant sampling shall be completed no later than **April 15, 2023**, during a period of discharge to the natural drainage channel tributary to the Salt River. Effluent and receiving water monitoring shall occur concurrently.
- Analytical methods must achieve the lowest ML specified in Appendix 4 of the SIP and, in accordance with section 1.4 of the SIP, the Permittee shall report the ML and MDL for each sample result.

C. Monitoring Location RSW-003

1. The Permittee shall monitor the Salt River at Monitoring Location RSW-003 during periods of discharge as follows:

Table E-8. Receiving Water Monitoring – Monitoring Location RSW-003

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH ¹	s.u.	Grab	Weekly	Standard Methods ²
Temperature ¹	°C	Grab	Weekly	Standard Methods ²
Turbidity	NTU	Grab	Monthly	Part 136 ²
Dissolved Oxygen	mg/L	Grab	Weekly	Standard Methods ²
Specific Conductance ³	µmhos/cm	Grab	Weekly	Standard Methods ²
Total Dissolved Solids ³	mg/L	Grab	Monthly	Part 136 ²

Table Notes:

1. Once each month, pH and temperature monitoring must coincide with monthly effluent monitoring for ammonia.
2. Pollutants shall be analyzed using the analytical methods described in 40 C.F.R. part 136 or by methods approved by the Regional Water Board or State Water Board, such as with the current edition of *Standard Methods for Examination of Water and Wastewater* (American Public Health Administration).
3. After two years of monitoring, the data will be evaluated to determine whether or not the concentration of TDS and SC in the discharge is impacting the water quality of the Salt River. If the results demonstrate that the discharge is not negatively impacting the Salt River, monitoring requirements may be reduced or eliminated..

IX. OTHER MONITORING REQUIREMENTS

A. Filtration Process Monitoring

Filtration process monitoring shall demonstrate compliance with section IV.D.1 (Filtration Process Requirements) of the Order and applies to all treated wastewater flows at Discharge Points 001 and 002. The following filtration process monitoring shall be implemented:

1. Effluent Filter Monitoring (Monitoring Location INT-001)

- a. **Monitoring.** The turbidity of the filter effluent shall be continuously measured and recorded. The recorded data shall be maintained by the Permittee for at least 3 years. The daily maximum and daily average turbidity results shall be reported for monitoring location INT-001.
- b. **Compliance.** Compliance with the daily average effluent turbidity limitation specified in section IV.D.1 of the Order, shall be determined using the levels of recorded turbidity taken at intervals of no more than 1.2 hours over a 24-hour period. Exceedances of the maximum turbidity requirement in section IV.D.1 of the Order shall not be considered a violation of these waste discharge requirements if such exceedance does not exceed a duration of one minute. The Permittee shall ensure compliance with the average and maximum daily turbidity requirements by establishing appropriate turbidity set points.
- c. **Reporting.** The Permittee shall report the maximum and average daily turbidity readings on its quarterly SMRs.

B. Disinfection Process Monitoring for UV Disinfection System (Monitoring Location INT-001)

1. Monitoring Location INT-002

- a. Monitoring.** The UV transmittance of the effluent from the UV disinfection system shall be monitored continuously and recorded at Monitoring Location INT-001. The operational UV dose shall be calculated from UV transmittance and flow.
- b. Compliance.** The UV transmittance shall not fall below 55 percent of maximum at any time, unless otherwise approved by DDW. Flow through the UV disinfection system shall not exceed 0.95 mgd as a daily average flow, unless otherwise approved by DDW.
- c. Reporting.** The Permittee shall report daily average and lowest daily transmittance and operational UV dose on its quarterly SMRs. The Permittee shall report daily average and maximum flow through the UV disinfection system. If the UV transmittance falls below 55 percent, the event shall be reported to the Regional Water Board by telephone within 24 hours. Any inadequately treated and disinfected wastewater shall be diverted to a storage basin or an upstream process for adequate treatment.

C. Visual Monitoring (Monitoring Locations EFF-001, RSW-002, and RSW-003)

- 1.** Visual observations of the discharge and receiving water shall be recorded monthly and on the first day of each intermittent discharge. Visual monitoring shall include, but not be limited to, observations for floating materials, coloration, objectionable aquatic growths, oil and grease films, and odors. Visual observations shall be recorded and included in the Permittee's quarterly SMRs.

D. Sludge Monitoring (Monitoring Location BIO-001)

- 1.** Sludge sampling shall be conducted according to the requirements specified by the location and type of disposal activities undertaken.
- 2.** Sampling records shall be retained for a minimum of 5 years. A log shall be maintained for sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary, however, the log must be complete enough to serve as a basis for developing the Sludge Handling and Disposal report that is required as part of the Annual Report.

E. Septage Monitoring

1. Monitoring Location SEP-001

- a.** For each septage load delivered to the Facility, the Permittee shall require the hauler to collect and report a pH value representative of the load. Additional monitoring shall be conducted, as needed, to ensure that the Permittee does not accept any septage loads that could cause upset conditions at the Facility or pass-through of pollutants.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

B. Self-Monitoring Reports (SMRs)

1. The Permittee shall submit electronic Self-Monitoring Reports (eSMRs) using the State Water Board’s California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal. The Permittee shall maintain sufficient staffing and resources to ensure it submits eSMRs that are complete and timely. This includes provision of training and supervision of individuals (e.g., Permittee personnel or consultant) on how to prepare and submit eSMRs.
2. The Permittee shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Permittee shall submit quarterly SMRs including the results of all required monitoring using U.S. EPA approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Permittee 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. All monitoring results reported shall be supported by the inclusion of the complete analytical report from the laboratory that conducted the analyses.
4. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-9. Monitoring Periods and Reporting Schedule¹

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling	First day of second calendar month following the end of each quarter ¹ (February 1, May 1, August 1, November 1)
Daily	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling	First day of second calendar month following the end of each quarter ¹ (February 1, May 1, August 1, November 1)
Weekly	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following the end of each quarter ¹ (February 1, May 1, August 1, November 1)
Monthly	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	First day of calendar month through last day of calendar month	First day of second calendar month following the end of each quarter ¹ (February 1, May 1, August 1, November 1)

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Semiannually	Closest of January 1 or July 1 following (or on) permit effective date.	January 1 through June 30 July 1 through December 31	September 1, each year March 1, each year
Annually	January 1 following (or on) permit effective date	January 1 through December 31	March 1, each year (with annual report)
Three times per permit term	Permit effective date	First three calendar years following permit effective date	March 1 following the year that monitoring is completed (with annual report) and at least 180 days prior to permit expiration
Once per permit term	Permit effective date	All	March 1 following the year that monitoring is completed (with annual report) and at least 180 days prior to permit expiration
Table Notes:			
1. Quarterly monitoring periods are as follows: January 1 through March 31; April 1 through June 30; July 1 through September 30; and October 1 through December 31.			

5. Reporting Protocols. The Permittee shall report with each sample result the applicable ML, the RL, and the current MDL, as determined by the procedure in 40 C.F.R. part 136.

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

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

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

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
- d. The Permittee is 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 Permittee to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

6. Self-Monitoring Reports. The Permittee shall submit SMRs in accordance with the following requirements:

- a. The Permittee shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The reported data shall include calculation of all effluent limitations that require averaging, taking of a median, or other computation. The Permittee is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Permittee shall electronically submit the data in a tabular format as an attachment.
- b. The Permittee shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify:
 - i. Facility name and address;
 - ii. WDID number;
 - iii. Applicable period of monitoring and reporting;
 - iv. Violations of the waste discharge requirements (WDRs) (identified violations must include a description of the requirement that was violated and a description of the violation);
 - v. Corrective actions taken or planned; and
 - vi. The proposed time schedule for corrective actions.
- c. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the CIWQS Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). In the event that an alternate method for submittal of SMRs is required, the Permittee shall submit the SMR electronically via e-mail to NorthCoast@waterboards.ca.gov or on disk (CD or DVD) in Portable Document Format (PDF) file in lieu of paper-sourced documents. The guidelines for electronic submittal of documents can be found on the Regional Water Board website at <http://waterboards.ca.gov/northcoast>.

C. Discharge Monitoring Reports (DMRs)

1. DMRs are U.S. EPA reporting requirements. The Permittee shall electronically certify and submit DMRs together with SMRs using Electronic Self-Monitoring Reports module eSMR 2.5 or any upgraded version. DMRs shall be submitted quarterly on the first day of the second calendar month following the end of each quarter (February 1, May 1, August 1, and November 1). Electronic DMR submittal shall be in addition to electronic SMR submittal. Information about electronic DMR submittal is available at the DMR website at http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/.

D. Other Reports

1. **Special Study Reports and Progress Reports.** As specified in the Special Provisions contained in section VI of the Order, special study and progress reports shall be submitted in accordance with the following reporting requirements.

Table E-10. Reporting Requirements for Special Provisions Reports

Order Section	Special Provision Requirement	Reporting Requirements
Special Provision VI.C.2.a	Ammonia Study Work Plan	December 1, 2020
Special Provision VI.C.2.a	Ammonia Study Final Report	January 15, 2023
Effluent Limitations and Discharge Specifications IV.D.3 (Other Requirements)	Storage Pond Technical Report	Prior to construction of any new pond or use of any existing pond
Special Provision VI.C.3.a.ii(e)	Pollutant Minimization Program, Annual Facility Report	March 1 , annually, following development of Pollutant Minimization Program
Special Provision VI.C.3.c	Septage Management Plan	September 1, 2019
Special Provision VI.C.5.b.i	Source Control and Pretreatment Provisions, Annual Report	March 1 , annually
Special Provision VI.C.5.b.ii(a)	Source Control and Pretreatment Provisions, Notification of Discharges that Trigger Pretreatment Requirements	Within 30 days of discharges that trigger pretreatment requirements
Special Provision VI.C.5.b.ii(b)	Source Control and Pretreatment Provisions, Revised Report of Waste Discharge and Pretreatment Program	Within 1 year of discharges that trigger pretreatment requirements
Special Provision VI.C.5.f	Adequate Capacity Technical Report	Within 120 days of notification that the Facility will reach capacity within 4 years
MRP General Monitoring Provision I.F	DMR-QA Study Report	Annually , per State Water Board instructions
MRP Effluent Monitoring Requirement IV.A.1, Table E-3, Footnote 10 and MRP Receiving Water Monitoring Requirements VIII.A.1, Table E-7, Footnote 5	CTR Priority Pollutant Monitoring	No later than April 15, 2023
MRP Effluent Monitoring Requirement V.B.9.b	Notification of TRE/TIE Results	No later than 30 days from completion of each aspect of the TRE/TIE analyses
MRP Effluent Monitoring Requirement V.B.9.b	TRE/TIE Results	Within 60 days of completion of TRE/TIE analyses
MRP Effluent Monitoring Requirement V.C.1	Revised TRE Work Plan	Review by July 1, 2019 , and update as necessary
MRP Effluent Monitoring Requirement V.C.2	Detailed TRE Work Plan	Within 30 days of an accelerated monitoring test that results in "Fail"

Order Section	Special Provision Requirement	Reporting Requirements
MRP Reporting Requirement X.E	Notification of spills and unauthorized discharges	Oral reporting within 24 hours and written report within 5 days

- 2. Annual Report.** The Permittee shall submit an annual report to the Regional Water Board for each calendar year through the CIWQS Program Web site. In the event that a paper copy of the annual report is required, the Permittee shall submit the report to the email address in section X.B.6.c., above. The report shall be submitted by **March 1st** of the following year. The report shall, at a minimum, include the following:
- a.** Where appropriate, tabular and/or graphical summaries of the monitoring data and disposal records from the previous year. If the Permittee monitors any pollutant more frequently than required by this Order, using test procedures approved under 40 C.F.R. part 136 or as specified in this Order, the results of this monitoring shall be included in the calculation and report of the data submitted SMR.
 - b.** A comprehensive discussion of the Facility’s compliance (or lack thereof) with all effluent limitations and other WDRs, and the corrective actions taken or planned, which may be needed to bring the discharge into full compliance with the Order. This discussion shall include an evaluation of the Permittee’s effluent and receiving water data for dissolved oxygen, pH, temperature, total dissolved solids, and specific conductance to determine whether the Facility is complying with the conditions of the Basin Plan dilution rate exception and receiving water limitations in section V.A of the Order.
 - c.** The names and general responsibilities of all persons employed at the Facility;
 - d.** The names and telephone numbers of persons to contact regarding the Facility for emergency and routine situations; and
 - e.** A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.
 - f. Source Control Activity Reporting.** The Permittee shall submit, as part of its Annual Report to the Regional Water Board, a description of the Permittee’s source control activities, as required by Special Provision VI.C.5.b.i, during the past year. This annual report is due on March 1st of each year, and shall contain:
 - i.** A copy of the source control program and/or standards, including a table presenting local limits.
 - ii.** A description of the waste hauler permit system; if applicable.
 - iii.** A summary of the compliance and enforcement activities, if any, taken by the Permittee during the past year, which ensures industrial user compliance. The summary shall include the names and addresses of any industrial or commercial users under surveillance by the Permittee, an explanation of whether they were inspected, sampled, or both, the frequency of these activities at each user, and the conclusions or results from the inspection or sampling of each user.

- iv. A summary of public outreach activities to educate industrial, commercial, and residential users about the importance of preventing discharges of industrial and toxic wastes to the Facility.
- g. **Sludge Handling and Disposal Activity Reporting.** The Permittee shall submit, as part of its annual report to the Regional Water Board, a description of the Permittee's solids handling, disposal and reuse activities over the previous 12 months. At a minimum, the report shall contain:
 - i. Annual sludge production, in dry tons and percent solids;
 - ii. Sludge monitoring results;
 - iii. A schematic diagram showing sludge handling facilities (e.g., digesters, thickeners, drying beds, etc.), if any and a solids flow diagram;
 - iv. Methods of final disposal of sludge:
 - (a) For any portion of sludge discharged to a sanitary landfill, the Permittee shall provide the volume of sludge transported to the land fill, the names and locations of the facilities receiving sludge, the Regional Water Board's WDRs order number for the regulated landfill, and the landfill classification.
 - (b) For any portion of sludge discharged through land application, the Permittee shall provide the volume of biosolids applied, the date and locations where biosolids were applied, the Regional Water Board's WDRs order number for the regulated discharge, a demonstration that the discharge was conducted in compliance with applicable permits and regulations, and, if applicable, corrective actions taken or planned to bring the discharge into compliance with WDRs.
 - (c) For any portion of sludge further treated through composting, the Permittee shall provide a summary of the composting process, the volume of sludge composted, and a demonstration and signed certification statement that the composting process and final product met all requirements for Class A biosolids.
 - v. Results of internal or external third-party audits of the Biosolids Management System, including reported program deficiencies and recommendations, required corrective actions, and a schedule to complete corrective actions.
- h. **Storm Water Reporting.** The Permittee shall submit, as part of its annual report to the Regional Water Board, an evaluation of the effectiveness of the Permittee's best management practices (BMPs) to control storm water, as well as activities to maintain and upgrade these BMPs.
- i. **Septage Monitoring and Reporting.** The results of septage monitoring shall be provided as follows:
 - i. A summary table of all discharges of septage to the Facility. At a minimum, the table shall include; the name, County identification number, and City identification number of each hauler discharging into the Facility over the past calendar year.

Data Exchange (CDX) Web Site (<https://cdx.epa.gov/>). Information regarding registration and use of U.S. EPA's CDX system is also available at the Web Site.

E. Spill Notification

1. **Spills and Unauthorized Discharges.** Information regarding all spills and unauthorized discharges (except sanitary sewer overflows [SSOs]) that may endanger health or the environment shall be provided orally to the Regional Water Board³ within 24 hours from the time the Permittee becomes aware of the circumstances and a written report shall also be provided within five (5) days of the time the Permittee becomes aware of the circumstances, in accordance with Section V.E of Attachment D.

Information to be provided verbally to the Regional Water Board includes:

- a. Name and contact information of caller;
 - b. Date, time, and location of spill occurrence;
 - c. Estimates of spill volume, rate of flow, and spill duration, if available and reasonably accurate;
 - d. Surface water bodies impacted, if any;
 - e. Cause of spill, if known at the time of the notification;
 - f. Cleanup actions taken or repairs made at the time of the notification; and
 - g. Responding agencies.
2. **Sanitary Sewer Overflows.** Notification and reporting of SSOs is conducted separately in accordance with the requirements of Order No. 2006-0003-DWQ (Statewide General WDRs for Sanitary Sewer Systems), which is not incorporated herein by reference, and any revisions thereto.
 3. **Recycled Water Spills.** Notification and reporting of spills and unauthorized discharges of recycled water discharged in or on any waters of the state, as defined in Water Code section 13050, shall be conducted in accordance with the following:
 - a. **Secondary Recycled Water**⁴
 - i. For unauthorized discharges of more than 1,000 gallons of secondary recycled water, the Permittee shall immediately notify the Regional Water Board as soon as (a) the Permittee has knowledge of the discharge or probable discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures.

³ The contact number of the Regional Water Board during normal business hours is (707) 576-2220. After normal business hours, spill reporting to the California Governor's Office of Emergency Services Warning Center (CalOES) will satisfy the 24 hour spill reporting requirement for the Regional Water Board. The contact number for spill reporting for the CalOES is (800) 852-7550.

⁴ Secondary Recycled Water means "disinfected secondary 23 recycled water" as defined by DDW or wastewater receiving advanced treatment beyond disinfected secondary 23 recycled water.

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section I, the Regional Water Board incorporates this Fact Sheet as findings of the Regional Water Quality Control Board (Regional Water Board) supporting the issuance of this Order. This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	1B83136OHUM
Permittee	City of Ferndale
Name of Facility	City of Ferndale Wastewater Treatment Plant
Facility Address	606 Port Kenyon Road
	Ferndale, CA 95536
	Humboldt County
Facility Contact, Title and Phone	Jay Parrish, City Manager, (707) 786-4224
Authorized Person to Sign and Submit Reports	Jay Parrish, City Manager, (707) 786-4224
Mailing Address	834 Main Street, P.O. Box 1095, Ferndale, CA 95536
Billing Address	Same as Mailing Address
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	A
Pretreatment Program	Not Applicable
Recycling Requirements	Producer
Facility Permitted Flow	0.55 million gallons per day (mgd) (average dry weather flow)
	0.95 mgd (peak wet weather flow)
Facility Design Flow	0.55 mgd (average dry weather design flow)
	0.95 mgd (peak average daily wet weather design flow)
Watershed	Eel River Hydrologic Unit, Ferndale Hydrologic Subarea
Receiving Water	Natural drainage channel tributary to the Salt River
Receiving Water Type	Inland surface water

- A.** The City of Ferndale (hereinafter Permittee) is the owner and operator of the City of Ferndale Wastewater Treatment Plant (hereinafter Facility), a POTW.

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 Permittee herein.

The Permittee is authorized to discharge subject to waste discharge requirements in this Order at the discharge locations described in Table 2 on the cover page of this Order. The Code of Federal Regulations at 40 C.F.R. section 122.46 limits the duration of National Pollutant Discharge Elimination System (NPDES) permits to be effective for a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the effective period for the discharge authorized by this Order. Pursuant to California Code of Regulations, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending issuance of a new permit if all requirements of the federal NPDES regulations on continuation of expired permits are complied with.

- B.** The Facility discharges tertiary treated wastewater to a natural drainage channel that is tributary to the Salt River, a water of the United States. The Permittee was previously regulated by Order No. R1-2012-0097 and NPDES Permit No. CA0022721 adopted on December 6, 2012, expired on January 31, 2018, and administratively continued through the effective date of this Order. Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility. Site visits were conducted on November 14, 2017, and April 17, 2018, to observe operations and collect additional data to develop permit limitations and requirements for waste discharge.
- C.** The Permittee filed a report of waste discharge (ROWD) and submitted an application for reissuance of its waste discharge requirements (WDRs) and NPDES permit on July 25, 2017. Supplemental information was provided on December 14, 2017, January 16, 2018, March 3, 2018, March 5, 2018, March 28, 2018, and June 25, 2018. The application was deemed complete on July 17, 2018.

II. FACILITY DESCRIPTION

The Permittee owns and operates a municipal wastewater treatment plant (WWTP) and associated wastewater collection, recycling, and disposal facilities that serve a population of approximately 1,400 residential and commercial users. The Facility discharges wastewater from Discharge Point 001 to a natural drainage channel that is tributary to the Salt River. From May 15 through September 30, and at other appropriate times based on weather and soil conditions, secondary treated wastewater is delivered for irrigation/recycling use on neighboring agricultural land owned by Elias and Marilyn Sousa.

A. Description of Wastewater and Biosolids Treatment and Controls

The Facility is located in the Ferndale Hydrologic Subarea of the Lower Eel River Hydrologic Area, within the Eel River Hydrologic Unit. The Facility is designed to treat an average dry weather flow of 0.55 mgd and a peak average daily wet weather flow of 0.95 mgd.

The Facility consists of a headworks with a comminutor and bar screen; Aero-Mod treatment system with a selector tank, four aeration tanks, two clarifiers, and two aerobic sludge digesters; disc filtration; and ultraviolet light (UV) disinfection.

Wastewater flows, by gravity, from the municipal collection system to the headworks at the Facility. Within the headworks, the comminutor and bar screen provide primary treatment. Wastewater from the headworks is pumped to the selector tank and then flows by gravity to the extended aeration basins for biological treatment. From the aeration basins, wastewater flows by gravity to the adjacent rectangular clarifiers. Return activated sludge (RAS) is selectively injected into the selector tank and aeration basins, as appropriate, to achieve maximum nitrogen removal efficiencies. Clarified wastewater undergoes disc filtration prior to UV disinfection. The disinfected effluent is then directed to a holding basin (i.e., the former chlorine contact basin) where it may be stored prior to recycling or discharge to surface water. Variable drive pumps located within the basin provide continuous flows when discharging to surface water.

The Permittee also accepts septage from the local area and sludge from the Scotia Community Services District for treatment. This septage and sludge is placed in the Permittee's 8 million gallon synthetically lined retention pond which serves as a wet-weather flow equalization basin and provides anaerobic treatment of sludge.

Influent exceeding the design treatment capacity of 0.95 mgd (as an average daily flow) is diverted from the headworks to the retention pond. Flows from the equalization basin flow back to the headworks to proceed with full treatment through the Facility once average daily influent flows subside below 0.95 mgd.

Aerobically digested sludge is pumped to a belt press for dewatering. The dewatered sludge is removed offsite for disposal at a permitted landfill and the Permittee may dispose of sludge at other permitted facilities in accordance with Special Provision VI.C.5.c of the Order.

B. Discharge Points and Receiving Waters

1. The Facility is located within the Ferndale Hydrologic Subarea of the Lower Eel River Hydrologic Area, within the Eel River Hydrologic Unit.
2. From October 1 through May 14, effluent may be discharged to a natural drainage channel that is tributary to the Salt River, at Discharge Point 001 at 40° 35' 40" N latitude and 124° 15' 44" W longitude. The Salt River is a water of the United States.

At the time Order No. R1-2012-0097 was adopted, the Facility discharged to Francis Creek approximately 100 feet upstream of its confluence with the Salt River. The hydraulic conditions of the Salt River watershed, which includes Francis Creek, had been degrading over time, resulting in a higher sediment load and reduced flows. In the prior 25 years, four of the easternmost tributaries to the mainstem Salt River, including the former headwaters of the Salt River in Williams Creek, were diverted to the Old River via Perry Slough, creating separate watersheds and reducing the total drainage of the Salt River by 42%. As a result, the Salt River at the confluence with Francis Creek had become ephemeral and Francis Creek had replaced Williams Creek as the headwaters to the Salt River.

Over the term of Order No. R1-2012-0097, the Humboldt County Resource Conservation District implemented the Salt River Ecosystem Restoration Project to restore the Salt River watershed by addressing upstream erosion, dredging the Salt River channel, and reconnecting Williams Creek to the Salt River. As part of the project, approximately 5 miles of the Salt River have already been dredged. Additionally, the alignment of Francis Creek upstream of the discharge was modified to divert Francis Creek flows from the natural drainage channel through either a constructed sediment management area or a constructed diversion channel. During the winter months, Francis Creek flows through the sediment

management area and then to the Salt River. During the summer months, Francis Creek flows through the constructed diversion channel and enters the Salt River just upstream of the outlet from the sediment management area. The Facility continues to discharge wastewater from Discharge Point 001 to the natural drainage channel. Under most conditions, the natural drainage channel in the vicinity of the discharge does not contain upstream receiving water flows; however, upstream flows from Francis Creek and overflow from wetlands constructed in the footprint of the old wastewater treatment plant could potentially enter the natural drainage channel under significant wet weather conditions. The confluence of the natural drainage channel is located approximately 300 feet downstream of the outlet from the sediment management area.

3. From May 15 to September 30, and other periods as allowed under this Order, treated wastewater is recycled via pasture irrigation at Discharge Point 002 to an 80-acre agricultural site, located immediately adjacent to the treatment plant. The Permittee's limited amount of recycled water is applied to the pasture at or below hydraulic and nutrient agronomic rates of the pasture grass. The sprinkler system is rotated over the 80-acre site, taking over a month to irrigate the entire site. This practice minimizes the potential for over-application of recycled water.

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

Effluent limitations contained in Order No. R1-2012-0097 for discharges from Discharge Point 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order No. R1-2012-0097 are as follows:

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

Parameter	Units	Effluent Limitation			Monitoring Data (February 2013 – May 2017)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow	mgd	0.95 ¹	--	0.55 ²	1.52	--	2.41
Biochemical Oxygen Demand 5-day @ 20°C (BOD ₅)	mg/L	10	15	--	3	9.8	--
	lbs/day ³	79	119	--	NR	NR	--
	% Removal	85	--	--	88 ⁴	--	--
Total Suspended Solids (TSS)	mg/L	10	15	--	5	18	--
	lbs/day ³	79	119	--	NR	NR	--
	% Removal	85	--	--	67 ⁴	--	--
pH	s.u.	--	--	6.5 – 8.5	--	--	6.2 - 7.5
Settleable Solids	ml/L	0.1	--	0.2	<0.01	--	7.1
Total Coliform Organisms	MPN/100 mL	23 ⁵	--	230	--	--	350
Ammonia Nitrogen, Total (as N)	mg/L	1.0	--	--	14	--	--

Parameter	Units	Effluent Limitation			Monitoring Data (February 2013 – May 2017)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Nitrate Nitrogen, Total (as N)	mg/L	10	--	--	5.8	--	--
Nitrogen, Total (as N) ¹⁰	mg/L	10	--	--	15	--	--
Acute Toxicity	TUa	70 ⁶ /90 ⁷	--	--	100 ⁸	--	--
2,3,7,8-TCDD	µg/L	1.30 x 10 ⁻⁸		2.60 x 10 ⁻⁸	3.50 x 10 ⁻⁷	--	3.50 x 10 ⁻⁷

NR=Not Reported
Table Notes:

1. The average wet weather flow of waste through the treatment plant shall not exceed 0.95 mgd, measured daily and averaged over a calendar month.
2. The mean daily dry weather flow of waste through the treatment plant shall not exceed 0.55 mgd, measured over a calendar month.
3. Based on the peak wet weather design capacity of the advanced wastewater treatment system of 0.95 mgd.
4. Represents the minimum observed monthly average percent removal value.
5. The median concentrations shall not exceed a Most Probable Number (MPN) of 23 per 100 mL, using the bacteriological results of the last 30 calendar days for which analyses have been completed.
6. Minimum for any one bioassay.
7. Median for any three or more consecutive bioassays.
8. Represents the minimum observed percent survival.

D. Compliance Summary

On February 16, 2017, the Assistant Executive Officer issued Administrative Civil Liability (ACL) Complaint No. R1-2017-0017 for 10 violations of effluent limits for 5-day biochemical oxygen demand (BOD₅), total suspended solids (TSS), ammonia, flow, and 2,3,7,8-TCDD in Order Nos. R1-2009-0036 and R1-2012-0097. The ACL Complaint assessed a penalty of \$30,000 for these violations. On March 16, 2017, the Permittee waived the 90-day hearing requirement and agreed to engage in settlement discussions.

In an May 4, 2018, Settlement Agreement and Stipulation for Entry of Order (hereinafter Stipulated Order) the Permittee proposed a compliance project (CP) to repair an area of the Facility sewer main line that is causing significant inflow/infiltration during winter months and storm events in lieu of the \$30,000 penalty assessed. The Permittee completed the CP on October 27, 2017, and submitted its final report to the Regional Water Board on May 30, 2018. The collection system pipeline repair is anticipated to reduce the volume of influent flow into the Facility during the winter season, and reduce the likelihood of flow and effluent limit exceedances.

E. Planned Changes

The Permittee is evaluating various projects to reduce infiltration and inflow (I&I) in its collection system, improve operation of and reduce costs of operating its wastewater treatment facility, increase wet-weather storage, and to increase sludge treatment. The projects are in the planning stage and are dependent on funding. Specific projects could include, raising the dike of the existing equalization basin by approximately 1 foot to expand the size of the retention pond

to prevent possible overflow from Francis Creek into the retention pond, and to consider upgrades to the biosolids processing to provide treatment to achieve Class A biosolids for application to City landscapes.,

In addition, the Permittee has received a grant under the Clean Water State Revolving Fund to investigate existing infiltration and inflow (I&I) issues, and determine potential improvements to the collection system. The grant also provides funding to conduct an intake study, within the equalization basin, to determine whether modifications to the intake structure are necessary, and to conduct a UV disinfection study to determine any modifications that may need to be implemented to meet disinfection standards.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of CEQA, (commencing with section 21100) of Division 13 of the Public Resources Code. This action also involves the reissuance of WDRs for an existing facility that discharges treated wastewater to land and as such, is also exempt from CEQA pursuant to title 14, CCR, section 15301 as an existing facility for which no expansion of use is being permitted.

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

1. **Water Quality Control Plan.** The Regional Water Board adopted a *Water Quality Control Plan for the North Coast Region* (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. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which establishes state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the Eel River and its tributaries within the Ferndale Hydrologic Subarea of the Lower Eel River Hydrologic Area are summarized in Table F-3, below:

Table F-3. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Natural drainage channel that is tributary to the Salt River, thence to the Eel River, within the Ferndale Hydrologic Subarea of the Lower Eel River Hydrologic Area	<p><u>Existing:</u> Municipal and domestic supply (MUN); Agricultural supply (AGR); Industrial service supply (IND); Groundwater recharge (GWR); Freshwater replenishment (FRSH); Navigation (NAV); Water contact recreation (REC-1); Non-contact water recreation (REC-2); Commercial and sport fishing (COMM); Cold freshwater habitat (COLD); Wildlife habitat (WILD); Rare, threatened, or endangered species (RARE); Migration of aquatic organisms (MIGR); Spawning, reproduction, and/or early development (SPWN); Shellfish Harvesting (SHELL); Estuarine Habitat (EST); and Native American Culture (CUL).</p> <p><u>Potential:</u> Industrial process supply (PRO); Marine Habitat (MAR); Hydropower generation (POW), and Aquaculture (AQUA).</p>
002	Groundwater	<p><u>Existing:</u> Municipal and domestic supply (MUN); Agricultural supply (AGR); Industrial service supply (IND); Freshwater Replenishment (FRSH); and Native American culture (CUL).</p> <p><u>Potential:</u> Industrial process supply (PRO); and Aquaculture (AQUA).</p>

In addition to the beneficial uses set out in the Basin Plan, there are several implementation plans that include actions intended to meet water quality objectives and protect beneficial uses of the North Coast Basin. For the Eel River and its tributaries, no point source waste discharges are allowed during the period of May 15 through September 30 and for all other periods the receiving stream’s flow must be at least 100 times greater than the waste flow unless an exception to the requirement is granted by the Regional Water Board.

Requirements of this Order implement the Basin Plan.

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain federal water quality criteria for priority pollutants.
3. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
4. **Domestic Water Quality.** In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels (MCLs) implemented by the Basin Plan that are designed to protect human health and ensure that water is safe for domestic use.
5. **Compliance Schedules and Interim Requirements.** The State Water Board adopted Resolution No. 2008-0025 on April 15, 2008, titled *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits*, which includes compliance schedule policies for pollutants that are not addressed by the SIP. This Policy became effective on August 27, 2008.

This Order does not include compliance schedules or interim effluent limitations.
6. **Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Waters in California*). Resolution No. 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. As discussed in detail in section IV.D.2 of this Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16.
7. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as

stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. Some effluent limitations in this Order have been removed or are less stringent than those in the previous Order. As discussed in detail in section IV.D.1 of this Fact Sheet, removal or relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

- 8. Endangered Species Act Requirements.** This Order does not authorize an 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, including protecting rare, threatened and endangered species. The Permittee is responsible for meeting all requirements of the applicable Endangered Species Act.

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

Section 303(d) of the federal CWA requires states to identify waterbodies that do not meet water quality standards and are not supporting their beneficial uses after implementation of technology-based effluent limitations on point sources. Each state must submit an updated list, the 303(d) List of Impaired Waterbodies every two years. In addition to identifying the waterbodies that are not supporting beneficial uses, the 303(d) list also identifies the pollutant or stressor causing impairment and establishes a schedule for developing a control plan to address the impairment. The CWA requires development of a total maximum daily load (TMDL) or alternate program of implementation for each 303(d) listed pollutant and water body to remedy the impairment. TMDLs establish the maximum quantity of a given pollutant that can be added to a water body from all sources without exceeding the applicable water quality standard for that pollutant and determine wasteload allocations (the portion of a TMDL allocated to existing and future point sources) and load allocations (the portion of a TMDL attributed to existing and future nonpoint sources).

On June 26, 2015, the U.S. EPA provided final approval of the 2012 303(d) list of impaired water bodies for the North Coast Region prepared by the state. The list identifies the Lower Eel River as impaired by aluminum, dissolved oxygen, sedimentation/siltation, and temperature. On December 18, 2007, the U.S. EPA approved a TMDL addressing sediment and temperature in the Lower Eel River. Pursuant to CWA section 303(d), the Regional Water Board will develop a TMDL or alternate program of implementation to address the impairment for aluminum and dissolved oxygen, which will be implemented through various programs, including through provisions of NPDES permits.

Regarding temperature, the TMDL concludes that most sources of heat in the Lower Eel River are from diffuse, nonpoint sources and result from such factors as removal of stream shade, longer travel time, changes in timing and volume of natural stream flow due to water diversions and impoundments, and increased sediment loads that cause widening of streams. As the critical time period for temperature is in the summer, the TMDL was established for that critical time period, which is also the time period when point source discharges from the Facility are prohibited. The TMDL concludes that, because of the summer discharge prohibition, area facilities such as the Facility do not contribute to temperature loadings to the Lower Eel River Watershed during critical periods, and therefore, the TMDL establishes a “zero” waste load allocation (WLA) to

mean that, as long as the Permittee adheres to the summer discharge prohibition, it will be in compliance with the approved TMDL for temperature.

Regarding sediment, the TMDL establishes a maximum loading of 125 percent of the natural sediment loading for the watershed and further defines that loading rate as 2.5 tons of sediment per square mile of watershed per day on a long-term basis. The TMDL found that nonpoint sources were primarily responsible for excessive sediment loadings to the Lower Eel River, and the TMDL established WLAs for wastewater treatment facilities at levels corresponding to existing permit limitations for suspended and settleable solids. In order to be protective of the Basin Plan water quality objectives for sediment in the Lower Eel River Watershed, this Order retains effluent limitations for TSS and settleable solids from Order No. R1-2012-0097.

Regarding dissolved oxygen, the Permittee monitored Francis Creek and the Salt River for dissolved oxygen immediately upstream and downstream of its discharge during the term of Order No. R1-2012-0097. Dissolved oxygen monitoring data collected between March 2013 and May 2017 reveals that downstream concentrations at Monitoring Location R-002 range between 3.6 and 8.6 mg/L and that there is little change between the upstream and downstream monitoring data. The Permittee's discharge is not expected to contribute to the dissolved oxygen impairment.

Regarding aluminum, the Permittee does not use aluminum-based products in its wastewater treatment process; therefore, the Permittee's discharge is not expected to contribute to the aluminum impairment.

E. Other Plans, Policies and Regulations

1. On May 2, 2006, the State Water Board adopted State Water Board Order No. 2006-0003-DWQ, Statewide General WDRs for Sanitary Sewer Systems and on August 6, 2013 adopted Order No. WQ 2013-0058-EXEC Amending Monitoring and Reporting Program for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order No. 2006-0003-DWQ requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the General WDRs. The deadline for dischargers to apply for coverage was November 2, 2006. The Permittee applied for coverage and is separately subject to the requirements of Order Nos. 2006-0003-DWQ and WQ 2013-0058-EXEC and any future revisions thereto for operation of its wastewater collection system.
2. Coverage under the State Water Board Water Quality Order No. 2014-0057-DWQ, NPDES General Permit No. CAS000001, General Permit for Storm Water Discharges Associated with Industrial Activities (Industrial Storm Water General Permit) is not required based on the size of the Facility (less than 1 mgd).
3. On July 22, 2004, the State Water Board adopted State Water Board Order No. 2004-0012-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities. For the land application of biosolids as a soil amendment outside the California Coastal Zone, as defined in and mapped pursuant to Public Resources Code section 30103, the Permittee must obtain coverage under Order No. 2004-0012-DWQ prior to any removal of biosolids from the Facility that will be land disposed on property owned or controlled by the Permittee.
4. 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

Permittee must file a petition with the State Water Resources Control Board (State Water Board), Division of Water Rights, and receive approval for such a change. The State Water Board retains separate jurisdictional authority to enforce any applicable requirements under Water Code section 1211.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

A. Discharge Prohibitions

1. **Discharge Prohibition III.A.** The discharge of any waste not disclosed by the Permittee or not within the reasonable contemplation of the Regional Water Board is prohibited.

This prohibition is based on the Basin Plan, the previous Order, and State Water Board Order No. WQO 2002-0012 regarding the petition of WDRs Order No. 01-072 for the East Bay Municipal Utility District and Bay Area Clean Water Agencies. In State Water Board Order No WQO 2002-0012, the State Water Board found that this prohibition is acceptable in orders, but should be interpreted to apply only to constituents that are not disclosed by the Permittee, and are not reasonably anticipated to be present in the discharge. It specifically does not apply to constituents in the discharge that do not have “reasonable potential” to exceed water quality objectives.

The State Water Board has stated that the only pollutants not covered by this prohibition are those that were “disclosed to the permitting authority and...can be reasonably contemplated.” [In re the Petition of East Bay Municipal Utilities District et al., (State Water Board, 2002) Order No. WQO 2002-0012, p. 24.] In that Order, the State Water Board cited a case that held the Permittee is liable for the discharge of pollutants “not within the reasonable contemplation of the permitting authority...whether spills or otherwise...” [Piney Run Preservation Assn. v. County Commissioners of Carroll County, Maryland (4th Cir. 2001) 268 F. 3d 255, 268.] Thus, the State Water Board authority provides that, to be permissible, the constituent discharged (1) must have been disclosed by the Permittee and (2) can be reasonably contemplated by the Regional Water Board.

2. **Discharge Prohibition III.B.** Creation of pollution, contamination, or nuisance, as defined by section 13050 of the Water Code is prohibited.

This prohibition has been retained from Order No. R1-2012-0097 and is based on section 13050 of the Water Code and section 5411 of the California Health and Safety Code.

3. **Discharge Prohibition III.C.** The discharge of sludge or digester supernatant is prohibited, except as authorized under section VI.C.5.c of this Order (Sludge Disposal and Handling Requirements).

This prohibition has been retained from Order No. R1-2012-0097 and is based on restrictions on the disposal of sewage sludge found in federal regulations [40 C.F.R. part 503 (Biosolids), part 527, and part 258] and title 27 of the California Code of Regulations (CCR).

4. **Discharge Prohibition III.D.** The discharge or recycling use of untreated or partially treated waste (receiving a lower level of treatment than described in section II.A of the Fact Sheet) from anywhere within the collection, treatment, or disposal systems is prohibited, except as provided for in Attachment D, Standard Provisions G (Bypass) and H (Upset).

This prohibition has been retained from Order No. R1-2012-0097 with a minor modification to include recycling use. This prohibition is based on the Basin Plan to protect the beneficial uses of the receiving water from unpermitted discharges, and the intent of the Water Code sections 13260 through 13264 relating to the discharge of waste to waters of the state without filing for and being issued an Order. This prohibition applies to spills not related to sanitary sewer overflows (SSOs) and other unauthorized discharges of wastewater within the collection, treatment, and disposal facilities. The discharge of untreated or partially treated wastewater from the collection, treatment, or disposal facility represents an unauthorized bypass pursuant to 40 C.F.R. section 122.41(m) or an unauthorized discharge that poses a threat to human health and/or aquatic life, and therefore is explicitly prohibited by this Order.

5. **Discharge Prohibition III.E.** Any SSO that results in a discharge of untreated or partially treated wastewater to (a) waters of the state or (b) land that creates pollution, contamination, or nuisance, as defined in Water Code section 13050(m) is prohibited.

This prohibition is retained from Order No. R1-2012-0097 with a minor modification. A reference to groundwater has been removed because groundwater is captured in the broader term, "waters of the state." This prohibition applies to spills related to SSOs and is based on state standards, including section 13050 of the Water Code and the Basin Plan. This prohibition is consistent with the state's antidegradation policy as specified in State Water Board Resolution No. 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Water in California*) in that the prohibition imposes conditions to prevent impacts to water quality, the degradation of water quality, negative effects on receiving water beneficial uses, and lessening of water quality beyond that prescribed in State Water Board or Regional Water Board plans and policies.

This prohibition is stricter than the prohibitions stated in State Water Board Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order No. 2006-0003-DWQ prohibits SSOs that result in the discharge of untreated or partially treated wastewater to waters of the United States and SSOs that cause a nuisance, compared to Prohibition III.E of this Order, which prohibits SSO discharges that create nuisance or pollution to waters of the state and land for a more complete protection of human health. The rationale for this prohibition is because of the prevalence of high groundwater in the North Coast Region, and this Region's reliance on groundwater as a drinking water source.

6. **Discharge Prohibition III.F.** The discharge of waste to land that is not owned by the Permittee, governed by City ordinance, or under agreement to use by the Permittee, or for which the Permittee has explicitly permitted such use, is prohibited, except for use for fire suppression as provided in title 22, sections 60307(a) and 60307(b) of the CCR.

This prohibition is retained from Order No. R1-2012-0097, with minor modifications. Land used for the application of wastewater must be owned by the Permittee or be under the control of the Permittee by contract so that the Permittee maintains a means for ultimate disposal of treated wastewater.

7. **Discharge Prohibition III.G.** The discharge of waste at any point not described in Finding II.B of the Fact Sheet or authorized by a permit issued by the State Water Board or another Regional Water Board is prohibited.

This prohibition has been retained from Order No. R1-2012-0097. This prohibition is a general prohibition that allows the Permittee to discharge waste only in accordance with WDRs. It is based on sections 301 and 402 of the federal CWA and section 13263 of the Water Code.

8. **Prohibition III.H.** The average dry weather flow of waste through the Facility shall not exceed 0.55 mgd measured daily and averaged over a calendar month. The peak average daily wet weather flow of waste through the Facility shall not exceed 0.95 mgd. Compliance with this prohibition shall be determined as defined in sections VII.K and VII.L of this Order.

Order No. R1-2012-0097 included a mean daily dry weather flow limitation of 0.55 mgd, and an average daily wet weather flow limitation of 0.95 mgd based on the design treatment capacity of the Facility. This Order replaces the effluent flow limitations with a prohibition, with compliance to be determined based on influent flow monitoring at Monitoring Location INF-001. Exceedance of these flow limitations on a daily basis may result in effluent violations and/or the need to by-pass untreated effluent blended with treated effluent, which is prohibited.

9. **Prohibition III.I.** The discharge of waste to the Lower Eel River and its tributaries is prohibited during the period from May 15 through September 30 of each year.

The Basin Plan requires the prohibition of waste discharge during certain times of the year. Specifically, the Basin Plan prohibits the discharges to the Eel River and its tributaries during the period of May 15 through September 30 (Chapter 4, Waste Discharge prohibitions for the North Coastal Basin).

10. **Prohibition III.J.** During the period from October 1 through May 14, discharges of treated wastewater to the natural drainage channel that is tributary to the Salt River, thence to the Eel River, shall not exceed one hundred percent of the flow of Francis Creek, as measured in Francis Creek at the Van Ness Avenue bridge. For the purposes of this Order, compliance with this discharge prohibition shall be determined as follows:

- a. The discharge of tertiary treated wastewater shall be adjusted at least once daily to avoid exceeding, to the extent practicable, one hundred percent of the most recent daily flow measurement of Francis Creek. Daily flow shall be based on flow meter comparisons reasonably read between the hours of 12:01 am and 12:00 midnight; and
- b. In no case shall the total volume of tertiary treated wastewater discharged in a calendar month exceed one hundred percent of the total volume of Francis Creek in the same calendar month. At the beginning of the discharge season, the monthly flow volume comparisons shall be based on the date when the discharge commenced to the end of the calendar month. At the end of the discharge season, the monthly flow volume

comparisons shall be based on the first day of the calendar month to the date when the discharge ceased for the season.

Order No. R1-2012-0097 included a discharge rate limitation of one hundred percent (1:1) of the upstream receiving water flow from October 1 through May 14. This Order replaces the limitation with a prohibition, with compliance to be determined at Monitoring Location RSW-001 in Francis Creek. The Basin Plan (Chapter 4, North Coastal Basin Discharge Prohibition No. 3) prohibits discharges to the Eel River and its tributaries when the waste discharge flow is greater than one percent (1:100) of the receiving water's flow during the allowable discharge season, unless an exception to the requirement is granted by the Regional Water Board.

The Basin Plan allows the Regional Water Board to consider for cause exceptions to the one percent waste discharge rate limitation and requires that exceptions be defined in NPDES permits for each permittee, on a case by case basis in accordance with specific requirements that are identified in Chapter 4, Implementation Plans, Point Source Measures, North Coastal Basin, Item 5.

The Permittee submitted a January 2009 *Variance Request for Exception to the Water Quality Control Plan for the North Coast Region Discharge Rate Limitation for the City of Ferndale Wastewater Treatment Facility* (Exception Request) requesting an exception to the Basin Plan's one percent discharge prohibition. The application included a request to discharge up to one hundred percent of the flow of Francis Creek and demonstrated the Facility's ability to meet the five conditions identified in the Basin Plan. Based on the Exception Request, the Regional Water Board granted an exception to the waste discharge rate limitation in Order No. R1-2012-0097. As described below, the Regional Water Board finds that the discharge meets the conditions specified in the Basin Plan for an exception to the discharge rate prohibition.

1. The wastewater treatment facility shall be reliable.

The Permittee constructed a new Facility including replacement of the influent pump station, a new expanded headworks facility, retrofit of the existing oxidation pond into an 8.0 million gallon equalization basin, construction of new aeration tanks, clarifiers, disc filters, and UV disinfection. UV disinfection has been shown to be more effective than chlorine in denaturing viruses and provides a higher level of pathogen removal than chlorine disinfection. Extended aeration and filtration and disinfection treatment technologies applied at the new Facility have been shown to produce reliably high quality effluent of tertiary level quality.

2. Reliability shall be demonstrated through analysis of the features of the facility including, but not limited to, system redundancy, proper operation and maintenance, and backup storage capacity to prevent the threat of pollution or nuisance.

The new headworks facility includes a primary channel and a second channel for redundancy. Two main pumps within the headworks pump influent to the treatment works, with a third pump in place for redundancy. Wintertime flows exceeding the peak average daily treatment capacity of 0.95 mgd are pumped to an 8.0 million gallon equalization basin and retained for later treatment when influent flows subside. The equalization basin also serves as emergency storage or temporary storage during WWTP upsets or routine maintenance activities, respectively.

The Permittee's collection system has significant I&I issues that the Permittee is assessing and plans to address as described in section II.E of this Fact Sheet.

- 3. The discharge of waste shall be limited to rates and constituent levels which protect the beneficial uses of the receiving waters.*

In conjunction with the application for the 2009 NPDES permit renewal, the Permittee submitted the Exception Request. The analysis provided by the Permittee in the Exception Request, and reviewed by the Regional Water Board staff, demonstrated that the discharge from the Facility will be limited to concentrations and rates protective of beneficial uses identified in this Fact sheet.

- 4. Protection shall be demonstrated through analysis of all the beneficial uses of the receiving waters. For receiving waters which support domestic water supply (MUN) and water contact recreation (REC1), analysis shall include expected normal and extreme weather conditions within the discharge period, including estimates of instantaneous and long-term minimum, average, and maximum discharge flows and percent dilution in receiving waters. The analysis shall evaluate and address cumulative effects of all discharges, including point and nonpoint source contributions, both in existence and reasonably foreseeable. For receiving waters which support domestic water supply (MUN), the Regional Water Board shall consider the California Department of Health Services evaluation of compliance with the Surface Water Filtration and Disinfection Regulations contained in Section 64650 through 64666, Chapter 17, title 22 of the CCR. Demonstration of protection of beneficial uses shall include consultation with the California Department of Fish and Game regarding compliance with the California Endangered Species Act.*

The Exception Request included an analysis that compared the potential cumulative effects of the discharge of the tertiary treated wastewater that could occur under extreme conditions on the existing receiving water quality, with the existing effluent quality, and modeled the projected conditions. Constituents that were identified and compared to water quality objectives in the Basin Plan for the protection of beneficial uses include: color, taste and odor, floating materials, biostimulatory substances, nitrogen, phosphorus, phytoplankton chlorophyll-*a*, sediment, turbidity, total suspended solids, settleable materials, oil and grease, dissolved oxygen, pH, bacteria, temperature, toxicity, pesticides, and chemical constituents.

At the time the modeling was conducted to support the 2009 Exception Request, the new Facility had not been constructed and the Salt River Restoration Project had not commenced. Thus, the modeling was conducted based on the expected effluent quality from the new Facility (i.e., the design specifications) and receiving water conditions at that time (i.e., minimal upstream flows in the Salt River, Francis Creek as the headwaters). The purpose of the modeling was to evaluate the impact of the discharge at various locations in the Salt River downstream of the discharge and Francis Creek.

Since then, the new Facility has been constructed and portions of the Salt River Restoration Project have been completed, including dredging of the Salt River and realignment of Francis Creek flows. Although the conditions upon which the modeling was based have changed, the modeling likely represents a conservative estimate of the impacts of the current discharge. In general, effluent data from the new Facility indicates that the effluent quality is at or better than the expected quality used for the modeling. As a result of the Salt River Restoration Project, the receiving water

conditions have improved, including higher flows in the Salt River upstream of Francis Creek such that Francis Creek is no longer the headwaters and decreased sedimentation. Ambient background water quality conditions are also likely to improve due to the removal of sediment and the higher flows. Although upstream Francis Creek flows no longer flow through the natural drainage channel to which the Facility discharges under typical conditions, the discharge enters the Salt River at a point downstream of the confluence of the Francis Creek sediment management basin and diversion channel; thus, the Salt River will always contain, at a minimum, the flow from Francis Creek plus any additional upstream Salt River flows. The upstream Salt River flows will likely continue to increase with completion of the Salt River Restoration Project.

The 2009 Exception Request identified water quality impacts associated with biostimulatory substances (i.e., nutrients) as one of the primary concerns associated with allowing a discharge rate exception. To verify that the modeling results submitted as part of the Permittee's 2009 Exception Request are representative of current discharge and receiving water conditions and protective of water quality, this Order continues to require upstream and downstream monitoring for dissolved oxygen pH, temperature, specific conductance, and turbidity.

5. *The exception shall be limited to that increment of wastewater which remains after reasonable alternatives for reclamation have been addressed.*

The Permittee recycles all treated wastewater from May 15 through September 30 each year. Additional periods of recycling occur as weather permits. Because of large amounts of rainfall and high groundwater table in the North Coast Region, there are limited opportunities for additional recycling.

6. *The exception shall comply with State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California," and the federal regulations covering antidegradation (40 C.F.R. § 131.12).*

The General Findings of the Exception Request indicate:

"The new WWTF effluent quality, consistent and uniform discharge rates improve instream dissolved oxygen levels. In general, dissolved oxygen levels at the downstream sampling sites show predicted dissolved oxygen levels above the Basin Plan minimum dissolved oxygen limit of 7 mg/L. Ammonia levels at all three sites have been significantly improved due to the highly nitrified effluent from the new WWTF. Phytoplankton chlorophyll-a levels have also been reduced at all three sites. Following the end of the discharge period modeling results show that any effects or impacts from discharged effluent quickly dissipate for all constituents."

The exception to the discharge limitation will not result in degradation of the receiving water because it will result in improvements over existing conditions in the receiving waters. The exception therefore complies with state and federal anti-degradation policies.

7. *There shall be no discharge of waste during the period May 15 through September 30.*

The Order prohibits discharges to surface water between May 15 and September 30 each year, during which time the Permittee recycles the treated effluent for agricultural irrigation.

The analysis provided by the Permittee in the Exception Request, and reviewed by the Regional Water Board staff, demonstrated that the discharge from the Facility will be limited to concentrations and rates protective of beneficial uses identified in this Fact Sheet.

11. Prohibition III.K. The discharge of any radiological, chemical, or biological warfare agent into waters of the state is prohibited under Water Code section 13375.

This prohibition is established in this Order and is based on the discharge prohibitions contained in and section 13375 of the Water Code.

12. Prohibition III.L. The acceptance of septage is prohibited except as approved pursuant to section VI.C.4.c (Septage Handling Requirements).

This prohibition is newly established by this Order and is necessary to ensure that septage is not accepted in the absence of a septage management program to ensure that pollutants associated with domestic septage do not pass through or interfere with the operation or performance of the Facility.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 C.F.R. part 133.

In addition, 40 C.F.R. section 122.45(d)(2) states that technology-based permit limits shall be stated as average weekly and average monthly discharge limitations, unless impracticable, for POTWs. 40 C.F.R. section 103.102 provides detailed specifications for establishing effluent limitations for the technology-based constituents, BOD₅, TSS, and pH. Effluent limitations for BOD₅, TSS, and pH in Effluent Limitations IV.A.1.a, Table 4 and IV.A.1.b of this Order were established as required by 40 C.F.R. section 133.102, and have been retained in this Order.

Regulations promulgated in 40 C.F.R. section 125.3(a)(1) require technology-based effluent limitations for municipal dischargers to be placed in NPDES permits based on Secondary Treatment Standards or Equivalent to Secondary Treatment Standards.

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the U.S. EPA Administrator.

Based on this statutory requirement, U.S. EPA developed secondary treatment regulations, which are specified in 40 C.F.R. part 133. These technology-based regulations apply to all

municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of BOD₅, TSS, and pH, as follows:

a. BOD₅ and TSS

- i. The 30-day average shall not exceed 30 mg/L.
- ii. The 7-day average shall not exceed 45 mg/L.
- iii. The 30-day average percent removal shall not be less than 85%.

b. pH

The pH shall be maintained within the limits of 6.0 to 9.0.

The effluent limitation for pH required to meet the water quality objective for hydrogen ion concentration (pH) is contained in the Basin Plan, Table 3-1.

In addition, 40 C.F.R. section 122.45(f) requires the establishment of mass-based effluent limitations for all pollutants limited in Orders, except for 1) pH, temperature, radiation, or other pollutants which cannot be appropriately expressed by mass, and 2) when applicable standards and limitations are expressed in terms of other units of measure.

2. Applicable Technology-Based Effluent Limitations

The effluent limitations in this Order for BOD₅, TSS, and pH not only meet the technology-based requirements for secondary treatment set forth in section 133.102, but they also are required to meet the water quality-based requirements set forth in the Basin Plan.

In addition to the minimum federal technology-based requirements, the Basin Plan prohibits discharges to the Eel River and its tributaries when the waste discharge flow is greater than one percent (1:100) of the receiving water's flow during the allowable discharge season, unless an exception to the requirement is granted by the Regional Water Board. The Basin Plan specifies that exceptions shall be defined in NPDES permits for each discharger on a case by case basis. This requirement leaves discretion to the Regional Water Board to define the level of treatment necessary to protect water quality when authorizing an exception to the Basin Plan discharge rate limitation by the implementation of effluent limitations in individual permits.

- a. BOD₅ and TSS.** As described above, the secondary treatment standards at 40 C.F.R. part 133 establish the minimum level of effluent quality attainable by secondary treatment in terms of BOD₅, TSS.

The Permittee's treated effluent is discharged to a natural drainage channel that is tributary to the Salt River during the winter discharge period of October 1 to May 14. Historically, the Salt River was wide and deep enough to be used as a shipping channel. Over time, the Salt River has experienced significant reductions in channel capacity from sediment deposition and prolific growth of in-stream vegetation. As a result, the volume of effluent discharged from the Facility consistently exceeds one percent of the receiving water flow, and prior to the adoption of Order No. R1-2012-0097, the discharge was in violation of permit and Basin Plan requirements. To address this issue, the Permittee constructed a new WWTP utilizing a combination of extended aeration and disc filtration to comply with the criteria for an exception from the rate

limitations set forth in Prohibition 3 of the Basin Plan, which are discussed in detail under section IV.C.I of this Fact Sheet.

This Order includes technology-based effluent limitations based on information provided by the Permittee as part of the 2009 application for NPDES permit renewal, which included a request for an exception to the Basin Plan discharge rate prohibition (Exception Request). The Exception Request, which demonstrated the capabilities of the Facility, explained that the Facility is capable of consistently treating wastewater to tertiary level quality through the operation of extended aeration tanks, clarifiers, and disc filters. Tertiary level treatment is defined under these circumstances as the ability to achieve 10 mg/L as a monthly average for BOD₅ and TSS. The Exception request demonstrated that this level of treatment is necessary to ensure protection of beneficial uses at a discharge rate of one hundred percent (1:1) of the upstream receiving water flow.

An average weekly effluent limitation for BOD₅ and TSS has also been established in the Order as required by 40 C.F.R. section 122.45(d)(2), which states that effluent limitations for POTWs must be expressed as average weekly and average monthly limitations unless impracticable. In accordance with 40 C.F.R. section 133.101, the average weekly limitation was calculated by multiplying the average monthly limitation of 10 mg/L by 1.5 to obtain a result of 15 mg/L. Concentration-based limitations for BOD₅ and TSS reflect tertiary treatment and are more restrictive than those required by 40 C.F.R. part 133. This Order requires compliance with these effluent limitations to be met at the point of discharge from the Facility to the natural drainage channel at Discharge Point 001 (Monitoring Location EFF-001).

In addition to concentration limitations, 40 C.F.R. section 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal of BOD₅ and TSS shall not be less than 85 percent. This Order contains a limitation requiring an average of 85 percent removal of BOD₅ and TSS over each calendar month.

- b. pH.** The secondary treatment regulations at 40 C.F.R. part 133 require that pH be maintained between 6.0 and 9.0 standard units. Note that a more stringent effluent limitation range of 6.5 – 8.5 for pH is required to meet the water quality objective for hydrogen ion concentration (pH) in the Lower Eel River contained in Basin Plan, Table 3-1.
- c. Mass-Based Effluent Limitations.** Federal regulations at 40 C.F.R. section 122.45(f) require that, except under certain conditions, all permit limits, standards, or prohibitions be expressed in terms of mass units. Among the conditions exempting the application of mass-based limitations is section 40 C.F.R. section 122.45(f)(1)(i), which states “*for pH, temperature, and radiation, or other pollutants which cannot appropriately be expressed by mass*” and 40 C.F.R. section 122.45 (f)(1)(ii), which states “*when applicable standards and limitations are expressed in terms of other units of measurement.*”

This Order does not include mass-based effluent limitations for the following pollutants pursuant to the exception in 40 C.F.R. sections 122.45(f)(1)(i) and (ii);

- i. BOD₅ and TSS, because these two parameters are expressed in terms of concentration and percent removal; and
- ii. pH, because this parameter cannot appropriately be expressed by mass.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

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

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

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

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

- a. **Beneficial Uses.** Beneficial use designations for receiving waters for discharges from the Facility are presented in section III.C.1 of this Fact Sheet.
- b. **Basin Plan Water Quality Objectives.** In addition to the specific water quality objectives indicated above, the Basin Plan contains narrative objectives for color, tastes and odors, floating material, suspended material, settleable material, oil and grease, biostimulatory substances, sediment, turbidity, pH, dissolved oxygen, bacteria, temperature, toxicity, pesticides, chemical constituents, and radioactivity that apply to inland surface waters, enclosed bays, and estuaries, including the Eel River and its tributaries. For waters designated for use as MUN, the Basin Plan establishes as applicable water quality criteria the MCLs established by the State Water Board, Division of Drinking Water (DDW) for the protection of public water supplies at title 22 of the CCR section 64431 (Inorganic Chemicals) and section 64444 (Organic Chemicals).
- c. **SIP, CTR, and NTR.** Water quality criteria and objectives applicable to this receiving water are established by the CTR, established by the U.S. EPA at 40 C.F.R. section 131.38; and the NTR, established by the U.S. EPA at 40 C.F.R. section 131.36. Criteria for most of the 126 priority pollutants are contained within the CTR and the NTR.

The SIP, which is described in section III.C.3 of this Fact Sheet, includes procedures for determining the need for, and the calculation of, WQBELs and requires Permittees to submit data sufficient to do so.

At title 22, division 4, chapter 15 of the CCR, DDW has established MCLs for certain pollutants for the protection of drinking water. Chapter 3 of the Basin Plan establishes these MCLs as water quality objectives applicable to receiving waters with the beneficial use designation of municipal and domestic supply.

Aquatic life freshwater and saltwater criteria are identified as criterion maximum concentrations (CMC) and criterion continuous concentrations (CCC). The CTR defines the CMC as the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time without deleterious effects and the CCC as the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects. The CMC is used to calculate an acute or 1-hour average numeric effluent limitation and the CCC is used to calculate a chronic or 4-day average numeric effluent limitation. Aquatic life freshwater criteria were used for the RPA.

Human health criteria are further identified as “water and organisms” and “organisms only”. “Water and organism” criteria are designed to address risks to human health from multiple exposure pathways. The criteria from the “water and organisms” column of CTR were used for the RPA because the Basin Plan identifies that the receiving water, the Salt River, has the beneficial use designation of municipal and domestic supply.

3. Determining the Need for WQBELs

NPDES regulations at 40 C.F.R. section 122.44(d) require effluent limitations to 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.

For water quality-based effluent limitations for toxic pollutants, Section 5.2.3 of the EPA Technical Support Document for Water Quality-based Toxic Controls states “in lieu of an Average Weekly Limit (AWL) for POTWs, EPA recommends establishing an Maximum Daily Limit (MDL) (or a maximum test result for chronic toxicity) for toxic pollutants and pollutant parameters in water quality permitting. This is appropriate for at least two reasons. First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge’s potential for causing acute toxic effects would be missed. A MDL, which is measured by a grab sample, would be toxicologically protective of potential acute toxicity impacts.”

Section 1.4 of the SIP states that maximum daily effluent limitations shall be used for POTWs in place of average weekly effluent limitations for Water Quality Based Effluent Limitations. The SIP procedure of calculating an average monthly effluent limitation (AMEL) and a maximum daily effluent limitation (MDEL) applies to all CTR pollutants, both those that are for protection of aquatic life and those that are for the protection of human health.

Effluent limitations that are based on state and federal drinking water MCLs are established as average monthly limits only, because the MCLs are based on long-term exposure.

The RPA for this Facility was conducted as follows.

a. Non-Priority Pollutants

- i. pH.** The effluent limitation for pH of 6.5 to 8.5 is retained from Order No. R1-2012-0097. This limitation is based on the water quality objective for all surface waters established in Chapter 3, Table 3-1 of the Basin Plan. Federal technology-based requirements prescribed in 40 C.F.R. part 133 are not sufficient to meet these Basin Plan water quality standards.
- ii. Total Coliform Bacteria.** Coliform bacteria are a pollutant of concern in all wastewaters of domestic origin, and therefore this Order includes effluent limitations for total coliform bacteria. These effluent limitations will ensure that water quality objectives for bacteria, as established by Chapter 3 of the Basin Plan, will be maintained. The effluent limitations in Order No. R1-2012-0097 have been corrected to reflect standards for disinfected secondary-23 recycled water as established by DDW at title 22, division 4, chapter 3 of the CCR.
- iii. Settleable Solids.** High levels of settleable solids can have an adverse effect on aquatic habitat. Untreated or improperly treated wastewater can contain high amounts of settleable solids. The Lower Eel River and its tributaries are listed as impaired for sediment and settleable solids. Monthly average and maximum daily effluent limitations for settleable solids of 0.1 ml/L and 0.2 ml/L have been retained from Order No. R1-2012-0097. These limitations reflect levels of treatment attainable by secondary treatment facilities. This limitation is based on the levels of treatment that are attainable from secondary treatment facilities, on the water quality objective prohibiting bottom deposits for all surface waters of the North Coast Region established by the Basin Plan, and on the fact that the Lower Eel River is on the 303(d) list for sediment impairment.
- iv. Nitrogen Compounds.** Untreated domestic wastewater contains ammonia nitrogen. Nitrification is a biological process that converts ammonia to nitrite and nitrate. Denitrification is a process that converts nitrate to nitrogen gas, which is then released to the atmosphere. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream and inadequate or incomplete denitrification may result in the discharge of nitrate to the receiving stream. The Facility is designed to use nitrification to remove ammonia from the waste stream and denitrification to reduce nitrate in the waste stream culminating in an overall reduction in total nitrogen.
 - (a) Nitrogen.** The Basin Plan contains a narrative water quality objective for biostimulatory substances that states, “[w]aters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.” The Regional Water Board is increasingly concerned about the biostimulatory properties of discharges to surface water in the North Coast Region. Stimulation of biological growth can diurnally deplete dissolved oxygen in receiving water below Basin Plan objectives. The Exception Request submitted by the Permittee evaluated the potential for biostimulatory effects specific to Francis Creek and the Salt River from nutrients such as phosphorus- and nitrogen-containing compounds common

to treated wastewaters. Results from site-specific monitoring and modeling indicate that nitrogen is the potential limiting nutrient for biostimulatory activity in Francis Creek and the Salt River. Based on the available information, a total nitrogen concentration in the effluent of 10 mg/L has been shown, by modeling, to limit biostimulation to an extent that maintains receiving water dissolved oxygen concentrations within the range of the Basin Plan criteria most of the time. The Permittee sampled its discharge at Monitoring Location EFF-001 monthly, during periods of discharge, between February 2013 and May 2017. Monitoring results ranged between 1.6 mg/L and 15 mg/L based on 30 samples. Two results greater than 10 mg/L occurred in May and December 2013, and were attributed to a drop in the mixed liquor suspended solids (MLSS) count in the aeration basin. To support the Permittee's Exception Request, protect water quality, and ensure proper operation of the Facility, an AMEL of 10 mg/L for total nitrogen has been retained from Order No. R1-2012-0097.

(b) Nitrate. Nitrate is known to cause adverse health effects in humans. For waters designated as domestic or municipal supply, the Basin Plan (Chapter 3) adopts the MCLs, established by DDW for the protection of public water supplies at title 22 of the CCR, sections 64431 (Inorganic Chemicals) and 64444 (Organic Chemicals), as applicable water quality criteria. The MCL for nitrate (10 mg/L as N) is therefore applicable as a water quality criterion. The Permittee sampled its discharge at Monitoring Location EFF-001 monthly between February 2013 and May 2017. Monitoring results ranged between 0.02 mg/L to 5.8 mg/L based on 31 samples. In order to support the Permittee's Exception Request and to protect human health and prevent biostimulatory effects which could result in diurnal swings of dissolved oxygen concentrations in the receiving water below Basin Plan criteria, as described above, an AMEL of 10 mg/L for nitrate has been retained from Order No. R1-2012-0097.

(c) Ammonia. Ammonia is known to cause toxicity to aquatic organisms in surface waters. The Basin Plan establishes a narrative water quality objective for toxicity, stating that "[a]ll waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life." Due to concerns regarding ammonia toxicity, the Regional Water Board relies on U.S. EPA's recommended water quality criteria for ammonia to interpret the Basin Plan's narrative objective for toxicity. For freshwater, the recommended criteria are from the April 2013 *Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater*, EPA 822-R-13-001 (2013 Freshwater Criteria). The 2013 Freshwater Criteria is an update to the December 1999 *Update of Ambient Water Quality Criteria for Ammonia* (1999 Freshwater Criteria).

The 2013 Freshwater Criteria recommends acute and chronic water quality criteria for the protection of aquatic life, including salmonids and sensitive freshwater mussel species in the Family Unionidae that are more sensitive to ammonia than salmonids. Like the 1999 Freshwater Criteria document, the

2013 Freshwater Criteria document recommends acute (1-hour average) criteria based on pH and the presence/absence of salmonids and chronic (30-day average) criteria based on pH and temperature and that no 4-day average concentration should exceed 2.5 times the 30-day chronic criterion. In addition, the 2013 Freshwater Criteria document recommends these same criteria for the sensitive mussel species.

Adequate information is not available to determine if these freshwater mussels are present in the receiving water. The 2013 Freshwater Criteria document states, *"In the case of ammonia, where a state demonstrates that mussels are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site."*

For this Order, the Regional Water Board has changed its approach for evaluating ammonia toxicity. This Order establishes an Ammonia Impact Ratio (AIR) for determining compliance with ammonia effluent limitations. The AIR is calculated as the ratio of the ammonia concentration in the effluent to the applicable 2013 Freshwater Criteria which is based on the receiving water pH and temperature at the time that each effluent sample is collected. See Attachment H of this Order for a sample log to help calculate and record the AIR values and Attachment G for applicable pH- and temperature-dependent criteria. The Permittee is required to perform an Ammonia Study, as stated in section VI.C.2.a of this Order, to determine the presence of freshwater mussels.

Effluent monitoring results ranged from non-detect to 14 mg/L based on 38 samples collected at Monitoring Location EFF-001 between February 2013 and May 2018. However, Regional Water Board staff determined that effluent data collected during 2013, the first year that the Permittee operated its upgraded treatment plant, is not representative of treatment plant performance, thus the maximum effluent concentration used for the reasonable potential analysis is 1.7 mg/L. The maximum observed upstream receiving water ammonia concentration was 1.1 mg/L, based on 38 samples collected between February 2013 and May 2018.

Because ammonia levels in the effluent have been measured at concentrations greater than EPA's 2013 Freshwater Criteria, the Regional Water Board concludes that discharges from the Facility have a reasonable potential to cause or contribute to exceedances of the Basin Plan's applicable narrative water quality criterion for toxicity. Therefore, this Order includes effluent limitations for ammonia for the protection of aquatic life. This Order establishes an average monthly effluent limitation (AMEL) of 1 and a maximum daily effluent limitation of 1 as an AIR. Note that only data from January 2014 through May 2017 was used to calculate effluent limitations, as ammonia data from 2013, the first year that the Permittee operated its upgraded Facility, was not representative of the typical effluent quality observed during the rest of the permit term. Fact Sheet section IV.C.4 provides calculations of the ammonia AMEL and MDEL.

b. Priority Pollutants

The SIP establishes procedures to implement water quality criteria from the NTR and CTR and for priority, toxic pollutant objectives established in the Basin Plan. The implementation procedures of the SIP include methods to determine reasonable potential (for pollutants to cause or contribute to excursions above state water quality standards) and to establish numeric effluent limitations, if necessary, for those pollutants showing reasonable potential.

Section 1.3 of the SIP requires the Regional Water Board to use all available, valid, relevant, and representative receiving water and effluent data and information to conduct an RPA. During the term of Order No. R1-2012-0097, priority pollutant sampling was conducted on April 4, 2017 (effluent and receiving water). Additional data for copper, lead, mercury, nickel, zinc, 2,3,7,8-TCDD, chlorodibromomethane, dichlorobromomethane, bis(2-ethylhexyl)phthalate, alpha-BHC, heptachlor, and heptachlor epoxide, collected between February 2013 and May 2017, was also used in conducting the RPA.

Hardness: The CTR and the NTR 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 SIP requires water quality criteria be properly adjusted for hardness, using the hardness of the receiving water. The hardness-dependent metal criteria include cadmium, copper, chromium (III), lead, nickel, silver, and zinc. The Permittee was not required to collect upstream receiving water samples for hardness, so the minimum observed receiving water hardness of 87 mg/L at the point of discharge (Monitoring Location R-002) was used to calculate the criteria.

To conduct the RPA, Regional Water Board staff identified the maximum effluent concentration (MEC) and maximum background (B) concentration for each priority, toxic pollutant from effluent and receiving water data provided by the Permittee, and compared this information to the most stringent applicable water quality criterion (C) for each pollutant with applicable water quality criteria from the NTR, CTR, and the Basin Plan. Section 1.3 of the SIP establishes three triggers for a finding of reasonable potential.

Trigger 1. If the MEC is greater than C, there is reasonable potential, and an effluent limitation is required.

Trigger 2. If B is greater than C, and the pollutant is detected in effluent (MEC > ND), there is reasonable potential, and an effluent limitation is required.

Trigger 3. After a review of other available and relevant information, a permit writer may decide that a WQBEL is required. Such additional information may include, but is not limited to: the facility type, the discharge type, solids loading analyses, lack of dilution, history of compliance problems, potential toxic impact of the discharge, fish tissue residue data, water quality and beneficial uses of the receiving water, CWA 303(d) listing for the pollutant, and the presence of endangered or threatened species or their critical habitat.

c. Reasonable Potential Determination

The reasonable potential analysis (RPA) demonstrated reasonable potential for discharges of 2,3,7,8-TCDD, ammonia, and total nitrogen from the Facility to cause or contribute to exceedances of applicable water quality criteria. Reasonable potential could not be determined for all pollutants, as there are not applicable water quality criteria for all pollutants. The RPA determined that there is either no reasonable potential or there was insufficient information to conclude affirmative reasonable potential for 125 of the 126 priority pollutants.

Table F-4 summarizes the RPA for each pollutant that was reported in detectable concentrations in the effluent or the receiving water. The MECs, most stringent water quality objectives/water quality criteria (WQO/WQCs), and background concentrations (B) used in the RPA are presented, along with the RPA results (Yes or No and which trigger) for each toxic pollutant analyzed. No other pollutants with applicable, numeric water quality criteria from the NTR, CTR, and the Basin Plan were measured above detectable concentrations during the monitoring events conducted by the Permittee. Attachment F-1 to this Order summarizes the RPA for all 126 priority pollutants.

Table F-4. Summary of Reasonable Potential Analysis Results

CTR #	Pollutant	Unit	C or Most Stringent WQO/WQC	MEC or Minimum DL ^{1,2}	B or Minimum DL ^{1,2}	RPA Results ³
1	Antimony	µg/L	6	0.17	0.285	No
2	Arsenic	µg/L	10	1.27	1.62	No
5a	Chromium (III)	µg/L	185	0.522	5.49	No
6	Copper	µg/L	27 ⁴	12	6.69	No
7	Lead	µg/L	2.7	0.137	0.785	No
9	Nickel	µg/L	46	19	14.5	No
10	Selenium	µg/L	5	0.673	<0.132	No
13	Zinc	µg/L	106	67	13.5	No
16	2,3,7,8-TCDD	µg/L	1.3 x 10 ⁻⁸	3.5 x 10 ⁻⁷	0.00001	Yes (Trigger 1)
70	Butylbenzyl Phthalate	µg/L	3,000	1.2	1.2	No
--	Ammonia	mg/L	1.23 ⁵	1.7 ⁶	1.1	Yes (Trigger 1)
--	Nitrate	mg/L	10	5.8	4.3	No
--	Total Nitrogen	mg/L	10	15	Not Available	Yes (Trigger 3)
--	Specific Conductance	µmhos/cm	900	373	663	No
--	Total Dissolved Solids	mg/L	500	370	460	No

CTR #	Pollutant	Unit	C or Most Stringent WQO/WQC	MEC or Minimum DL ^{1,2}	B or Minimum DL ^{1,2}	RPA Results ³
<p>Table Notes:</p> <ol style="list-style-type: none"> The Maximum Effluent Concentration (MEC) or maximum background concentration (B) is the actual detected concentration unless it is preceded by "<", in which case the value shown is the minimum detection level as the analytical result was reported as not detected (ND). The MEC or B is "Not Available" when there are no monitoring data for a constituent. RPA Results: = Yes, if MEC > WQO/WQC, or B > WQO/WQC and MEC is detected. = No, if MEC and B or < WQO/WQC or all effluent data are undetected. = Undetermined (UD). Copper WQO calculated with a WER of 3.20 and the most stringent WQO from the CTR using the lowest receiving water hardness of 87 mg/L ($3.20 \times 8.3 \mu\text{g/L} = 27 \mu\text{g/L}$). Ammonia criteria are determined on a sliding scale based upon temperature and pH. The criterion represented in this table is based upon chronic exposure and a temperature of 10°C and a pH of 8.71. Data from January 2014 through May 2017 was used to calculate effluent limitations, as ammonia data from 2013 was not representative of the typical effluent quality observed during the rest of the permit term. 						

Additional details regarding the priority pollutant constituent for which reasonable potential was found are included in the following paragraph:

2,3,7,8-TCDD. The CTR establishes a water quality objective for the protection of human health for 2,3,7,8-TCDD of $1.3 \times 10^{-8} \mu\text{g/L}$. The Permittee sampled the effluent for 2,3,7,8-TCDD five times during the term of Order No. R1-2012-0097 with results ranging from non-detect to $3.5 \times 10^{-7} \mu\text{g/L}$. 2,3,7,8-TCDD was not detected in the receiving water based on one sample. A determination of reasonable potential has been made based on the MEC of $3.5 \times 10^{-7} \mu\text{g/L}$ exceeding the most stringent water quality criterion of $1.3 \times 10^{-8} \mu\text{g/L}$.

Additional details regarding priority pollutant constituents for which reasonable potential was not found but warrant further explanation are included in the following paragraphs:

Copper. The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. The criteria for copper is in dissolved concentrations. U.S. EPA recommends conversion factors to translate dissolved concentrations to total concentrations. The U.S. EPA default conversion factors for copper in freshwater are 0.96 for both the acute and the chronic criteria. The default WER used for calculating criteria for copper is 1.0. The Permittee has conducted a WER study to determine the site-specific toxicity of copper in the receiving water at the point of discharge. The Permittee's study concluded that a site specific WER of 3.20 applies to the discharge. Using the worst-case measured hardness from the receiving water (87 mg/L), the U.S. EPA-recommended dissolved-total translator of 0.96, and the site-specific WER, the applicable chronic criterion (maximum 4-day average concentration) is adjusted to 27 $\mu\text{g/L}$ and the applicable acute criterion (maximum 1-hour average concentration) is adjusted to 39 $\mu\text{g/L}$.

The Permittee sampled the effluent for copper 22 times during the term of Order No. R1-2012-0097, with effluent concentrations ranging from non-detect to 12 $\mu\text{g/L}$. Copper was detected in the receiving water based on one sample at a concentration of 6.69 $\mu\text{g/L}$. A determination of no reasonable potential has been made based on the MEC of 12 $\mu\text{g/L}$ not exceeding the most stringent water quality criterion of 27 $\mu\text{g/L}$.

4. WQBEL Calculations

Final WQBELs have been determined using the methods described in Section 1.4 of the SIP.

Step 1: To calculate the effluent limits, an effluent concentration allowance (ECA) is calculated for each pollutant found to have reasonable potential using the following equation, which takes into account dilution and background concentrations:

$$ECA = C + D (C - B),$$

Where:

C = the applicable water quality criterion (adjusted for effluent hardness and expressed as the total recoverable metal, if necessary)

D = dilution credit (here D= 0, as the discharge does not qualify for a dilution credit)

B = background concentration

Here, no credit for dilution is allowed, which results in the ECA being equal to the applicable criterion (ECA = C).

Step 2: For each ECA based on an aquatic life criterion/objective (ammonia) the long-term average discharge condition (LTA) is determined by multiplying the ECA by a factor (multiplier), which adjusts the ECA to account for effluent variability. The multiplier depends on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP provides pre-calculated values for the multipliers based on the values of the CV. When the data set contains less than 10 sample results, or when 80 percent or more of the data set is reported as non-detect (ND), the CV is set equal to 0.6. Derivation of the multipliers is presented in Section 1.4 of the SIP.

The SIP procedure assumes a 4-day averaging period for calculating the LTA. However, U.S. EPA 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 for ammonia corresponding to the 30-day CCC was calculated assuming a 30-day averaging period.

From Table 1 in the SIP, the ECA multipliers for calculating LTAs at the 99th percentile occurrence probability for ammonia are 0.180 (acute multiplier), 0.332 (chronic 4-day multiplier), and 0.630 (chronic 30-day multiplier). The LTAs are determined as follows.

Table F-5. Determination of Long Term Averages

Pollutant	Units	ECA			ECA Multiplier			LTA		
		Acute	Chronic 4-Day	Chronic 30-Day	Acute	Chronic 4-Day	Chronic 30-Day	Acute	Chronic 4-Day	Chronic 30-Day
Ammonia (as N)	mg/L	1.45	3.07	1.23	0.180	0.332	0.630	0.260	1.02	0.773

Step 3: WQBELs, including an AMEL and MDEL, are calculated using the most limiting (lowest) LTA. The LTA is multiplied by a factor that accounts for averaging periods and exceedance frequencies of the effluent limitations, and for the AMEL, the effluent monitoring frequency. Here, the CV is set equal to 1.15 for ammonia, and the sampling frequency is set equal to 4 (n = 4) for the acute criterion and chronic criterion, and 30 (n = 30) for the

chronic 30-day criterion. The 99th percentile occurrence probability was used to determine the MDEL multiplier and a 95th percentile occurrence probability was used to determine the AMEL multiplier. From Table 2 of the SIP, the MDEL multiplier for ammonia is 5.55, and the AMEL multiplier is 2.09. Final WQBELs are determined by calculating the AIR for each of the ammonia standards (AMEL and MDEL). Attachment H of this Order includes two tables that display the AMEL and MDEL ammonia standards. The ammonia standards are calculated by taking the variable ammonia criteria and multiplying it by the ECA multiplier and the appropriate AMEL and MDEL multiplier. The 2013 ammonia criteria are dependent on the pH and temperature of the receiving water. For example:

$$\text{AMEL Ammonia Standard} = (2013 \text{ Ammonia Criteria (Attachment H)} * \text{AMEL Multiplier (2.09)} * \text{ECA Multiplier (0.18)})$$

$$\text{MDEL Ammonia Standard} = (2013 \text{ Ammonia Criteria (Attachment H)} * \text{MDEL Multiplier (5.55)} * \text{ECA Multiplier (0.18)})$$

The AIR, or final WQBEL, is determined by dividing the ammonia concentration in each sample by the appropriate ammonia standard (AMEL and MDEL). If the AIR is greater than 1.0 then the Permittee is not in compliance with the AIR effluent limitation.

Step 4: When the most stringent water quality criterion/objective is a human health criterion/objective (as for 2,3,7,8-TCDD), the AMEL is set equal to the ECA. From Table 2 of the SIP, when CV = 0.6 and n = 4, the MDEL multiplier at the 99th percentile occurrence probability equals 3.11, and the AMEL multiplier at the 95th percentile occurrence probability equals 1.55. The MDEL for protection of human health is calculated by multiplying the ECA by the ratio of the MDEL multiplier to the AMEL multiplier. Final WQBELs for are determined as follows.

Table F-6. Determination of Final WQBELs Based on Human Health Criteria

Pollutant	ECA (µg/L)	MDEL/AMEL	MDEL (µg/L)	AMEL (µg/L)
2,3,7,8-TCDD	1.30 x 10 ⁻⁸	2.01	2.60 x 10 ⁻⁸	1.30 x 10 ⁻⁸

5. Whole Effluent Toxicity (WET)

Monitoring and effluent limitations for whole effluent toxicity protect the receiving water from the aggregate effect of a mixture of pollutants that may be present in effluent. There are two types of WET tests – acute and chronic. An acute toxicity test is conducted over a short time period and measures mortality. A chronic test is conducted over a longer period of time and may measure mortality, reproduction, and/or growth.

WET requirements are derived from the CWA and the Basin Plan. The Basin Plan establishes a narrative water quality objective for toxicity that states, “All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, or aquatic life.” Detrimental responses may include, but are not limited to, decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota. For compliance with the Basin Plan’s narrative toxicity objective, this

Order requires the Permittee to conduct WET testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Requirements (MRP) (Attachment E, section V).

a. Acute Aquatic Toxicity

Consistent with Order No. R1-2012-0097, this Order includes an effluent limitation for acute toxicity in accordance with the Basin Plan, which requires that the average survival of test organisms in undiluted effluent for any three consecutive 96-hour bioassay tests be at least 90 percent, with no single test having less than 70 percent survival.

The Order implements federal guidelines (Regions 9 and 10 Guidelines for Implementing Whole Effluent Toxicity Testing Programs) by requiring the Permittee to conduct acute toxicity tests on a fish species and on an invertebrate species to determine the most sensitive species. According to the U.S. EPA manual, *Methods for Estimating the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/600/4-90/-27F), the acceptable vertebrate species for the acute toxicity test are the fathead minnow, *Pimephales promelas* and the rainbow trout, *Oncorhynchus mykiss*. The acceptable invertebrate species for the acute toxicity test are the water flea, *Ceriodaphnia dubia*, *Daphnia magna*, and *D. pulex*. This Order requires the Permittee to conduct a screening test using a vertebrate and invertebrate species. After the screening test is completed, monitoring can be reduced to the most sensitive species. Attachment E of this Order requires annual acute WET monitoring.

b. Chronic Aquatic Toxicity

The SIP requires the use of short-term chronic toxicity tests to determine compliance with the narrative toxicity objectives for aquatic life in the Basin Plan. The SIP requires that the Permittee demonstrate the presence or absence of chronic toxicity using tests on the fathead minnow, *Pimephales promelas*, the water flea, *Ceriodaphnia dubia*, and the freshwater alga, *Selenastrum capricornutum* (also named *Raphidocelis subcapitata*). Attachment E of this Order requires semiannual chronic WET monitoring to demonstrate compliance with the narrative toxicity objective.

The Permittee conducted chronic toxicity testing using *P. promelas*, *C. dubia*, and *S. capricornutum*. The following table summarizes the chronic toxicity testing results from the term of Order No. R1-2012-0097.

Table F-7. Summary of Chronic Toxicity Results

Date	<i>Pimephales promelas</i>		<i>Ceriodaphnia dubia</i>		<i>Selenastrum capricornutum</i>
	Survival (TUc)	Growth (TUc)	Survival (TUc)	Reproduction (TUc)	Growth (TUc)
December 16, 2013	1	1	1	1	1
April 28, 2014	--	--	1 ¹	8 ¹	1
December 3, 2014	1	1	1 ¹	>8 ¹	1
January 29, 2015	--	--	1	1	--
March 25, 2015	--	--	1	1	--
March 26, 2015	--	--	1	1	--
January 25, 2016	1	2	--	--	1
April 4, 2016	1	1	1	1	--

Date	<i>Pimephales promelas</i>		<i>Ceriodaphnia dubia</i>		<i>Selenastrum capricornutum</i>
	Survival (TUC)	Growth (TUC)	Survival (TUC)	Reproduction (TUC)	Growth (TUC)
April 5, 2016	--	--	1	1	--
November 7, 2016	1	1	1 ¹	1 ¹	1
January 30, 2017	1	1	1 ¹	1 ¹	1
November 27, 2017	1	1	1	1	1
February 19, 2018	1	1	1	1	1

Table Notes:

- Per the analytical laboratory reports, statistical analyses indicated that one or more of the test replicates at certain treatments (e.g., receiving water control, 12.5% effluent treatment) were statistical outliers. Per the U.S. EPA method manual identified in section V.B.4 of Attachment E to this Order, the laboratory report provided analyses both with and without the outlier data. The reports did not provide an explanation for the cause of the outliers. Section 3.1 of Appendix A of the method manual states, "An outlier is an *inconsistent or questionable data point that appears unrepresentative of the general trend exhibited by the majority of the data. Outliers may be detected by tabulation of the data, plotting, and by an analysis of the residuals. An explanation should be sought for any questionable data points. Without an explanation, data points should be discarded only with extreme caution. If there is no explanation, the analysis should be performed both with and without the outlier, and the results of both analyses should be reported.*" Results reported in the table reflect analyses with and without outliers.

Based on the observed chronic toxicity to *C. dubia* reproduction on April 28, 2014, and December 3, 2014, and the observed chronic toxicity to *P. promelas* growth on January 25, 2016, the Regional Water Board concludes that the discharge has reasonable potential to cause or contribute to an exceedance of the Basin Plan’s narrative toxicity objective. Therefore, this Order establishes a narrative effluent limitation for chronic toxicity.

Numeric chronic toxicity effluent limitations have not been included in the Order for consistency with the SIP, which implements narrative toxicity objectives in basin plans and specifies use of a numeric trigger for accelerated monitoring and implementation of a Toxicity Reduction Evaluation (TRE) in the event that persistent toxicity is detected. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-0012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, "In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works, that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits." A statewide toxicity plan is under development to address this issue. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision, it is

infeasible to develop numeric effluent limitations for chronic toxicity at this time. The SIP revision may require a permit modification to incorporate new statewide toxicity criteria established by the upcoming SIP revision.

This Order includes a reopener that allows the Regional Water Board to reopen the permit and include a numeric chronic toxicity limitation, a revised acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.

To ensure compliance with the narrative effluent limitation and the Basin Plan's narrative toxicity objective, the Permittee is required to conduct semiannual chronic WET testing at Discharge Point 001, as specified in the MRP (Attachment E, section V). Furthermore, the MRP (Attachment E, section V.C) requires the Permittee to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates toxicity with a result of "Fail" in 100 percent effluent, the Permittee is required to initiate a TRE in accordance with an approved TRE work plan. The "Pass/Fail" trigger is not an effluent limitation; it is the toxicity threshold at which the Permittee is required to perform accelerated chronic toxicity monitoring, as well as the threshold to initiate a TRE if a pattern of effluent toxicity has been demonstrated.

c. Test of Significant Toxicity (TST)

Order No. R1-2012-0097 established a numeric chronic toxicity trigger of 1.0 TU_c = 100/No Observed Effect Concentration (NOEC), using a five-concentration hypothesis test. In 2010, U.S. EPA endorsed the peer-reviewed *Test of Significant Toxicity (TST) two-concentration hypothesis testing approach in National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010) as an improved hypothesis-testing tool to evaluate data from U.S. EPA's toxicity test methods. The TST hypothesis testing approach more reliably identifies toxicity—in relation to the chronic (0.25 or more) mean response of regulatory management concern—than the NOEC hypothesis-testing approach. The TST hypothesis testing approach more reliably identifies toxicity – in relation to the acute (0.20 or more) mean responses of regulatory management concern – than the NOEC approach used previously to establish effluent limitations for acute toxicity.

Since the TST approach has not previously been applied for determining reasonable potential or establishing effluent limitations for acute or chronic toxicity, this Order does not include numeric effluent limitations for acute or chronic toxicity based on the TST approach. However, this Order does require the Permittee to monitor and report results in a manner that will allow the Regional Water Board to conduct an RPA in accordance with the TST approach at the time of the next permit renewal.

The State Water Board is developing a toxicity amendment to the *Water Quality Control Plan for Enclosed Bays and Estuaries of California* that will standardize the regulation of aquatic toxicity for all non-oceanic surface waters. U.S. EPA's TST approach is an essential component of this draft toxicity amendment as it forms the basis for utilizing numeric water quality objectives and acts as the primary means of determining compliance with the proposed effluent limitations.

In a letter dated February 12, 2014, the State Water Board submitted an alternative test process (ATP) request to U.S. EPA Region 9 for the statewide use of a two-

concentration toxicity test design when using the TST approach. This two-concentration test design is composed of a single effluent concentration and a control concentration. U.S. EPA approved the ATP request on March 17, 2014. In June 2014, the approval was challenged in court on procedural grounds under the Administrative Procedures Act by the Southern California Alliance of Publicly Owned Treatment Works (SCAP) and the Central Valley Clean Water Association (CVCWA). The U.S. EPA withdrew the approval and notified State Water Board in a memo dated February 11, 2015.

It is important to note that U.S. EPA's rescission of its approval of the ATP is not based on the substantive TST statistical analysis or the scientific validity of a two-concentration test design. The withdrawal letter also states that currently there is a proposed rulemaking to change the language in the ATP regulations at 40 C.F.R. part 136.

The benefits of requiring the TST in new or amended permits include improving the statistical power of the toxicity test, and simplifying the analysis as compared to the traditional hypothesis statistical approaches or point estimates. The calculations are straightforward and provide a clear pass/fail result. With the withdrawal of the two-concentration test design approval, an NPDES permit can still require the TST for statistical analyses. Toxicity tests shall be run using a multi-concentration tests design in accordance with 40 C.F.R. section 136.3, and the TST shall be utilized with the biological responses from the permitted in-stream waste concentration (IWC) and the control (effluent concentration of zero). However, even with only two of the five concentration biological responses being used, cost savings in the form of time and effort are still realized for the statistical analysis and data interpretation carried out by the Permittee, lab, and permit manager. This Order requires application of the TST for statistical analysis of whole effluent toxicity data.

Tests of Significant Toxicity Design

The TST's null hypothesis for chronic toxicity is:

H_0 : Mean response (IWC in % effluent) \leq 0.75 mean response (control)

Results are analyzed using the TST approach and an acceptable level of chronic toxicity is demonstrated by rejecting the null hypothesis and reporting "Pass" or "P".

The chronic IWC (in % effluent) for Discharge Point 001 is 100%. The chronic toxicity trigger for Discharge Point 001 is expressed as a null hypothesis (H_0) and regulatory management decision (b value) of 0.75 for the chronic toxicity methods in the MRP.

The null hypothesis for this discharge is:

H_0 : Mean response (100% effluent) \leq 0.75 mean response (control)

Results shall be analyzed using the TST hypothesis testing approach in section V.B.6.a of the MRP. Compliance with this chronic toxicity limitation is demonstrated by rejecting the null hypothesis and reporting "Pass" or "P".

When the chronic toxicity test results in a "Fail" or "F," the Permittee must initiate accelerated monitoring as specified in the MRP (Attachment E, section V). After accelerated monitoring, if conditions of chronic toxicity are found to persist, the Permittee will be required to conduct a TRE, as described by the MRP.

Notification requirements for chronic WET testing include a 72-hour verbal notification requirement and a 14 day written report requirement, if test results indicate toxicity. The 14 day written notification is established in the U.S. EPA WET Guidance documents cited in the MRP. The 72-hour verbal notification requirement is being added to provide the Regional Water Board with knowledge of the toxicity in advance of the written report. The 72-hour requirement is intended to give the Permittee sufficient time to make a telephone call to Regional Water Board staff and accounts for non-working days (e.g., weekends). Verbal notification of WET test exceedances may be left by voice mail if the Regional Water Board staff person is not immediately available by telephone.

This Order includes a requirement for the Permittee to conduct a screening test using at least one vertebrate, invertebrate, and plant species. After the screening test is completed, monitoring can be reduced to the most sensitive species.

This Order also includes a narrative chronic toxicity limitation as required by State Water Board Order No. WQO 2003-012.

D. Final Effluent Limitation Considerations

1. Anti-Backsliding Requirements

Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 C.F.R. section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in Order No. R1-2012-0097, with the exception of nitrate nitrogen and mass-based effluent limitations for BOD₅ and TSS.

Order No. R1-2012-0097 included effluent limitations for total coliform that included a maximum daily effluent limitation of 230 MPN/100 mL. This Order revises the maximum daily total coliform effluent limitation to be 240 MPN/100 mL, based on the title 22 requirements for disinfected secondary-23 treated effluent. The existing coliform effluent limit constitutes a mistaken interpretation of the title 22 requirements, which permits the relaxation of effluent limitations consistent with CWA section 402(o)(2)(B)(ii).

Order No. R1-2012-0097 included an average monthly effluent limitation of 10 mg/L for nitrate nitrogen. As shown in Table F-4 of this Fact Sheet, effluent data reveals that the discharge does not demonstrate reasonable potential to cause or contribute to an exceedance of the water quality objective for nitrate. In addition, nitrate nitrogen is a component of total nitrogen, thus inclusion of effluent limitations for both nitrate and total nitrogen is duplicative and that such duplication of effluent limitations was based on a technical mistake or mistaken interpretation of the law, which permits the removal of effluent limitations consistent with CWA section 402(o)(2)(B)(ii). Therefore, the Order does not retain the effluent limitation for nitrate nitrogen.

Order No. R1-2012-0097 established final mass-based effluent limitations for BOD₅ and TSS. Mass limitations for BOD₅ and TSS for discharges of treated wastewater have been removed because Regional Water Board staff misinterpreted the exception of 40 C.F.R. section 122.45(f)(2), which states that mass limitations are not required "*when applicable standards and limitations are expressed in terms of other units of measure.*" Secondary treatment standards for BOD₅ and TSS in 40 C.F.R. section 133.102, on which the effluent limitations in

previous permits were based, are expressed in concentration and percent removal (i.e., other units of measure). The relaxation of effluent limitations for BOD₅ and TSS in this Order is permissible under CWA section 402(o)(2)(B), because Regional Water Board staff has determined that mass-based limitations for BOD₅ and TSS were applied in the previous permits as a result of a mistaken interpretation of law when issuing those previous permits.

Historically, the Regional Water Board routinely incorporated mass-based limits (in addition to concentration-based limits) for BOD₅ and TSS in NPDES permits to encourage correction of I&I. Applied in this way, mass-based limitations effectively restrict a POTW's wet-weather influent flows to less than or equal to the treatment facility's design capacity in situations where POTW's experience excessive I&I as a result of climate conditions and/or aging infrastructure.

In addition, Regional Water Board staff previously held that anti-backsliding regulations prevented the removal of mass-based limitations for BOD₅ and TSS because they were appropriate and necessary to protect water quality and prevent water quality degradation in receiving waters. While it is conceivable that the absence of mass-based limitations for these pollutants may result in an increased pollutant loading to surface waters, even if there is a resulting increase in pollutant loading, there is no evidence that the increase will result in degradation of water quality. Therefore, relaxation of effluent limitations for BOD₅ and TSS in this Order is also permissible under CWA section 402(o)(2)(B), based on new information available to the Regional Water Board.

Regional Water Board staff conducted an I&I analysis utilizing the definitions of excessive I&I in the federal regulations at 40 C.F.R. sections 35.2005(b) and 133.103(d). Using influent flow data collected between February 1, 2013 and July 31, 2017 and a population of 1,400 as reported in the ROWD, the Regional Water Board conducted an analysis of per capita flows for comparison with the definitions of "excessive I&I" in 40 C.F.R section 35.2005(b)(28) and 133.103(d) (i.e., greater than 275 gpd per capita per day). Effluent flows exceeded 275 gpd per capita on 601 occasions.

In addition, the methodology in a report titled *Recommended Standards for Wastewater Treatment Facilities, Policy for the Design, Review, and Approval of Plans and Specifications for Wastewater Collection and Treatment Facilities*, 2014 Edition, A Report of the Wastewater Committee of the Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers was used to calculate a peaking factor, above which excessive infiltration is indicated. Using Figure 1 of this methodology report, a peaking factor of 3.70 is the maximum rate of wastewater flow that is calculated for a population of 1,400. The analysis revealed 62 exceedances of the peaking factor, with exceedances ranging from 3.71 to 4.20.

The permit renewal application included a letter from the Permittee to the Regional Water Board staff, acknowledging high I&I in the collection system. The letter states, "The [collection] system is old and allows considerable amounts of water to enter the system. Much of the pipe consists of old 4-foot sections of clay pipe which allows groundwater and precipitation to enter the system." Order No. R1-2012-0097 indicates that, in previous permit terms, the Permittee rehabilitated manholes and replaced or repaired several faulty portions of collection lines within the Facility's collection system, which resulted in some improvement; however, I&I is still a significant issue at the Facility. During storm events, influent flows exceeding the design treatment capacity are diverted from the headworks to

the equalization basin for storage and directed back to the headworks for full treatment once influent flows have subsided. To accommodate the excess influent in the equalization basin and ensure the integrity of the pond, plant operators have had to send high volumes of pond water through the treatment plant, which has resulted in exceedances of the flow prohibition in Order No. R1-2012-0097. The Permittee has received a grant under the Clean Water State Revolving Fund to investigate the infiltration problem and determine solutions. A time schedule order (TSO) will be issued with a compliance schedule for the Permittee to submit a plan and schedule for addressing I&I issues.

2. Antidegradation Policies

State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality Waters in California (the Antidegradation Policy) requires that disposal of waste into waters of the state be regulated to achieve the highest water quality consistent with the maximum benefit to the people of the state. The quality of some waters is higher than established by adopted policies and that higher quality water shall be maintained to the maximum extent possible consistent with the Antidegradation Policy. The Antidegradation Policy requires that (1) higher quality water will be maintained until it has been demonstrated to the state that any change will be consistent with the maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of the water, and will not result in water quality less than that prescribed in the policies; and (2) any activity that produces a waste or may produce waste or increased volume or concentration of waste and discharges to existing high quality water will be required to meet waste discharge requirements that will result in the best practicable treatment or control (BPTC) of the discharge necessary to assure pollution or nuisance will not occur, and the highest water quality consistent with the maximum benefit to the people of the state will be maintained.

a. Surface Water

This Order is consistent with applicable federal and state antidegradation policies, as it does not authorize the discharge of increased concentrations of pollutants or increased volumes of treated wastewater beyond that which was permitted to discharge in accordance with Order No. R1-2012-0097.

b. Groundwater

The distribution of recycled water to land at or below hydraulic agronomic rates and where proper irrigation system design and BMPs are implemented is not expected to result in degradation to surface water because the potential for irrigation runoff will be prevented or minimized.

The discharge of recycled water may result in degradation of groundwater, primarily due to salts and nitrogen.

Degradation of groundwater by constituents in recycled water (primarily salts and nitrogen) may be permitted where it has been demonstrated that any change will be consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water, and will not result in water quality less than that prescribed in the Basin Plan. In addition, it must be demonstrated that discharges to high quality waters meet waste discharge requirements that result in the best practicable treatment or control of the discharge necessary to avoid pollution

or nuisance and assure that the highest water quality consistent with the maximum benefit to the people of the state is maintained.

Degradation of groundwater from constituents in recycled water after effective source control, treatment, and control may be determined consistent with maximum benefit to the people of the State, provided that the terms of the Basin Plan and Recycled Water Policy are met. Whether the degradation of groundwater consistent with the Basin Plan and Recycled Water Policy requirements is consistent with the maximum benefit to the people of the State is based on consideration of the four factors that are discussed in the following paragraphs (i through iv):

- i.** Past, present, and probable beneficial uses of the receiving water (as specified in the Basin Plan) have been considered. This Order establishes terms and conditions of discharge to ensure that the discharge does not unreasonably affect present and anticipated beneficial uses of groundwater and surface water. These terms and conditions include use of BPTC, which is a combination of treatment, storage, and application methods that implement the requirements of the Uniform Statewide Recycling Criteria and the Basin Plan, including, but not limited to:
 - (a)** Recycled water will be treated to achieve nitrogen control and disinfected, secondary level recycled water. Filtration of the recycled water provides advanced secondary recycled water;
 - (b)** Recycled water will be stored in properly lined ponds;
 - (c)** Recycled water will be applied at or below agronomic rates reflecting the hydraulic and nutrient requirements of the use area;
 - (d)** The Permittee is responsible for ensuring that recycled water meets the quality standards and associated waste discharge requirements of this Order;
 - (e)** The Permittee must identify and implement BMPs to prevent and minimize the potential for surface runoff or percolation of irrigation water, and to limit public contact with recycled water; and
 - (f)** Discharges to surface waters, other than those authorized in this Order, are prohibited.
- ii.** Economic and social costs, tangible and intangible, of the recycled water usage compared to the benefits have been considered as follows:
 - (a)** The use of recycled water for irrigation could potentially result in degradation of groundwater or risks to public health if the recycled water is mismanaged. These environmental/social risks are offset through high quality treatment as described in i.(a), above and the Permittee's commitment to implementing BMPs to ensure protection of groundwater and public health.
 - (b)** The use of recycled water reduces the potential diversion of water from Francis Creek and the Salt River, thus reducing the potential for dewatering these waterbodies.

3. 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 BOD₅ and TSS. Restrictions on these pollutants are discussed in section IV.B of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations for pH, total coliform bacteria, settleable solids, ammonia, total nitrogen, and 2,3,7,8-TCDD that are more stringent than the minimum federal technology-based requirements but are necessary to meet water quality standards. These requirements are discussed in section IV.C.3 of the Fact Sheet.

WQBELs have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. Most beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by U.S. EPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to U.S. EPA prior to May 30, 2000, but not approved by U.S. EPA before that date, are nonetheless "*applicable water quality standards for purposes of the CWA*" pursuant to 40 C.F.R. section 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

E. Interim Effluent Limitations – Not Applicable

This Order does not establish interim effluent limitations or schedules for compliance with final limitations.

F. Land Discharge Specifications and Requirements – Not Applicable

This Order does not authorize discharges to land.

G. Water Recycling Specifications and Requirements

The Permittee has a recycled water system to irrigate neighboring agricultural land from May 15 through September 30.

1. Scope and Authority

Section 13263 of the Water Code requires the Regional Water Board to prescribe requirements for proposed discharges, existing discharges, or material changes in an existing discharge based upon the conditions of the disposal area or receiving waters upon or into which the discharge is made or proposed. The prescribed requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Water Code section 13241. In prescribing requirements, the Regional Water Board is not obligated to authorize the full waste assimilation capacities of the receiving water.

Water Code section 13241 requires the Regional Water Board to establish water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and prevention of nuisance, recognizing that it may be possible

for the quality of water to be changed to some degree without unreasonably affecting beneficial uses. The Basin Plan establishes water quality objectives specific to the North Coast Region for the protection of past, present, and probable future beneficial uses of water. Factors required for consideration during development of applicable water quality objectives, such as the characteristics of the hydrographic unit under consideration, economic considerations, and other factors required in accordance with section 13241 were considered during the Basin Planning and adoption process.

Here, the Regional Water Board considered all of these factors when developing the WDRs for the recycled water discharge. Limitations for BOD₅ and TSS were scientifically derived to implement water quality objectives that protect beneficial uses. Both beneficial uses and the water quality objectives have been approved pursuant to state law. In addition, discharge prohibitions were included to prohibit the discharge or recycling use of untreated or partially treated waste, in order to protect public health and prevent nuisance.

The Regional Water Board considered the factors set forth in Water Code section 13241, including the consideration of past, present, and probable future beneficial uses of the receiving water, which the Regional Water Board anticipates to be the same as set forth in the Basin Plan. The Regional Water Board considered the environmental characteristics, including water quality of the Ferndale Hydrologic Subarea of the Eel River Hydrologic Unit, the coordinated control of all factors that affect water quality in the area, and the need to develop and use recycled water, which this Order supports. The Permittee did not submit any evidence regarding whether the WDRs for recycled water discharges would interfere with the development of needed housing within the region or the cost of compliance, particularly anything to show that the cost of compliance with the order would be unmanageable.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

- a. Beneficial Uses.** Beneficial use designations for groundwater established in the Basin Plan include municipal and domestic supply (MUN), industrial service supply (IND), industrial process supply (PRO), agricultural supply (AGR), freshwater replenishment to surface waters (FRSH), native American culture (CUL), and aquaculture (AQUA).
- b. Basin Plan Water Quality Objectives.** The Basin Plan contains narrative objectives for taste and odor, bacteria, radioactivity, toxicity, and chemical constituents (including those chemicals that adversely affect agricultural water supply) that apply to groundwater.

3. Determining the Need for Requirements for Water Recycling

- a.** The Recycled Water Specifications are established in this Order to conform to requirements contained in title 22, division 4, chapter 3 of the CCR for the recycling use of disinfected secondary-23 effluent. The Permittee is required to comply with applicable state and local requirements regarding the production and use of recycled wastewater, including requirements of Water Code sections 13500 – 13577 (Water Reuse) and DDW regulations at title 22, sections 60301 – 60357 of the CCR (Water Recycling Criteria). Section IV.C of this Order contains water recycling specifications and requirements to ensure that recycled water is used in a manner that is protective of groundwater and surface water quality. The requirement to comply with title 22 requirements is retained from Order No. R1-2012-0097.

- b. BOD₅ and TSS.** Consistent with Order No. R1-2012-0097, this Order includes recycled water specifications for BOD₅ and TSS that consist of an AMEL of 30 mg/L. These levels are technically achievable based on the capability of the secondary treatment system. These specifications are included in the Order to ensure discharges to the recycled water system receive proper treatment.
- c. Settleable Solids.** Consistent with Order No. R1-2012-0097, the Order includes recycled water specifications for settleable solids that consist of a monthly average effluent limitation of 0.1 ml/L and a maximum daily effluent limitation of 0.2 ml/L. These limitations reflect levels of treatment attainable by secondary treatment facilities.
- d. Coliform Bacteria.** Consistent with Order No. R1-2012-0097, this Order includes recycled water specifications for total coliform bacteria that reflect standards for secondary treated recycled water in the Basin Plan (Section 4, Implementation Plans) and as adopted by the DDW in title 22 of the CCR and are included to ensure that recycled water quality is protective of human health. The specific limitations are those levels of bacteria required for the reclamation use of treated wastewater for surface irrigation of (i) pasture used for animals producing milk for human consumption and (ii) any nonedible vegetation where access is controlled.

H. Other Requirements

- a. Filtration Process Requirements.** This Order contains newly established effluent limitations for the filtration system in section IV.D.1 of the Order. These requirements are needed so that the turbidity of the filtered water is low enough to ensure that effective disinfection occurs in the ultraviolet light (UV) disinfection system. The turbidity specifications in section IV.D.1 of the Order are based on the design criteria for the disc filter that is used for filtration.
- b. Disinfection Process Requirements for Ultraviolet Light (UV) Disinfection System.** This Order contains monitoring requirements for the UV disinfection system in section IV.D.2. These requirements are needed to determine compliance with requirements for recycled wastewater systems, established in title 22, division 4, chapter 3 of the CCR, and to ensure that the disinfection process achieves effective pathogen reduction.

UV system operation requirements are necessary to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses, bacteria) in the wastewater. Since the Permittee is only required to meet secondary treatment, the primary disinfection requirement is to meet the secondary disinfection limit of 23 MPN/100 mL. The Permittee is not required to meet title 22 virus removal/inactivation requirements. UV dosage is dependent on several factors such as UV transmittance, UV power setting, and wastewater flow through the UV system.

The UV operating specifications in this Order have been modified in relation to the previous permit. The UV disinfection operating specifications in the previous permit were based on the UV guidelines for tertiary-2.2 recycled water developed by the National Water Research Institute (NWRI) and American Water Works Association Research Foundation (AWWRF) titled, "Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse" (NWRI guidelines). Since the Permittee produces secondary-

23 recycled water for pasture irrigation and discharge, it is unnecessary to hold the Permittee to tertiary-2.2 UV disinfection operating specification. The most significant changes to the UV disinfection operating specifications include (1) removal of a requirement that the Permittee demonstrate inactivation/removal of viruses; (2) the requirement for UV dose has been modified to allow the Permittee to establish a dose that will ensure that the total coliform requirements in sections IV.A1.c and IV.C.2.b of the Order are consistently met. The Permittee is currently conducting a site-specific UV engineering study in order to identify the site-specific UV operating specifications that will achieve the total coliform requirements for discharges to surface water and for recycled water use; and (3) the requirement to check the on-line UVT meter against a benchtop UVT meter has been replaced with a requirement to ensure reliable operation, performance, and calibration of the on-line UVT meter.

Furthermore, a Memorandum dated November 1, 2004 issued by DDW to Regional Water Board Executive Officers recommended that provisions be included in permits for water recycling treatment plants employing UV disinfection requiring permittees to establish fixed cleaning frequency of quartz sleeves as well as include provisions that specify minimum delivered UV dose that must be maintained (as recommended by the NWRI/AWWARF UV Disinfection Guidelines). Minimum UV dosage requirements specified in section IV.D.1 of the Order ensures that adequate disinfection of wastewater will be achieved.

- c. **Storage Ponds.** Storage pond requirements are included in section IV.D.2 of the Order to ensure that future storage ponds are constructed in a manner that protects groundwater and complies with requirements of title 27 of the CCR.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

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 Regional 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 Regional [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 Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives for biostimulatory substances, bacteria, 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.

The dissolved oxygen limitation in this Order reflects the new Basin Plan dissolved oxygen limit that was adopted by the Regional Water Board on June 18, 2015, and effective beginning April 24, 2017, after receiving approval from U.S. EPA. The new Basin Plan dissolved oxygen limitation specifies limits for the WARM, COLD, and SPWN beneficial uses. The COLD and SPWN beneficial uses occur in the Salt River and its tributaries. This Order includes only the SPWN limitations because it is the most restrictive and protective limit and the SPWN beneficial use is present throughout the entire discharge season.

Receiving water limits for TDS and SC that were included in the previous Order have been removed from this Order because these limits were inappropriately applied using the tributary rule. The TDS and SC limits in the previous Order were based on TDS and SC limits prescribed in the Basin Plan for the Eel River that are applicable to non-saline waters. Table 3-1 of the Basin Plan includes a footnote stating that TDS and SC water quality objectives do not apply to estuarine areas. Various sources document that the Salt River is part of the Eel River Delta and Estuary, including the July 2010 California Coastal Watershed Planning and Assessment Program report titled *Salt River Basin Assessment* (prepared through a cooperative effort by the California Department of Fish and Game and Pacific States Marine Fisheries Commission), the Salt River Basin is part of the Eel River Delta and Estuary.

In addition, receiving water data collected by the Permittee during the term of the previous Order demonstrate that the background water quality in the Salt River does not meet the water quality objectives that apply to non-saline waters. A comparison of upstream and downstream receiving water data collected by the Permittee is inconclusive in regard to whether or not the discharge is causing degradation (increases in TDS and/or SC), therefore, this Order continues to require upstream and downstream receiving water monitoring as well as effluent monitoring for TDS and SC in order to assess whether or not the Permittee's discharge is adversely impacting water quality in the Salt River. If the Permittee wishes, this data may also be used, in conjunction with other scientifically verifiable information, to demonstrate that other factors influence the TDS and SC concentrations in the vicinity of the Permittee's discharge, such as tidal influence

B. Groundwater

Groundwater limitations are included in the Order to protect the beneficial uses of the underlying groundwater. The beneficial uses of the underlying groundwater are MUN, IND, PRO, AGR, and FRSH. Discharges from the Facility shall not cause exceedance of applicable water quality objectives or create adverse impacts to beneficial uses of groundwater. Groundwater data must be evaluated using appropriate statistical tools to determine when groundwater degradation is occurring.

Groundwater limitations in this Order have been retained from the previous Order with minor modifications to reflect revised sections of title 22. The Order includes a new groundwater toxicity limitation that was adopted by the Regional Water Board on June 18, 2015, and effective beginning July 18, 2016 after receiving approval from the California Office of Administrative Law. This new Basin Plan limit requires that groundwaters shall not contain toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in humans, or that adversely affects beneficial uses. This limitation applies regardless of whether the toxicity is caused by a single substance or the synergistic effect of multiple substances.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. Federal Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment D to the Order. The Permittee must comply with all standard provisions and with those additional conditions that are applicable under 40 C.F.R. section 122.42. The rationale for the special conditions contained in the Order is provided in section VI.B, below.

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

2. Regional Water Board Standard Provisions

In addition to the Federal Standard Provisions (Attachment D), the Permittee shall comply with the Regional Water Board Standard Provisions provided in Standard Provisions VI.A.2 of the Order.

- a. Order Provision VI.A.2.a identifies the state's enforcement authority under the Water Code, which is more stringent than the enforcement authority specified in the federal regulations (e.g., 40 C.F.R. sections 122.41(j)(5) and (k)(2)).
- b. Order Provision VI.A.2.b requires the Permittee to notify Regional Water Board staff, orally and in writing, in the event that the Permittee does not comply or will be unable to comply with any Order requirement. This provision requires the Permittee to make direct contact with a Regional Water Board staff person.

B. Special Provisions

1. Reopener Provisions

- a. **Standard Revisions (Special Provision VI.C.1.a).** Conditions that necessitate a major modification of a permit are described in 40 C.F.R. section 122.62, which include the following:
 - i. When standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision. Therefore, if revisions of applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such revised 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. **Reasonable Potential (Special Provision VI.C.1.b).** This provision allows the Regional Water Board to modify, or revoke and reissue, this Order if present or future investigations demonstrate that the Permittee governed by this Permit is causing or contributing to excursions above any applicable priority pollutant criterion or objective, or adversely impacting water quality and/or the beneficial uses of receiving waters.
- c. **Whole Effluent Toxicity (Special Provision VI.C.1.c).** This Order requires the Permittee to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a TRE. This Order may be reopened to include a

numeric chronic toxicity limitation, new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE.

- d. 303(d)-Listed Pollutants (Special Provision VI.C.1.d).** This provision allows the Regional Water Board to reopen this Order to modify existing effluent limitations or add effluent limitations for pollutants that are the subject of any future TMDL action.
 - e. Water Effects Ratios (WERs) and Metal Translators (Special Provision VI.C.1.e).** This provision allows the Regional Water Board to reopen this Order if future studies undertaken by the Permittee provide new information and justification for applying a WER or metal translator to a water quality objective for one or more priority pollutants.
 - f. Nutrients (Special Provision VI.C.1.f).** This Order contains effluent limitations for ammonia and total nitrogen and effluent monitoring for nutrients (ammonia, nitrate, nitrite, organic nitrogen, total nitrogen, and phosphorus). This provision allows the Regional Water Board to reopen this Order if future monitoring data indicates the need for new or revised effluent limitations for any of these parameters.
 - g. Salt and Nutrient Management Plans (SNMPs) (Special Provision VI.C.1.g).** This provision allows the Regional Water Board to reopen this Order if needed to incorporate provisions consistent with regional or subregional SNMP(s) adopted by the Regional Water Board or any amendments to the Recycled Water Policy that are applicable to the Permittee.
 - h. Title 22 Engineering Report (Special Provision VI.C.1.h).** This provision allows the Regional Water Board to reopen this Order to adequately implement title 22, if future modifications to the Permittee's title 22 engineering report occur.
- 2. Special Studies and Additional Monitoring Requirements**
- a. Ammonia Study (Special Provision VI.C.2.a).** The 2013 Freshwater Criteria for ammonia vary based on pH and temperature, and reflect the latest scientific knowledge on the toxicity of ammonia to freshwater aquatic life, including new data on sensitive freshwater mussels and gill-breathing snails. Under most conditions, the 2013 Freshwater Criteria are more stringent than the 1999 Freshwater Criteria when mussels are present in the receiving water. Adequate information is not available to determine if these freshwater mussels are present in the receiving water. The 2013 Freshwater Criteria document states, *"In the case of ammonia, where a state demonstrates that mussels are not present on a site-specific basis, the recalculation procedure may be used to remove the mussel species from the national criteria dataset to better represent the species present at the site."* The 2013 Freshwater Criteria document contains recalculation procedures for situations where mussels are not present in the receiving water. This Order requires the Permittee to conduct a study to determine the presence of mussels in the receiving water. The Regional Water Board shall use the results of this study to inform the determination of ammonia effluent limitations, if necessary, during the next permit renewal.
- 3. Best Management Practices and Pollution Prevention**
- a. Pollutant Minimization Program (Special Provision VI.C.3.a).** This provision is included in this Order pursuant to section 2.4.5 of the SIP. The Regional Water Board

includes standard provisions in all NPDES permits requiring development of a Pollutant Minimization Program when there is evidence that a toxic pollutant is present in the effluent at a concentration greater than an applicable effluent limitation.

4. Construction, Operation, and Maintenance Specifications

- a. Operation and Maintenance (Special Provisions VI.C.4.a and b).** 40 C.F.R. section 122.41(e) requires proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions. An up-to-date operation and maintenance manual, as required by Provision VI.C.4.b of this Order, is an integral part of a well-operated and maintained facility.
- b. Septage Handling Requirements (Special Provisions VI.C.4.c).** The Permittee currently accepts and treats septage at the Facility. Domestic septage is defined as the liquid or solid material removed from a septic tank, cesspool, portable toilet, type III marine sanitation device, recreational vehicle's sanitation tank, or similar storage or treatment works that receives only domestic septage. Septage is characterized by high organic strength, high solids content, high odor potential, high vector attraction potential, and high potential to pollute groundwater. Septage may be 6 to 80 times more concentrated than typical municipal wastewater and may also contain heavy metals and illicitly dumped hazardous materials. Septage has the potential to upset plant treatment operations or process performance or both if the plant is not designed to handle septage. Some of the impacts of septage addition to facilities include: potential toxic shock to biological processes; increased odor emissions; increased volume of grit, scum, screenings, and sludge; increased organic loading to biological processes; and increased housekeeping requirements. This Order requires the Permittee to submit a septage management plan and manage septage accepted at the Facility in a manner that ensures that pollutants associated with domestic septage do not pass through or interfere with the operation or performance of the Facility.

5. Special Provisions for Municipal Facilities (POTWs Only)

- a. Wastewater Collection Systems (Special Provision VI.C.5.a)**
 - i. Statewide General WDRs for Sanitary Sewer Systems.** On May 2, 2006, the State Water Board adopted General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order). The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all SSOs, among other requirements and prohibitions.

On February 20, 2008, the State Water Board adopted Order No. WQ 2008-0002-EXEC Adopting Amended Monitoring and Reporting Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, to ensure adequate and timely notifications are made to the Regional Water Board and appropriate local, state, and federal authorities in case of sewage spills. On August 6, 2013, the State Water Board adopted Order No. WQ 2013-0058-EXEC Amending Monitoring and Reporting Program for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order No. WQ 2013-0058-

EXEC addressing compliance and enforceability of the Monitoring and Reporting Program and superseding the amendments in Order No. WQ-2008-0002-EXEC. Notification and reporting of SSOs is conducted in accordance with the requirements of Order Nos. 2006-0003-DWQ and WQ 2013-0058-EXEC, and any revisions thereto for operation of its wastewater collection system.

b. Source Control and Pretreatment Provisions (Special Provision VI.C.5.b).

Pursuant to Special Provision VI.C.5.b.i, the Permittee shall implement the necessary legal authorities to monitor and enforce source control standards, restrict discharges of toxic materials to the collection system, and inspect facilities connected to the system.

40 C.F.R. section 403.8(a) requires POTWs with a total design flow greater than 5 mgd and receiving pollutants which pass through or interfere with the operation of the POTW to establish a POTW Pretreatment Program. The Regional Water Board may also require that a POTW with a design flow of 5 mgd or less develop a POTW Pretreatment Program if the nature or volume of the industrial influent, treatment process upsets, violations of POTW effluent limitations, contamination of municipal sludge, or other circumstances warrant in order to prevent interference or pass through. The Permittee did not report any known industrial wastes subject to regulation under the NPDES Pretreatment Program being discharged to the Facility in Part F of EPA Application Form 2A and the permitted flow of the Facility is less than 5 mgd; therefore, the Order does not require the Permittee to develop a pretreatment program that conforms to federal regulations. However, in order to prevent interference with the POTW or pass through of pollutants to the receiving water, the Order requires the Permittee to implement a source control program.

Water Code section 13263.3(d)(1) allows the Regional Water Board to require a discharger to complete and implement a pollution prevention plan if pollution prevention is necessary to achieve a water quality objective. Pursuant to Water Code section 13263.3(d)(3), a pollution prevention analysis should contain an analysis of the methods that could be used to prevent the discharge of the pollutants into the POTW. These methods can include application of local limits to industrial or commercial dischargers, pollution prevention techniques, public education and outreach, or other innovative and alternative approaches to reduce discharges of pollutants to the POTW. The analysis also shall identify sources, or potential sources, not within the ability or authority of the POTW to control, such as pollutants in the potable water supply, airborne pollutants, pharmaceuticals, or pesticides, and estimate the magnitude of those sources, to the extent feasible. This Order includes requirements for the Permittee to implement a source identification and reduction program.

A key component of an effective source control program is the identification and location of possible industrial users within the POTW's wastewater collection system. This information is typically obtained by the POTW through industrial waste surveys. The following types of resources can be consulted in compiling a master list of industrial users:

- i.** Water and sewer billing records
- ii.** Applications for sewer service
- iii.** Local telephone directories

- iv. Chamber of Commerce and local business directories
- v. Business license records
- vi. POTW and wastewater collection personnel and field observations
- vii. Business associations
- viii. The internet
- ix. Industrial and non-residential sewer use permit records

In addition, the Regional Water Board recognizes that some form of source control is prudent to ensure the efficient operation of the Facility, the safety of Facility staff, and to ensure that pollutants do not pass through the treatment Facility to impair the beneficial uses of the receiving water. The proposed Order includes prohibitions for the discharge of pollutants that may interfere, pass through, or be incompatible with treatment operations, interfere with the use of disposal of sludge, or pose a health hazard to personnel.

- c. **Sludge Disposal and Handling Requirements (Special Provision VI.C.5.c).** The disposal or reuse of wastewater treatment screenings, sludges, or other solids removed from the liquid waste stream is regulated by 40 C.F.R. parts 257, 258, 501, and 503, and the State Water Board promulgated provisions of title 27 of the CCR.
- d. **Biosolids Management (Special Provision VI.C.5.d).** This provision requires the Permittee to comply with the State's regulations relating to the discharge of biosolids to land. The discharge of biosolids through land application is not regulated under this Order. For the land application of biosolids as a soil amendment to areas outside the California Coastal Zone, as defined in and mapped pursuant to Public Resources Code section 30103, The Permittee is required to obtain coverage under the State Water Board Order No. 2004-0012-DWQ, General Waste Discharge Requirements for the Discharge of Biosolids to Land as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities (General Order). Coverage under the General Order, as opposed to coverage under this NPDES permit or individual WDRs, implements a consistent statewide approach to regulating this waste discharge. For the land application of biosolids as a soil amendment in the California Coastal Zone, as defined in and mapped pursuant to Public Resources Code section 30103, the Permittee shall submit a report of waste discharge.
- e. **Operator Certification (Special Provision VI.C.5.e).** This provision requires the Facility to be operated by supervisors and operators who are certified as required by title 23, section 3680 of the CCR.
- f. **Adequate Capacity (Special Provision VI.C.5.f).** The goal of this provision is to ensure appropriate and timely planning by the Permittee to ensure adequate capacity for the protection of public health and water quality.

6. Other Special Provisions

- a. **Storm Water (Special Provision VI.C.6.a).** This provision requires the Permittee, if applicable, to obtain coverage under the State Water Board's Water Quality Order No. 2014-0057-DWQ, NPDES General Permit No. CAS000001, for Discharges of Storm Water Discharges Associated with Industrial Activities (or subsequent renewed

versions of the NPDES General Permit CAS000001). Currently, the Facility is exempted from these requirements based on the size of the Facility (less than 1 mgd).

7. Compliance Schedules – Not Applicable

This Order does not establish interim effluent limitations or schedules of compliance for final numeric effluent limitations.

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 of 40 C.F.R. requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code section 13383 authorizes the Regional Water Board to require technical and monitoring reports. The MRP, Attachment E, establishes monitoring and reporting requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Facility.

A. Influent Monitoring

1. Influent monitoring requirements at Monitoring Location INF-001 for BOD₅ and TSS have been reduced from weekly to monthly based on influent BOD₅ and TSS remaining relatively consistent throughout the term of Order No. R1-2012-0097. Influent monitoring requirements for BOD₅ and TSS are necessary to determine compliance with the Order's 85 percent removal requirement for these parameters.
2. Influent monitoring requirements for flow at Monitoring Location INF-001 are retained from Order No. R1-2012-0097.

B. Effluent Monitoring

1. Effluent monitoring requirements are necessary to determine compliance with prohibitions and/or effluent limitations established by the Order. Monitoring at Monitoring Location EFF-001 is necessary to demonstrate compliance with effluent limitations and demonstrate whether the discharge poses reasonable potential for a pollutant to exceed any numeric or narrative water quality objectives.
 - a. Effluent monitoring frequencies for flow, BOD₅, TSS, pH, temperature, settleable solids, total coliform bacteria, ammonia, nitrate, phosphorus, and total dissolved solids have been retained from Order No. R1-2012-0097. The sample type for BOD₅, TSS, and settleable solids has been changed from 8-hour composite to 24-hour composite, while the sample types for the remaining parameters have been retained from the previous Order.
 - b. Effluent monitoring frequency for total nitrogen has been retained from Order No. R1-2012-0097, but the sample type has been changed from a grab to calculated, as there is no method for analyzing total nitrogen, so it must be calculated using the sum of the concentrations of nitrate nitrogen, nitrite nitrogen, total organic nitrogen, and ammonia.
 - c. Monitoring requirements for nitrite and total organic nitrogen have been established, in order to calculate total nitrogen concentration and assess compliance with the effluent limitation.

- d. New effluent monitoring requirements have been added for total dissolved solids and specific conductance in order to assess whether or not the discharge is impacting salt concentrations in the Salt River.
- e. This Order includes a prohibition of discharges that exceed the flow of Francis Creek. Therefore, this Order requires the Permittee to calculate and report the dilution rate to determine compliance with the prohibition.
- f. Monitoring data collected over the term of Order No. R1-2012-0097 indicates that the discharge exhibits reasonable potential to cause or contribute to an exceedance of water quality criteria for 2,3,7,8-TCDD; however, there was only one estimated result for 2,3,7,8-TCDD during the term of Order No. R1-2012-0097, and there are no known sources of 2,3,7,8-TCDD to the Facility. Therefore, this Order maintains monitoring requirements for 2,3,7,8-TCDD, but reduces the frequency of monitoring from semiannually to three times per permit term, which should be sufficient to assess compliance with the effluent limitation. The data must be collected during a period of discharge and in time to submit the data with the Report of Waste Discharge, therefore, Table Note 7 in Table E-3 of the MRP specifies that this monitoring must be completed during the first three calendar years following the permit effective date.
- g. This Order reduces the monitoring frequency for CTR priority pollutants from twice per permit term to once per permit term. The Regional Water Board finds that this frequency will provide sufficient information to characterize the discharge. The sample type for CTR Priority Pollutants has also been changed from grab to 24-hour composite, with the exception of those priority pollutants that are volatile. The CTR Priority Pollutant data must be collected during a period of discharge and in time to submit the data with the Report of Waste Discharge, therefore, Table Note 10 in Table E-3 of the MRP specifies that this monitoring must be completed by **April 15, 2023**.
- h. The monitoring frequency for acute and chronic toxicity has been reduced from semiannually to annually. For acute toxicity all monitoring data during the term of Order No. R1-2012-0097 showed 100 percent survival. For chronic toxicity, all monitoring data for the last four years has met the chronic toxicity trigger of 1 TUc.
- i. Monitoring requirements for mercury, Alpha-BHC, and Heptachlor Epoxide have been removed because monitoring data during the previous permit term demonstrated no reasonable potential for these parameters.

C. Whole Effluent Toxicity Testing Requirements

Whole effluent toxicity (WET) monitoring requirements are retained from Order No. R1-2012-0097 with modifications to evaluate and report chronic toxicity using TST methods (see section IV.C.5 of this Fact Sheet). The WET requirements are included in this Order to determine compliance with effluent limitations and thereby protect the receiving water quality from the aggregate effect of a mixture of pollutants in the effluent. Acute toxicity testing measures mortality in 100 percent effluent over a short test period and chronic toxicity testing is conducted over a longer time period and may measure mortality, reproduction, and/or growth.

In addition to routine toxicity monitoring, this Order requires the Permittee to maintain and update their TRE Work Plan, as necessary, in accordance with appropriate U.S. EPA guidance to ensure that the Permittee has a plan to immediately move forward with the initial tiers of a TRE in the event effluent toxicity is encountered in the future. The TRE is initiated by evidence of a

pattern of toxicity demonstrated through the additional effluent monitoring provided as a result of an accelerated monitoring program.

D. Recycling Monitoring Requirements

1. This Order requires the Permittee to comply with applicable state and local requirements regarding the production and use of recycled water.
2. Recycled water requirements at Monitoring Location EFF-002 for flow, BOD₅, TSS, settleable solids, total coliform bacteria, ammonia, nitrate, and total dissolved solids have been retained from Order No. R1-2012-0097, but the monitoring type has been changed from 8-hour to 24-hour composite for BOD₅, TSS, and settleable solids. Phosphorus monitoring requirements have been removed as they are not necessary for recycled water.
3. This Order establishes monitoring requirements for nitrite and total organic nitrogen, in order to calculate total nitrogen concentration for agronomic rate calculations.
4. This Order establishes recycled water use area monitoring to ensure application of recycled water at agronomic rates.
5. This Order establishes recycled water production and use requirements in Table E-5 to match requirements in the State Water Board Order WQ 2016-0068-DDW, Water Reclamation Requirements for Recycled Water Use.

E. Receiving Water Monitoring

1. Surface Water

- a. Receiving water monitoring is required to demonstrate compliance with the Receiving Water Limitations.
- b. As described in section II.B of this Fact Sheet, the configuration of Francis Creek in the vicinity of the discharge was modified over the term of Order No. R1-2012-0097 as a result of the Salt River Restoration Project. Therefore, this Order has updated the monitoring locations. With the exception of flow monitoring, this Order eliminates receiving water monitoring requirements in Francis Creek at Monitoring Locations R-001 and R-002 and in the Salt River at R-003. This Order establishes a new upstream monitoring location in the Salt River downstream of the outlet from the Francis Creek sedimentation management area and upstream of the confluence with the Francis Creek natural drainage channel at Monitoring Location RSW-002. A new downstream monitoring location, RSW-003, has been established in the Salt River at a location within 50 feet downstream of the confluence of the natural drainage channel with the Salt River.
- c. This Order retains flow monitoring in Francis Creek at the Van Ness Avenue bridge at Monitoring Location RSW-001 (formerly Monitoring Location R-001).
- d. Upstream monitoring requirements for pH, temperature, turbidity, dissolved oxygen, specific conductance, visual observations, and priority pollutants have been retained from Order No. R1-2012-0097 and established at Monitoring Location RSW-002.
- e. The monitoring frequency for CTR priority pollutants has been reduced from twice per permit term to one time per permit term. In addition, the once per permit term CTR priority pollutant monitoring at the upstream monitoring location must be performed

during a period of discharge and in time to submit the data with the Report of Waste Discharge, therefore, Table Note 4 in Table E-7 of the MRP specifies that this monitoring must be completed by **April 15, 2023**.

- f. This Order establishes monthly monitoring for hardness at Monitoring Location RSW-002 in order to calculate the criteria for metals that vary with hardness.
- g. This Order establishes monthly monitoring for total dissolved solids at Monitoring Locations RSW-002 and RSW-003 in order to assess the impact of the discharge on the receiving water.
- h. Monitoring Requirements for pH, temperature, dissolved oxygen, specific conductance, and visual observations at Monitoring Location RSW-003 (formerly R-003) have been retained from Order No. R1-2012-0097.
- i. The monitoring frequency for dissolved oxygen, pH, and temperature at Monitoring Locations RSW-002 and RSW-003 has been increased to weekly in order to gather enough data to properly assess compliance with receiving water limitations in section V.A of the Order and with the conditions for the 1:1 dilution rate.
- j. This Order establishes monthly monitoring for turbidity at Monitoring Location RSW-003 in order to assess compliance with the receiving water limitation for turbidity and assess the impact of the discharge on the receiving water.

2. Groundwater

This Order does not include groundwater monitoring requirements.

F. Other Monitoring Requirements

- 3. **Rainfall.** Rainfall monitoring and reporting is retained from Order No. R1-2012-0097 and is necessary to compare surface water flow and recycled water application rates.
- 4. **Filtration Process Monitoring (Monitoring Location INT-001).** Filtration process monitoring requirements at Monitoring Location INT-001 are included to assess compliance with filtration specifications in section IV.D.1.a of the Order which are based on filtration turbidity requirements in title 22 to ensure that effluent turbidity is low enough to ensure that the UV disinfection system provides proper disinfection and compliance with total coliform effluent limitations in section IV.A.1.c of the Order.
- 5. **Disinfection Process Monitoring for UV Disinfection System (Monitoring Location INT-002).** UV disinfection system monitoring requirements at Monitoring Location INT-002 are included to assess compliance with UV disinfection specifications in section IV.D.2 of the Order.
- 6. **Visual Monitoring.** Visual monitoring requirements for the upstream and downstream receiving water (Monitoring Locations RSW-001 and RSW-002) are retained from Order No. R1-2012-0097 and visual monitoring requirements for the effluent (Monitoring Location EFF-001) have been added. These monitoring requirements are necessary to ensure compliance with receiving water limitations in section V of the Order.
- 7. **Sludge Monitoring.** New sludge monitoring requirements at Monitoring Location BIO-001 serve as a basis for the Permittee to develop the sludge Handling and Disposal report that is required as part of the Annual Report pursuant to section X.D.3.g of the MRP.

- 8. Septage Station Monitoring.** The Permittee currently accepts and treats septage at the Facility. This Order requires the Permittee to monitor and septage loads for pH. If pH monitoring or other observations such as treatment plant upset or finding priority pollutants in the effluent indicate that septage is causing problems at the Facility, the MRP may be revised to include expanded monitoring to characterize discharges of septage into the treatment system and to ensure that pollutants associated with domestic septage do not pass through or interfere with the operation or performance of the Facility.
- 9. Discharge Monitoring Report Quality Assurance (DMR-QA) Study Program.** Under the authority of section 308 of the CWA (33 U.S.C. § 1318), U.S. EPA requires major and select minor permittees under the NPDES Program to participate in the annual DMR-QA Study Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Permittee can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or (2) Per the waiver issued by U.S. EPA to the State Water Board, the Permittee can submit the results of the most recent Water Pollution Performance Evaluation Study from its own laboratories or its contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory's ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program. The Permittee shall ensure that the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to U.S. EPA's DMR-QA Coordinator and Quality Assurance Manager.
- 10. Accelerated Monitoring Requirements.** Table E-3 includes accelerated monitoring requirements for parameters that are required to be monitored weekly, monthly, and three times per permit term.
- 11. Flow Monitoring.** Section I.D of the MRP requires proper installation, calibration, operation, and maintenance of flow metering devices.
- 12. Spill Notification.** The MRP that is part of this Order establishes requirements for reporting spills and unauthorized discharges, with the exception of SSOs which must be reported in accordance with the requirements of State Water Board Order No. 2006-0003-DWQ and WQ 2013-0058-EXEC.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the City of Ferndale. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board notified the Permittee and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the following posting on the Regional Water Board's Internet site at:

http://www.waterboards.ca.gov/northcoast/public_notices/public_hearings/npdes_permits_and_wdrs.shtml and through publication in the **Press Democrat and Eureka Times Standard** on **August 3, 2018**.

B. Written Comments

Interested persons were invited to submit written comments concerning these tentative WDRs as provided through the notification process. Comments were due to the Regional Water Board Executive Office electronically via e-mail to NorthCoast@waterboards.ca.gov or on disk (CD or DCD) in Portable Document Format (PDF) file in lieu of paper-sourced documents. The guidelines for electronic submittal of documents can be found on the Regional Water Board website at <http://www.waterboards.ca.gov/northcoast>.

To be fully responded to by staff and considered by the Regional Water Board, the written comments were due at the Regional Water Board office by 5:00 p.m. on **September 4, 2018**.

C. Public Hearing

The Regional Water Board held a public hearing on the draft WDRs during its regular Board meeting on the following date and time and at the following location:

Date: **November 14 or 15, 2018**
Time: 8:30 a.m.
Location: 5550 Skylane Boulevard, Suite A, Santa Rosa, California

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

Please be aware that dates and venues may change. Our Web address is <http://www.waterboards.ca.gov/northcoast> 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 Regional Water Board regarding the final WDRs. The petition must be received by the State Water Board at the following address within 30 calendar days of the Regional Water Board's action:

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

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

E. Information and Copying

The Report of Waste Discharge (ROWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address identified in section VIII.C, 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 Regional Water Board by calling (707) 576-2220.

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 Regional 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 Cathleen Goodwin at Cathleen.Goodwin@waterboards.ca.gov or (707)-576-2687.

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Attachment F-1 – City of Ferndale RPA Summary

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
Antimony	µg/L	=	0.17	=	0.285	6	--	--	14	--	6	No
Arsenic	µg/L	=	1.27	=	1.62	10	340	150	--	--	10	No
Beryllium	µg/L	<	0.29	<	0.29	4	--	--	--	--	4.0	No
Cadmium	µg/L	<	0.128	<	0.128	2.2	3.9	2.2	--	--	5.0	No
Chromium (III)	µg/L	=	0.522	=	5.49	190	1,500	190	--	--	--	No
Chromium (VI)	µg/L	<	4	<	5	11	16	11	--	--	50	No
Copper	µg/L	=	12	=	6.69	27	39	27	1,300	--	--	No
Lead	µg/L	=	0.137	=	0.785	2.7	68	2.7	--	--	--	No
Mercury	µg/L	<	0.008	=	0.015	0.05	--	--	0.050	--	2.0	No
Nickel	µg/L	=	19	=	14.5	46	420	46	610	--	100	No
Selenium	µg/L	=	0.673	<	0.132	5	--	5	--	--	50	No
Silver	µg/L	<	0.111	<	0.168	3.2	3.2	--	--	--	--	No
Thallium	µg/L	<	0.101	<	0.111	1.7	--	--	1.7	--	2	No
Zinc	µg/L	=	67	=	13.5	110	110	110	--	--	--	No
Cyanide	µg/L	<	1.2	<	0.479	5.2	22	5.2	700	--	150	No
Asbestos	MFL	<	5	<	1.2	7	--	--	7	--	7	No
2,3,7,8 TCDD	µg/L	=	3.5 x 10 ⁻⁷	<	5	1.3 x 10 ⁻⁸	--	--	1.3 x 10 ⁻⁸	--	3.0 x 10 ⁻⁵	Yes
Acrolein	µg/L	<	2	<	0.00001	320	--	--	320	780	--	No
Acrylonitrile	µg/L	<	2	<	2	0.059	--	--	0.059	--	--	No
Benzene	µg/L	<	1	<	2	1	--	--	1.2	--	1	No
Bromoform	µg/L	<	1	<	1	4.3	--	--	4.3	--	--	No
Carbon Tetrachloride	µg/L	<	1	<	1	0.25	--	--	0.25	--	0.5	No
Chlorobenzene	µg/L	<	1	<	1	70	--	--	680	--	70	No
Chlorodibromomethane	µg/L	<	0.1	<	1	0.4	--	--	0.401	--	--	No
Chloroethane	µg/L	<	1	<	1	No Criteria	--	--	--	--	--	Uo
2-Chloroethylvinyl ether	µg/L	<	5	<	1	No Criteria	--	--	--	--	--	Uo
Chloroform	µg/L	<	1	<	5	No Criteria	--	--	--	--	--	Uo
Dichlorobromomethane	µg/L	<	0.1	<	1	0.56	--	--	0.56	--	--	No
1,1-Dichloroethane	µg/L	<	1	<	1	5	--	--	--	--	5	No
1,2-Dichloroethane	µg/L	<	1	<	1	0.38	--	--	0.38	--	0.5	No
1,1-Dichloroethylene	µg/L	<	1	<	1	0.057	--	--	0.057	--	6	No
1,2-Dichloropropane	µg/L	<	1	<	1	0.52	--	--	0.52	--	5	No
1,3-Dichloropropylene	µg/L	<	2	<	1	0.5	--	--	10	--	0.5	No
Ethylbenzene	µg/L	<	1	<	1	300	--	--	3,100	--	300	No
Methyl Bromide	µg/L	<	2	<	1	48	--	--	48	--	--	No
Methyl Chloride	µg/L	<	2	<	2	No Criteria	--	--	--	--	--	Uo
Methylene Chloride	µg/L	<	2	<	2	4.7	--	--	4.7	--	5	No
1,1,2,2-Tetrachloroethane	µg/L	<	1	<	2	0.17	--	--	0.17	--	1	No
Tetrachloroethylene	µg/L	<	1	<	1	0.8	--	--	0.8	--	5	No
Toluene	µg/L	<	1	<	1	150	--	--	6,800	--	150	No

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
1,2-Trans-Dichloroethylene	µg/L	<	1	<	1	10	--	--	700	--	10	No
1,1,1-Trichloroethane	µg/L	<	1	<	1	200	--	--	--	--	200	No
1,1,2-Trichloroethane	µg/L	<	1	<	1	0.6	--	--	0.6	--	5	No
Trichloroethylene	µg/L	<	1	<	1	2.7	--	--	2.7	--	5	No
Vinyl Chloride	µg/L	<	1	<	1	0.5	--	--	2	--	0.5	No
2-Chlorophenol	µg/L	<	0.53	<	1	120	--	--	120	--	--	No
2,4-Dichlorophenol	µg/L	<	0.7	<	0.53	93	--	--	93	--	--	No
2,4-Dimethylphenol	µg/L	<	0.59	<	0.7	540	--	--	540	--	--	No
2-Methyl- 4,6-Dinitrophenol	µg/L	<	0.74	<	0.59	13	--	--	13	--	--	No
2,4-Dinitrophenol	µg/L	<	0.51	<	0.74	70	--	--	70	--	--	No
2-Nitrophenol	µg/L	<	0.5	<	0.51	No Criteria	--	--	--	--	--	Uo
4-Nitrophenol	µg/L	<	0.55	<	0.5	No Criteria	--	--	--	--	--	Uo
3-Methyl 4-Chlorophenol	µg/L	<	0.67	<	0.55	No Criteria	--	--	--	--	--	Uo
Pentachlorophenol	µg/L	<	0.97	<	0.67	0.28	4	3	0.28	--	1	No
Phenol	µg/L	<	0.5	<	0.97	21,000	--	--	21,000	--	--	No
2,4,6-Trichlorophenol	µg/L	<	0.71	<	0.5	2.1	--	--	2.1	--	--	No
Acenaphthene	µg/L	<	0.27	<	0.71	1,200	--	--	1,200	--	--	No
Acenaphthylene	µg/L	<	0.011	<	0.27	No Criteria	--	--	--	--	--	Uo
Anthracene	µg/L	<	0.029	<	0.011	9,600	--	--	9600	--	--	No
Benzidine	µg/L	<	0.5	<	0.029	0.00012	--	--	0.00012	--	--	No
Benzo(a)Anthracene	µg/L	<	0.023	<	0.5	0.0044	--	--	0.0044	--	--	No
Benzo(a)Pyrene	µg/L	<	0.03	<	0.023	0.0044	--	--	0.0044	--	0.2	No
Benzo(b)Fluoranthene	µg/L	<	0.03	<	0.03	0.0044	--	--	0.0044	--	--	No
Benzo(ghi)Perylene	µg/L	<	0.029	<	0.03	No Criteria	--	--	--	--	--	Uo
Benzo(k)Fluoranthene	µg/L	<	0.029	<	0.029	0.0044	--	--	0.0044	--	--	No
Bis(2-Chloroethoxy)Methane	µg/L	<	0.55	<	0.029	No Criteria	--	--	--	--	--	Uo
Bis(2-Chloroethyl)Ether	µg/L	<	0.5	<	0.55	0.031	--	--	0.031	--	--	No
Bis(2-Chloroisopropyl)Ether	µg/L	<	0.5	<	0.5	1,400	--	--	1,400	--	--	No
Bis(2-Ethylhexyl)Phthalate	µg/L	<	0.65	<	0.5	1.8	--	--	1.8	--	4	No
4-Bromophenyl Phenyl Ether	µg/L	<	0.5	<	0.65	No Criteria	--	--	--	--	--	Uo
Butylbenzyl Phthalate	µg/L	=	1.2	=	1.2	3,000	--	--	3,000	--	--	No
2-Chloronaphthalene	µg/L	<	0.5	<	1.2	1,700	--	--	1,700	--	--	No
4-Chlorophenyl Phenyl Ether	µg/L	<	0.5	<	0.5	No Criteria	--	--	--	--	--	Uo
Chrysene	µg/L	<	0.028	<	0.5	0.0044	--	--	0.0044	--	--	No
Dibenzo(a,h)Anthracene	µg/L	<	0.027	<	0.028	0.0044	--	--	0.0044	--	--	No
1,2-Dichlorobenzene	µg/L	<	1	<	0.027	600	--	--	2,700	--	600	No
1,3-Dichlorobenzene	µg/L	<	1	<	1	400	--	--	400	--	--	No
1,4-Dichlorobenzene	µg/L	<	1	<	1	5	--	--	400	--	5	No
3,3-Dichlorobenzidine	µg/L	<	0.5	<	1	0.04	--	--	0.04	--	--	No
Diethyl Phthalate	µg/L	<	0.54	<	0.5	23,000	--	--	23,000	--	--	No
Dimethyl Phthalate	µg/L	<	1.1	<	0.54	313,000	--	--	313,000	--	--	No

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
Di-n-Butyl Phthalate	µg/L	<	0.73	<	1.1	2,700	--	--	2,700	--	--	No
2,4-Dinitrotoluene	µg/L	<	0.59	<	0.73	0.11	--	--	0.11	--	--	No
2,6-Dinitrotoluene	µg/L	<	0.77	<	0.59	No Criteria	--	--	--	--	--	Uo
Di-n-Octyl Phthalate	µg/L	<	0.72	<	0.77	No Criteria	--	--	--	--	--	Uo
1,2-Diphenylhydrazine	µg/L	<	0.5	<	0.72	0.04	--	--	0.04	--	--	No
Fluoranthene	µg/L	<	0.033	<	0.5	300	--	--	300	--	--	No
Fluorene	µg/L	<	0.15	<	0.033	1,300	--	--	1,300	--	--	No
Hexachlorobenzene	µg/L	<	0.5	<	0.15	0.00075	--	--	0.00075	--	1	No
Hexachlorobutadiene	µg/L	--	--	<	0.5	0.44	--	--	0.44	--	--	No
Hexachlorocyclopentadiene	µg/L	<	0.5	<	0.5	50	--	--	240	--	50	No
Hexachloroethane	µg/L	<	0.5	<	0.5	1.9	--	--	1.9	--	--	No
Indeno(1,2,3-cd)Pyrene	µg/L	<	0.035	<	0.035	0.0044	--	--	0.0044	--	--	No
Isophorone	µg/L	<	0.55	<	0.55	8.4	--	--	8.4	--	--	No
Naphthalene	µg/L	<	0.018	<	0.018	No Criteria	--	--	--	--	--	Uo
Nitrobenzene	µg/L	<	0.52	<	0.52	17	--	--	17	--	--	No
N-Nitrosodimethylamine	µg/L	<	0.5	<	0.5	0.00069	--	--	0.00069	--	--	No
N-Nitrosodi-n-Propylamine	µg/L	<	0.5	<	0.5	0.005	--	--	0.005	--	--	No
N-Nitrosodiphenylamine	µg/L	<	0.71	<	0.71	5	--	--	5	--	--	No
Phenanthrene	µg/L	<	0.012	<	0.012	No Criteria	--	--	--	--	--	Uo
Pyrene	µg/L	<	0.04	<	0.04	960	--	--	960	--	--	No
1,2,4-Trichlorobenzene	µg/L	--	--	--	--	5	--	--	--	--	5	Ud
Aldrin	µg/L	<	0.0016	<	0.0016	0.00013	3	--	0.00013	--	--	No
alpha-BHC	µg/L	<	0.0016	<	0.0016	0.0039	--	--	0.0039	--	--	No
beta-BHC	µg/L	<	0.0018	<	0.0018	0.014	--	--	0.014	--	--	No
gamma-BHC	µg/L	<	0.0014	<	0.0014	0.019	0.95	--	0.019	--	0.2	No
delta-BHC	µg/L	<	0.0014	<	0.0014	No Criteria	--	--	--	--	--	Uo
Chlordane	µg/L	<	0.034	<	0.034	0.00057	2.4	0.0043	0.00057	--	0.1	No
4,4'-DDT	µg/L	<	0.001	<	0.001	0.00059	1.1	0.001	0.00059	--	--	No
4,4'-DDE	µg/L	<	0.002	<	0.002	0.00059	--	--	0.00059	--	--	No
4,4'-DDD	µg/L	<	0.0099	<	0.0099	0.00083	--	--	0.00083	--	--	No
Dieldrin	µg/L	<	0.0018	<	0.0018	0.00014	0.24	0.056	0.00014	--	--	No
alpha-Endosulfan	µg/L	<	0.0017	<	0.0017	0.056	0.22	0.056	110	--	--	No
beta-Endosulfan	µg/L	<	0.00092	<	0.00092	0.056	0.22	0.056	110	--	--	No
Endosulfan Sulfate	µg/L	<	0.0023	<	0.0023	110	--	--	110	--	--	No
Endrin	µg/L	<	0.0019	<	0.0019	0.036	0.086	0.036	0.76	--	2	No
Endrin Aldehyde	µg/L	<	0.002	<	0.002	0.76	--	--	0.76	--	--	No
Heptachlor	µg/L	<	0.0018	<	0.0018	0.00021	0.52	0.0038	0.00021	--	0.01	No
Heptachlor Epoxide	µg/L	<	0.0015	<	0.0015	0.0001	0.52	0.0038	0.0001	--	0.01	No
PCBs sum	µg/L	<	0.5	<	0.5	0.00017	--	0.014	0.00017	--	0.5	No
Toxaphene	µg/L	<	0.052	<	0.052	0.0002	0.73	0.0002	0.00073	--	3	No
Ammonia Nitrogen, Total (as N)	mg/L	=	14	=	1.1	1.23	--	--	--	--	--	Yes

Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
Nitrate Nitrogen, Total (as N)	mg/L	=	5.8	=	4.3	10	--	--	--	--	10	No
Nitrite Nitrogen, Total (as N)	mg/L	<	0.02	--	--	1	--	--	--	--	1	No
Specific Conductance	µmhos/cm	=	373	=	663	900	--	--	--	--	900	No
Total Dissolved Solids	mg/L	=	370	=	540	500	--	--	--	--	500	No

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ATTACHMENT G - AMEL AND MDEL AMMONIA STANDARDS BASED ON THE 2013 FRESHWATER ACUTE CRITERIA

Table 1: pH and Temperature Dependent AMEL Ammonia Criteria

pH	Temp (°C)																	
	0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0	27.0	28.0	29.0	30.0
6.5	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
6.6	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
6.7	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
6.8	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
6.9	10	10	10	10	10	10	10	10	10	10	10	10	9.8	9.8	9.8	9.8	9.8	9.8
7.0	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
7.1	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3
7.2	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
7.3	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
7.4	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
7.5	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
7.6	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
7.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
7.8	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
7.9	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
8.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
8.1	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
8.2	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
8.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
8.4	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
8.5	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
8.6	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.64
8.7	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.51
8.8	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.45	0.41
8.9	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.36	0.33

9.0	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.33	0.31	0.29	0.26
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Table 2: pH and Temperature Dependent MDEL Ammonia Criteria

pH	Temp (°C)																	
	0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0	27.0	28.0	29.0	30.0
6.5	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
6.6	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
6.7	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
6.8	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
6.9	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
7.0	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
7.1	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
7.2	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
7.3	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
7.4	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
7.5	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
7.6	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
7.7	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
7.8	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
7.9	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
8.0	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
8.1	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
8.2	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
8.3	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
8.4	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
8.5	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
8.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7
8.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.4
8.8	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.1
8.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.95	0.87
9.0	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.82	0.76	0.70

