ORDER NO. R1-2012-0068
NPDES NO. CA0022888
WDID NO. 1B84029OMEN

WASTE DISCHARGE REQUIREMENTS

FOR THE

CITY OF UKIAH
UKIAH WASTEWATER TREATMENT PLANT
MENDOCINO COUNTY

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

Table 1. Permittee Information

Permittee	City of Ukiah
Name of Facility	Ukiah Wastewater Treatment Plant
Facility Address	300 Plant Road
	Ukiah, CA 95482-5400
	Mendocino County
Type of Facility	Publicly-Owned Treatment Works (POTW)
Facility Design Flow	Secondary Treatment: 3.01 mgd (average daily dry weather design flow[1]) 24.5 mgd (peak daily wet weather design flow[2]) Advanced Wastewater Treatment: 7.0 mgd (peak wet weather flow)

[1] Average daily dry weather design flow is defined as the average of daily inflows calculated during the lowest consecutive 30-day period each calendar year.

[2] Peak daily wet weather design flow is defined as the maximum volume of effluent that may be treated, based on the capacity of the advanced wastewater treatment filters.

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Disinfected tertiary treated municipal wastewater	39° 07' 07" N	123° 11' 28"	Russian River
002	Disinfected secondary treated municipal wastewater	--	--	Percolation ponds adjacent to the Russian River

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	August 23, 2012
This Order shall become effective on:	October 1, 2012
This Order shall expire on:	September 30, 2017
The Permittee shall file a Report of Waste Discharge as an application for renewal of waste discharge requirements in accordance with title 23, California Code of Regulations, no later than:	December 30, 2016
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a major discharge.	

IT IS HEREBY ORDERED, that this Order supersedes Regional Water Quality Control Board (Regional Water Board) Order No. R1-2006-0049 upon the effective date specified in Table 3. In order to meet the provisions contained in division 7 of the California Water Code (Water Code) (commencing with section 13000) and regulations 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 in this Order. This action in no way prevents the Regional Water Board from taking any enforcement action for past violations of the previous permit. If any part of this Order is subject to a temporary stay of enforcement, unless otherwise specified, the Permittee shall comply with the analogous portions of Order No. R1-2006-0049, which shall remain in effect for all purposes during the pendency of the stay.

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 August 23, 2012.

Original signed by Luis Rivera for
Matthias St. John, Executive Officer

Table of Contents

I. Facility Information 4
II. Findings 4
III. Discharge Prohibitions 5
IV. Effluent Limitations And Discharge Specifications 6
A. Effluent Limitations 6
B. Land Discharge Specifications – Not Applicable 9
C. Reclamation Specifications – Not Applicable 9
D. Other Requirements 9
V. Receiving Water Limitations 10
A. Surface Water Limitation 10
B. Groundwater Limitations 12
VI. Provisions 12
A. Standard Provisions 12
B. Monitoring and Reporting Program (MRP) Requirements 13
C. Special Provisions 13
VII. Compliance Determination 24

List of Tables

Table 1. Permittee Information 1
Table 2. Discharge Locations 2
Table 3. Administrative Information 2
Table 4. Final Effluent Limitations – Discharge Point 001 (Discharge to Russian River) 7
Table 5. Final Effluent Limitations – Discharge Point 002 (Discharge to the Evaporation/Percolation Ponds) 9

List of Attachments

Attachment A – Definitions A-1
Attachment B – Map Of City Of Ukiah Wastewater Treatment Plant B-1
Attachment C – Facility Flow Schematic C-1
Attachment D – Standard Provisions D-1
Attachment E – Monitoring and Reporting Program (MRP) E-1
Attachment F – Fact Sheet F-1

I. FACILITY INFORMATION

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

II. FINDINGS

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

A. Legal Authorities. This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this Facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

B. 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 for permit renewal, monitoring data collected and submitted during the term of the Permittee's previous Order, and other available information. The Fact Sheet (Attachment F) contains information and rationale for the requirements in this Order, and is hereby incorporated into this Order and constitutes the 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.A.3, IV.B, IV.C, V.B, VI.C.5.a and VI.C.5.d of this Order, and sections VI., VII., VIII.B, X.D.2, X.D.3.h, and X.E of the 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 Waste Discharge Requirements 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 of this Order.

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 of this Order.

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 reclamation 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 Provision G (Bypass).

E. Any sanitary sewer overflow (SSO) that results in a discharge of untreated or partially treated wastewater to (a) waters of the State, (b) groundwater, or (c) land, that 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 or under agreement to use by the Permittee 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 section II.B of the Fact Sheet or regulated by a permit issued by the State Water Resources Control Board (State Water Board) or another Regional Water Board is prohibited.

H. The mean daily dry weather flow of waste in excess of 3.01 mgd measured over a period of 30 consecutive days is prohibited.

I. The discharge of wastewater effluent from the Facility to the Russian River or its tributaries is prohibited during the period from May 15 through September 30 of each year.

J. During the period of October 1 through May 14 of each year, discharges of wastewater shall not exceed one percent of the flow of the Russian River. For purposes of this Order, compliance with this discharge rate limitation is determined as follows:

1. The discharge of advanced treated wastewater shall be adjusted at least once daily to avoid exceeding, to the extent practicable, one percent of the most recent daily flow measurement of the Russian River as measured near Hopland at USGS Gage No. 11462500, and
2. In no case shall the total volume of advanced treated wastewater discharged in a calendar month exceed one percent of the total volume of the Russian River near Hopland at USGS Gage No. 11462500 in the same calendar month.

   During periods of discharge, the gage shall be read at least once daily, and the discharge flow rate shall be set for no greater than one percent of the flow of the Russian River at the time of the daily reading. At the beginning of the discharge season, the first monthly flow comparisons shall be determined from the date when the discharge commenced to the end of the calendar month. At the end of the discharge season, the final monthly flow volume shall be determined from the first day of the calendar month to the date when the discharge ended for the season.

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

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. Final Effluent Limitations – Discharge Point 001 (Discharge to Russian River)

a. The discharge of advanced treated wastewater, as defined by the numerical limitations below, shall maintain compliance with the following effluent limitations at Discharge Point 001, during periods of discharge to the Russian River, with compliance measured at Monitoring Location EFF-001B as described in the Monitoring and Reporting Program (MRP) (Attachment E). The advanced treated wastewater shall be adequately oxidized, filtered, and disinfected as defined in title 22, division 4, chapter 3, of the CCR.

Table 4. Final Effluent Limitations – Discharge Point 001 (Discharge to Russian River)

Parameter	Units	Effluent Limitations				
		Average Monthly[1]	Average Weekly[1]	Maximum Daily[1]	Instantaneous Minimum[1]	Instantaneous Maximum[1]
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	10	15	--	--	--
	lbs/day[2] (wet-weather)	580	880	--	--	--
Total Suspended Solids (TSS)	mg/L	10	15	--	--	--
	lbs/day[2] (wet-weather)	580	880	--	--	--
pH	standard units	--	--	--	6.5	8.5
Cyanide, Total (as CN)	µg/L	4.3	--	8.5	--	--
2,3,7,8-TCDD	pg/L	1.3	--	2.6	--	--
Copper, Total Recoverable[3]	µg/L	35	--	70	--	--
Dichlorobromo-methane	µg/L	0.56	---	1.1	---	---
Chlorine, Total Residual	mg/L	0.01	--	0.02	--	--
Nitrate (as N)	mg/L	10	--	--	--	--
Ammonia	mg/L	3.5	--	6.8	--	--

b. Percent Removal. The average monthly percent removal of BOD_5 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 measured at Monitoring Location EFF-001B for the same constituent over the same time period as measured at Monitoring Location INF-001.

c. Disinfection. Disinfected effluent discharged at Discharge Point 001, with compliance measured at Monitoring Location EFF-001A, shall not contain coliform bacteria in excess of the following concentrations:

---

1 See Definitions in Attachment A and Compliance Determination discussion in section VII of this Order.

2 Mass-based effluent limitations apply during periods of discharge to surface waters (Russian River). See section VII.H of this Order regarding compliance with mass-based effluent limitations.

3 A water effect ratio of 5.33 was used in the calculation of the effluent limitation for copper.

i. The median concentration shall not exceed an MPN of 2.2 per 100 mL, using the bacteriological results of the last 7 days for which analyses have been completed[4] and

ii. The number of coliform bacteria shall not exceed an MPN of 23 per 100 mL in more than one sample in any 30-day period.

iii. No single 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 Russian 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 this effluent limitation shall be determined in accordance with section V.A of the attached MRP.

2. Interim Effluent Limitations – Discharge Point 001 (Discharge to Russian River)

This section is not applicable as the Order does not include any interim effluent limitations. In addition, interim effluent limitations for California Toxics Rule (CTR) constituents may no longer be included in NPDES permits after May 18, 2010.

3. Final Effluent Limitations – Discharge Point 002 (Discharge to the Evaporation/Percolation Ponds)

a. The Permittee shall maintain compliance with the following effluent limitations at Discharge Point 002, with compliance measured at Monitoring Location EFF-002 as described in the attached MRP (Attachment E). The secondary treated wastewater shall be adequately oxidized and disinfected as defined in title 22, division 4, chapter 3, of the CCR.

[4] See section VII.H of this Order regarding compliance with bacteriological limitations.

Table 5. Final Effluent Limitations – Discharge Point 002 (Discharge to the Evaporation/Percolation Ponds)

Parameter	Units	Effluent Limitations				
		Average Monthly[1]	Average Weekly[1]	Maximum Daily[1]	Instantaneous Minimum[1]	Instantaneous Maximum[1]
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	30	45	60	--	--
pH	standard units	--	--	--	6.0	9.0
Total Suspended Solids (TSS)	mg/L	30	45	60	--	--

b. **Percent Removal.** The average monthly percent removal of BOD_5 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 measured at Monitoring Location EFF-002 for the same constituent over the same time period as measured at Monitoring Locations INF-001.

c. **Disinfection.** Disinfected effluent discharged at Discharge Point 002, with compliance measured at Monitoring Location EFF-002, shall not contain coliform bacteria in excess of the following concentrations:

i. The median concentration shall not exceed an MPN of 23 per 100 mL, using the bacteriological results of the last 7 days for which analyses have been completed, and

ii. The number of coliform bacteria shall not exceed an MPN of 240 per 100 mL in more than one sample in any 30-day period.

B. Land Discharge Specifications – Not Applicable

C. Reclamation Specifications – Not Applicable

D. Other Requirements

1. **Filtration Process Requirements for Advanced Wastewater Treatment System.** The filtered effluent shall not exceed any of the following turbidity specifications at Monitoring Location INT-001 prior to discharge to the advanced wastewater treatment (AWT) disinfection unit:

a. 2 NTU, as a daily average;

b. 5 NTU, more than 5% of the time within a 24-hour period; nor

c. 10 NTU, at any time.

V. RECEIVING WATER LIMITATIONS

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are required to be addressed as part of this Order. However, 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 a violation has occurred.

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

A. Surface Water Limitation

1. The discharge shall not cause the dissolved oxygen concentration of the receiving water to be depressed below 7.0 mg/L. Additionally, the discharge shall not cause the dissolved oxygen content of the receiving water to fall below 10.0 mg/L more than 50 percent of the time, or below 7.5 mg/L more than 10 percent of the time in a calendar year. In the event that the receiving waters are determined to have a dissolved oxygen concentration of less than 7.0 mg/L, the discharge shall not depress the dissolved oxygen concentration below the existing level.
2. The discharge shall not cause the pH of receiving waters to be depressed 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 that which occurs naturally.
3. The discharge shall not cause the specific conductance of the receiving waters to increase above 250 micromhos/cm[5] more than 50 percent of the time, or above 320 micromhos/cm more than 10 percent of the time. Compliance will be determined by evaluating the 50th percentile and 10th percentile of the monthly means of receiving water data each calendar year.
4. The discharge shall not cause the total dissolved solids concentration of the receiving waters to increase above 150 mg/L more than 50 percent of the time, or above 170 mg/L more than 10 percent of the time. Compliance will be determined by evaluating the 50th percentile and 10th percentile of the monthly means of receiving water data each calendar year.
5. The discharge shall not cause the turbidity of receiving waters to be increased more than 20 percent above naturally occurring background levels.
6. The discharge shall not cause receiving waters to contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

[5] Measured at 77º F.

7. 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.
8. 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.
9. The discharge shall not cause coloration of receiving waters that causes nuisance or adversely affects beneficial uses.
10. The discharge shall not cause bottom deposits in receiving waters to the extent that such deposits cause nuisance or adversely affect beneficial uses.
11. The discharge shall not cause or contribute concentrations of biostimulatory substances to receiving waters that promote objectionable aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.
12. 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.
13. The discharge shall not cause a measurable temperature change in the receiving water at any time.
14. 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, fungicide, wood treatment chemical, or other toxic pollutant concentrations in bottom sediments or aquatic life to levels which are harmful to human health.
15. The discharge shall not cause receiving waters to contain concentrations of pesticides in excess of the limiting concentrations set forth in Table 3-2 of the Basin Plan or in excess of more stringent Maximum Contaminant Levels (MCLs) established for these pollutants in title 22, division 4, chapter 15, articles 4 and 5.5 of the CCR.
16. 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.
17. 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 Clean Water Act and regulations adopted

thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the Clean Water Act, or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such more stringent standards.

18. The discharge shall not cause concentrations of chemical constituents to occur in excess of limits specified in Table 3-2 of the Basin Plan or in excess of more stringent MCLs established for these pollutants in title 22, division 4, chapter 15, articles 4 and 5.5 of the CCR.

19. 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.

B. Groundwater Limitations

1. The collection, treatment, storage, and disposal of wastewater or recycled water shall not cause or contribute to a statistically significant 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 and reasonable best management practices, will not violate groundwater quality objectives or cause impacts to beneficial uses of groundwater.
2. The collection, treatment, storage, and disposal of treated wastewater or recycled water shall not cause or contribute to levels of chemical constituents in groundwater that exceed the levels specified in title 22, division 4, chapter 15, article 4, section 64435 of the CCR or listed in Table 3-2 of the Basin Plan.
3. The collection, treatment, storage and disposal of the treated wastewater or recycled water shall not cause or contribute to levels of radionuclides in groundwater in excess of the limits specified in title 22, division 4, chapter 15, article 5, section 64443 of the CCR.
4. The collection, treatment, storage, and disposal of wastewater or recycled water shall not cause groundwater to contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

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 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, interim or final effluent limitation, land discharge 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 components, breach of pond containment, sanitary sewer overflow, 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 and report orally and in writing to the Regional Water Board staff all unauthorized spills of waste. Spill notification and reporting shall be conducted in accordance with section 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 to this Order, and future revisions thereto.

C. Special Provisions

1. Reopener Provisions

a. **Standard Revisions.** If applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, the Regional Water Board may reopen this Order and make modifications in accordance with such revised standards.

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 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.C) program is adopted, this Order may be reopened and effluent limitations for the pollutant(s) that are the subject of the TMDL will be modified or imposed to conform this Order to the TMDL requirements.

e. **Nutrients.** This Order contains monitoring requirements for ammonia, nitrate, and phosphorus. If new water quality objectives for nutrients are established, or if monitoring data indicate the need for effluent limitations for any of these parameters, this Order may be reopened and modified to include new or modified effluent limitations, as necessary.

f. **Reclamation Requirements.** As part of its ROWD/permit application, the Permittee identified plans to construct a reclamation system for agricultural and urban reclamation. Sufficient information was not available to include reclamation requirements at the time the Regional Water Board adopted this Order. Upon submittal of the needed information by the Permittee, this Order may be reopened to incorporate reclamation requirements.

g. **Discharge Rate.** As part of its ROWD/permit application, the Permittee requested an exception to the Basin Plan one percent discharge rate limitation. The Permittee requested an increase in discharge rate to 5 percent of the Russian River flow during the discharge season October 1 through May 14. The Permittee's discharge does not currently comply with ammonia effluent limitations. Upon demonstration that the Permittee's discharge is compliant with all effluent limitations and upon submittal of an antidegradation analysis, this Order may be reopened to consider the requested increase in discharge rate.

h. **Salt and Nutrient Management Plans.** 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. The Recycled Water Policy finds that the appropriate way to address salt and nutrient issues is through the development of regional or subregional salt and nutrient management plans rather than through imposing requirements solely on individual recycled water projects. The Regional Water Board is developing a plan to address salt and nutrient management. This Order may be reopened to incorporate provisions consistent with any salt and nutrient management plan(s) adopted by the Regional Water Board.

2. **Special Studies, Technical Reports and Additional Monitoring Requirements**

   a. **Toxicity Reduction Requirements**

      i. **Whole Effluent Toxicity.** In addition to a numeric limitation for whole effluent acute toxicity, the MRP of this Order requires routine monitoring for whole effluent chronic toxicity to determine compliance with the Basin Plan's narrative water quality objective for toxicity. As established by the MRP, if either of the effluent limitations for acute toxicity is exceeded (a single sample with less than 70% survival or a three sample median of less than 90% survival) or if the chronic toxicity monitoring trigger of either a single sample maximum of 1.6 chronic toxicity units (TUc) or a monthly median of 1.0 TUc (where TUc = 100/NOEC)[6] is exceeded, the Permittee shall conduct accelerated monitoring as specified in section V. of the MRP.

      Results of accelerated toxicity monitoring will indicate a need to conduct a toxicity reduction evaluation (TRE), if toxicity persists; or it will indicate that a return to routine toxicity monitoring is justified because persistent toxicity has not been identified by accelerated monitoring. TREs shall be conducted in accordance with the TRE workplan prepared by the Permittee pursuant to Section VI.C.2.a.ii of this Order, below.

      ii. **Toxicity Reduction Evaluation Workplan.** The Permittee submitted a TRE workplan to the Regional Water Board on May 7, 2007. This plan shall be reviewed at least once every 5 years and updated as necessary in order to remain current and applicable to the discharge and discharge facilities. The Permittee shall notify the Regional Water Board of this review and submit any revision of the TRE workplan with each Report of Waste Discharge.

      The TRE workplan 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 toxicity identification evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).

[6] See Section VII.J of this Order regarding compliance with chronic toxicity triggers.

iii. Toxicity Reduction Evaluations (TRE) Implementation. The TRE shall be conducted in accordance with the following:

(a). The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring testing, required by Sections V.A.7 and V.B.9 of the MRP, observed to exceed either the acute or chronic toxicity parameter.

(b). The TRE shall be conducted in accordance with the Permittee's TRE workplan.

(c). The TRE shall be in accordance with current technical guidance and reference material including, at a minimum, the USEPA manual EPA/833B 99/002.

(d). The TRE may end at any stage if, through monitoring results, it is determined that there is no longer consistent toxicity. The Permittee shall notify the Regional Water Board of this determination.

(e). The Permittee may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. TIEs shall be conducted in accordance with current technical guidance and reference material, including, at a minimum, the Permittee shall use the USEPA acute and chronic manuals, EPA/600/6-91/005F (Phase I), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III).

(f). As toxic substances are identified or characterized, the Permittee shall continue the TRE by determining the source(s) 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 chronic toxicity parameters.

(g). Many recommended TRE elements accompany required efforts of source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements of recommendations of such programs may be acceptable to comply with requirements of the TRE.

(h). The Regional Water Board recognizes that chronic toxicity may be episodic and identification of a reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Regional Water Board will be based in part on the Permittee's actions and efforts to identify and control or reduce sources of consistent toxicity.

3. Best Management Practices and Pollution Prevention

a. **Pollutant Minimization Program (PMP)**

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 reported as detected, but not quantified (DNQ) when the effluent limitation is less than the method detection limit (MDL), 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:

i. A sample result is reported as DNQ and the effluent limitation is less than the RL; or

ii. A sample result is reported as ND and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in MRP section X.B.4.

b. The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

i. 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;

ii. Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;

iii. 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;

iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and

v. 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:

(a) All PMP monitoring results for the previous year;

(b) A list of potential sources of the reportable priority pollutant(s);

(c) A summary of all actions undertaken pursuant to the control strategy; and

(d) A description of actions to be taken in the following year.

4. Construction, Operation and Maintenance Specifications

a. The Permittee shall 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. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Permittee only when necessary to achieve compliance with the conditions of this Order.

b. The Permittee shall maintain an updated Operation and Maintenance (O&M) Manual for the Facility. The Permittee shall update the O&M Manual, as necessary, to conform to changes in operation and maintenance of the Facility. 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 treatment facility so as 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.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. **Wastewater Collection Systems**

i. **Statewide General WDRs for Sanitary Sewer Systems**

The Permittee shall maintain coverage under, and shall be subject to the requirements of Order Nos. 2006-0003-DWQ and WQ-2008-0002-EXEC and any future revisions thereto for operation of its wastewater collection system. The Statewide General WDRs for Sanitary Sewer Systems are further described in section VII.B.5.a of the Fact Sheet.

In addition to the coverage obtained under Order No. 2006-0003, the Permittee's collection system is part of the treatment system that is subject to this Order. As such, pursuant to federal regulations at section 122.44, title 40 of the Code of Federal Regulations (40 CFR), the Permittee must properly operate and maintain its collection system (40 CFR 122.41(e)), report any non-compliance (40 CFR 122.41(l)(6) and (7)), and mitigate any discharge from the collection system in violation of this Order (40 CFR 122.41(d)).

ii. **Spills and Sanitary Sewer Overflows**

(a) The Permittee shall take all feasible steps to stop spills and sanitary sewer overflows (SSOs) as soon as possible. All reasonable steps should be taken to collect spilled material and protect the public from contact with wastes or waste-contaminated soil or surfaces.

(b) The Permittee shall report orally[7] and in writing to the Regional Water Board staff all SSOs and unauthorized spills of waste. Spill notification and reporting shall be conducted in accordance with section X.E of the Monitoring and Reporting Program.

b. **Source Control and Pretreatment Provisions**

The Permittee shall perform source control functions and provide a summary of source control activities conducted in the Annual Facility Report (due March 1st to the Regional Water Board). Source control functions and requirements shall include the following:

i. 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.

[7] Oral reporting means direct contact with a Regional Water Board staff person. The oral report may be given in person or by telephone. After business hours, oral contact must be made by calling the California Emergency Management Agency at (800) 852-7550 or the Regional Water Board spill officer at (707) 576-2220.

ii. 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.

iii. **Industrial Waste Survey**

(a). The Permittee shall conduct an industrial waste survey (IWS) of all the industrial users (IUs) in the service area of the Facility to determine whether any IUs are subject to pretreatment standards specified in 40 CFR Part 403. The Permittee shall also perform a priority pollutant scan[8] of the influent to the Facility. At a minimum, the IWS must identify the following for each industrial user and zero-discharging categorical industrial user: whether it qualifies as a significant user; the average and peak flow rates; the SIC code; any pretreatment being implemented by each industrial user; and whether or not the Permittee has issued a permit to any of the identified industrial users. The IWS and priority pollutant monitoring is required during the 12-month period that begins on July 1, 2013.

(b). The results of the IWS and priority pollutant monitoring shall be submitted to the Regional Water Board in a written report no later than October 1, 2014. The written report shall include a certification report indicating whether the Facility receives pollutants from any IU that would require the Permittee to establish a pretreatment program in accordance with 40 CFR Part 403.

(c). If, at any time, the Permittee becomes aware of an IU in the service area of the Facility that would require development of a pretreatment program pursuant to 40 CFR Part 403, then:

(1) The Permittee shall notify the Regional Water Board within 30 days after there are discharges that trigger the pretreatment requirements.

(2) The Permittee shall submit a revised Report of Waste Discharge and the pretreatment program for the Regional Water Board's review and approval as soon as possible but not more than 1 year

[8] The priority pollutant scan shall include CTR and title 22 pollutants. CTR pollutants are those pollutants identified in the California Toxics Rule at 40 CFR 131.38, and title 22 pollutants are those pollutants for which the California Department of Public Health has established Maximum Contaminant Levels (MCLs) at title 22, division 4, chapter 15, article 5.5, sections 64431 (Inorganic Chemicals) and 64444 (Organic Chemicals) of the California Code of Regulations. Duplicate analyses are not required for pollutants that are identified as CTR and title 22 pollutants.

after the Permittee's notification to the Regional Water Board of the need for pretreatment requirements. The Permittee shall require all Categorical Industrial Users (CIUs) in the service area of the Facility to comply with the federal categorical pretreatment standards.

(3) The Permittee shall notify the CIU(s) of its discharge effluent limits. The limits must be as stringent as the pretreatment standards contained in the applicable federal category (40 CFR Part 400-699). The Permittee may develop more stringent, technology-based local limits if it can show cause.

(4) The Permittee shall notify the Regional Water Board if any CIU in the service area of the Facility violates its discharge effluent limits.

iv. 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.

v. Perform ongoing inspections and monitoring, as necessary, to ensure adequate source control.

vi. 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.

vii. 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 CFR Part 403 if the Regional Water Board finds that the Facility receives pollutants from an IU 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 comply with all of the land application and disposal requirements in 40 CFR 503, which are enforceable by the USEPA, not the Regional Water Board. If during the life of this Order, the State accepts primacy for implementation of 40 CFR 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 CFR 258. In the annual self-monitoring report, the Permittee shall report the amount of sludge placed in a landfill and the landfill(s) which received the sludge or biosolids.

v. The beneficial use of biosolids by application to land as soil amendment is not covered or authorized by this Order. Biosolids that are applied to land as soil amendment by the Permittee within the North Coast Region shall comply with State Water Board Water Quality Order No. 2004-12-DWQ (General Waste Discharge Requirements for the Discharge of Biosolids to Land as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities) or other permits issued by the Regional Water Board.

vi. 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.

vii. 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.

viii. 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 at least a 100-year storm.

ix. 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. **Discharge of Biosolids**

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

i. Statewide General WDRs for Discharge of Biosolids to Land

If applicable, the Permittee shall obtain authorization to discharge under and meet the requirements of the State Water Board Water Quality Order No. 2004-0012-DWQ General Waste Discharge Requirements for the Discharge of Biosolids to Land or Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural, and Land Reclamation Activities. For existing discharges of biosolids to land, the Permittee shall submit a Notice of Intent to Comply within 180 days of the effective date of this Order. For future discharges of biosolids to land, the Permittee shall submit a Notice of Intent to Comply in accordance with the enrollment requirements of Order No. 2004-0012-DWQ; or

ii. Alternatively, the Permittee may dispose of biosolids at another appropriately permitted facility.

iii. New sludge treatment and storage facilities must comply with the Water Code and title 27 of the CCR requirements for the protection of water quality.

e. **Operator Certification**

Supervisors and operators of municipal wastewater treatment facilities (WWTFs) 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 WWTF operator, the State Water Board may approve use of a water treatment facility operator of appropriate grade certified by the California Department of Public Health (CDPH) where water reclamation is involved.

f. **Adequate Capacity**

If the Facility or effluent disposal areas 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 four years. The time for filing the required technical report may be extended by the Regional Water Board. An extension of 30 days may be granted by the Executive Officer, and longer extensions may be granted by the Regional Water Board itself. [CCR title 23, section 2232]

6. Other Special Provisions

a. **Storm Water Best Management Practices (BMPs).** BMPs to control storm water at the Facility shall be developed and upgraded, as necessary. In each annual report submitted to the Regional Water Board, 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.

7. Compliance Schedules

This section is not applicable to the Permittee.

VII. COMPLIANCE DETERMINATION

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

A. General

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP 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 the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL). 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 2,3,7,8-TCDD Equivalents in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported minimum level (ML).

B. Multiple Sample Data

When determining compliance with an 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 “Detected, but Not Quantified” (DNQ) or “Not Detected” (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 values around the middle unless one or both of the points are ND or DNQ, in which case

the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

C. Average Monthly Effluent Limitation (AMEL)

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. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

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. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

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. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

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).

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).

H. Mass-Based Effluent Limitations

Compliance with mass- and concentration-based effluent limitations for the same parameter shall be determined separately. Mass-based calculations shall use transfer flow rate and effluent concentration measured at EFF-001B (discharge to the Russian River).

1. Weekly Average. Compliance with the weekly mass-based average limitation shall be determined using the following formula:

   lbs./day = 8.34 * Ce * Q, where

   Ce = average of effluent concentrations collected during the calendar week (mg/L)

   Q = average flow rate averaged over the same calendar week (mgd)

2. Monthly Average. Compliance with the monthly mass-based average limitation shall be determined using the following formula:

   lbs./day = 8.34 * Ce * Q, where

   Ce = average of effluent concentrations collected during the calendar month (mg/L)

   Q = average flow rate averaged over the same calendar month (mgd)

I. 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 7-day median will be determined as a rolling median during periods when sampling occurs more frequently than weekly. During periods when sampling is weekly, this requirement shall apply to each weekly sample.

J. Chronic Toxicity Triggers

1. When a single chronic toxicity test result is available in a monthly monitoring period, compliance will be determined by comparing the single result to the monthly median chronic toxicity trigger of 1.0 TUc.

2. If two or more chronic toxicity test results are available in a monthly monitoring period, compliance will be determined by calculating the median of the test results and comparing the calculated median to the monthly median chronic toxicity trigger of 1.0 TUc, and the individual sample results will be compared to the single sample chronic toxicity trigger of 1.6 TUc. If the first monthly chronic toxicity result is greater than 1.0 TUc, a minimum of three chronic toxicity test results would be needed to demonstrate compliance with the monthly median chronic toxicity trigger of 1.0 TUc.

K. Mean Daily Dry Weather Flow

1. Compliance with the mean daily dry weather flow prohibition in section III.H of this Order will be determined by evaluating all flow data collected in a calendar year. The lowest 30 day period of flow must be 3.01 mgd or less.

.

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.

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

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 less than the RL, but greater than or equal to the laboratory's MDL.

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

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

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

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

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).

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 title 40 of the Code of Federal Regulations, 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.

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

Persistent Pollutants: substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP): 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 Clean Water Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.

Reporting Level (RL): the ML (and its associated analytical method) used for reporting and compliance determination. 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.

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

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

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

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

where:

x is the observed value;

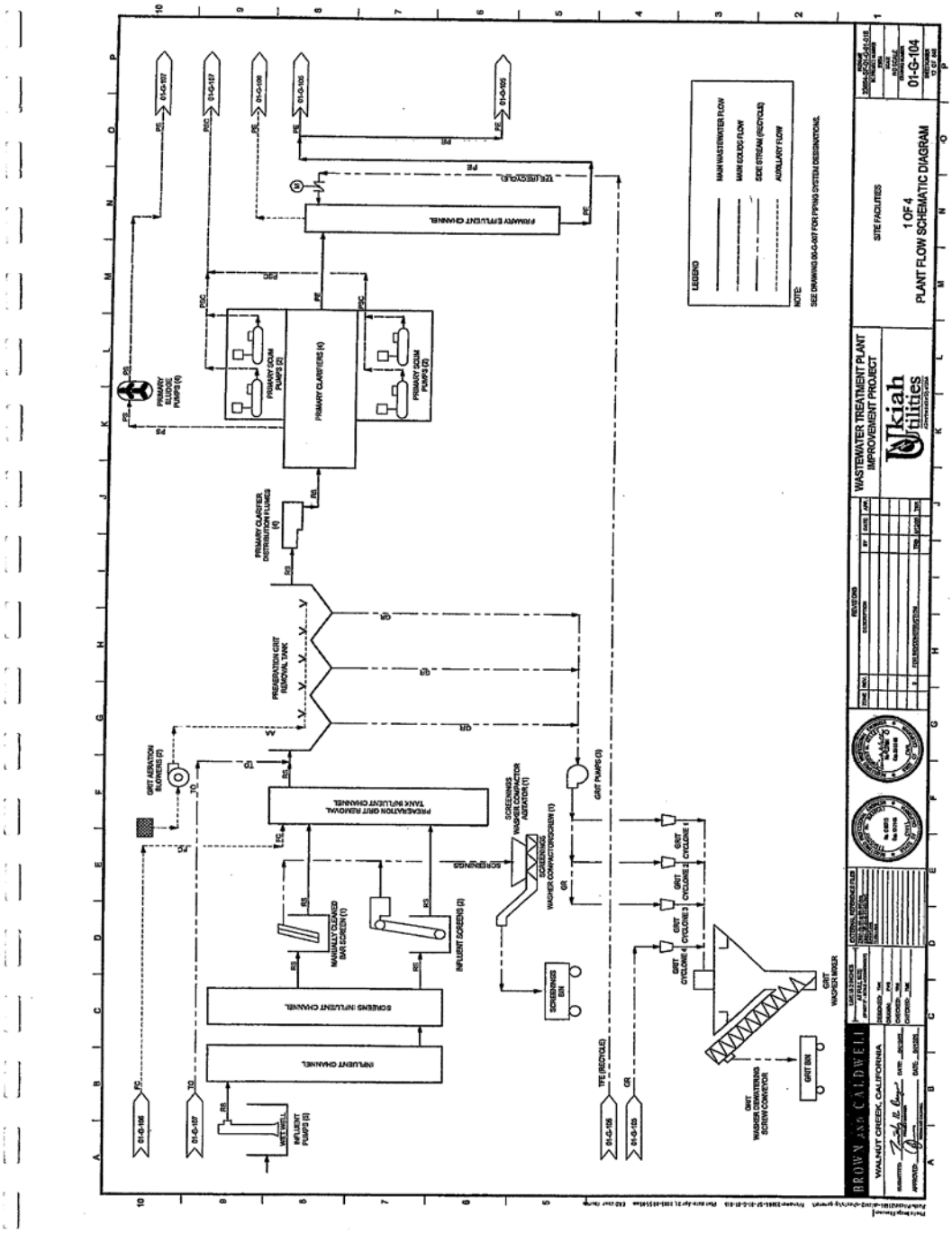
μ is the arithmetic mean of the observed values; and

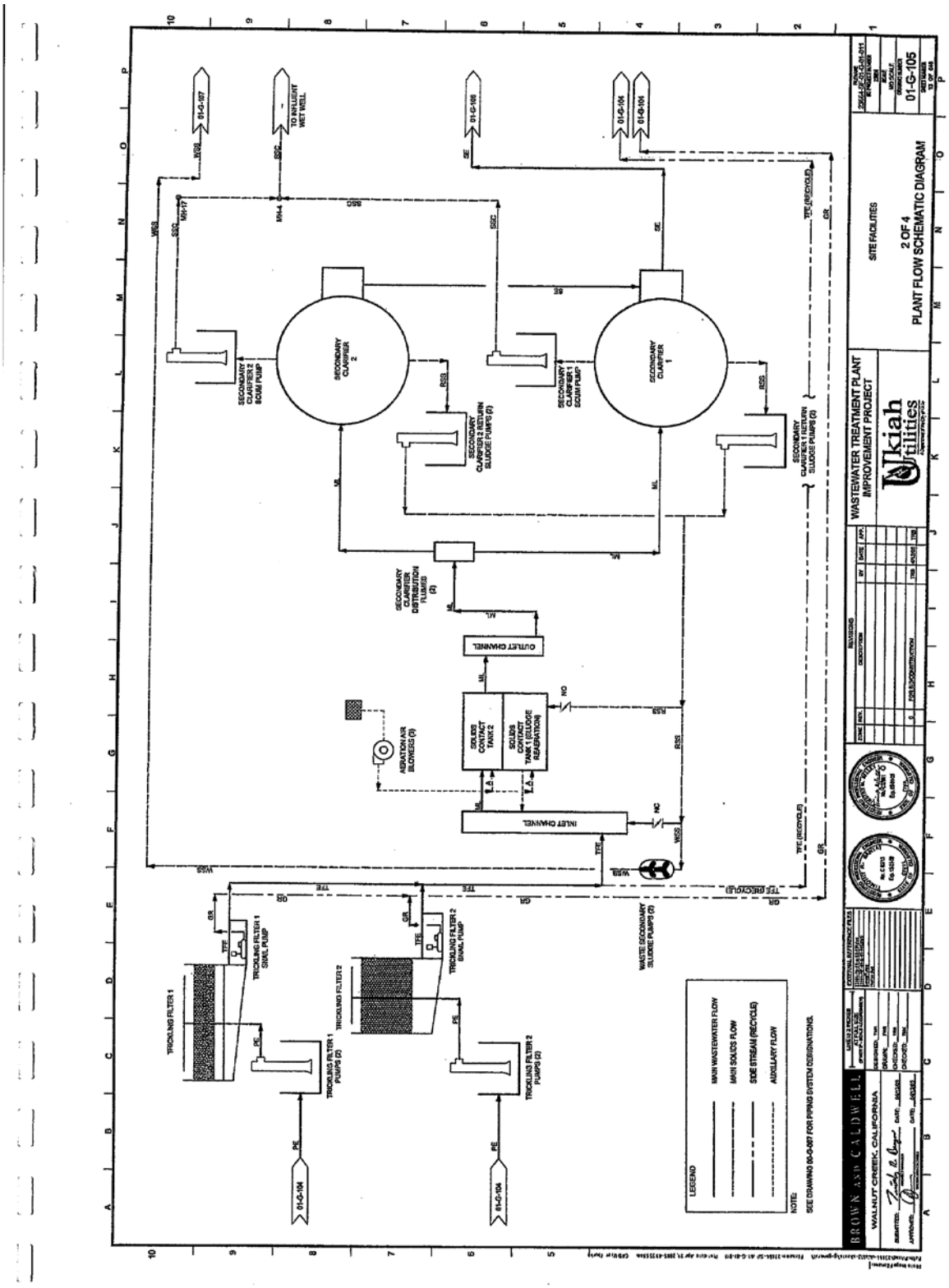
n is the number of samples.

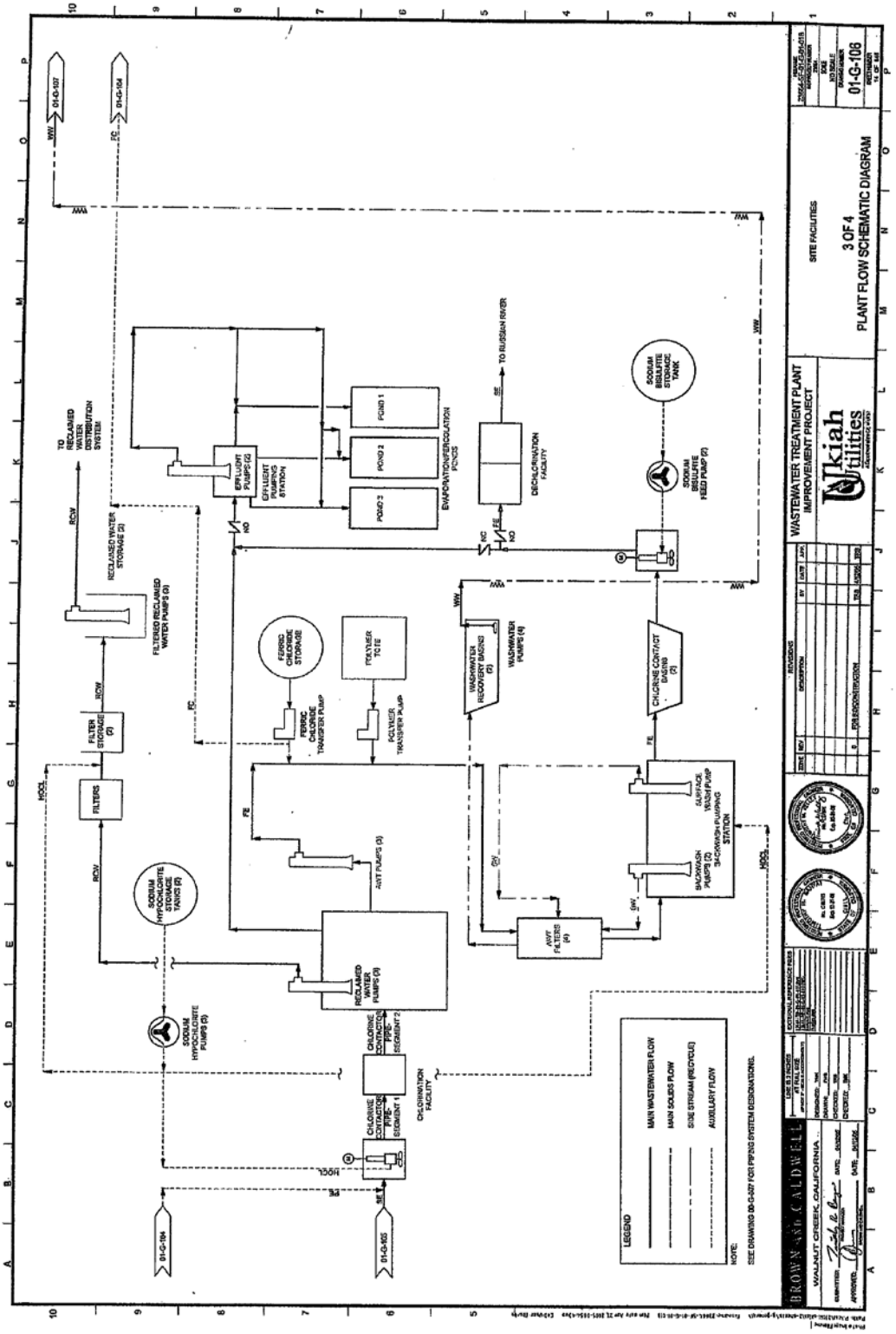
Toxicity Reduction Evaluation (TRE): a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps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

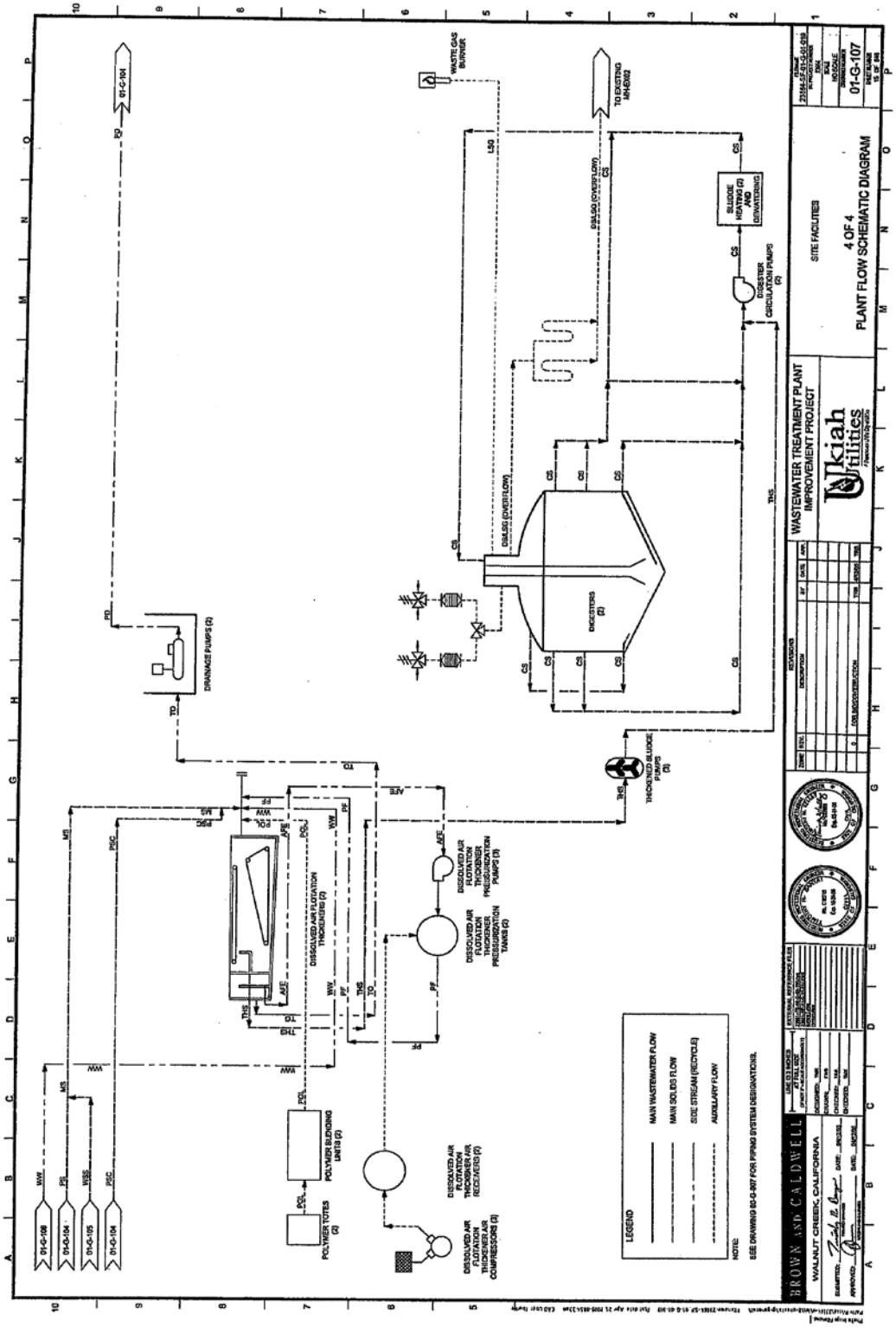
ATTACHMENT B – MAP OF CITY OF UKIAH WASTEWATER TREATMENT PLANT

ATTACHMENT C – FACILITY FLOW SCHEMATIC




SECONDARY CLARIFIER 2
SECONDARY CLARIFIER 1
SECONDARY CLARIFIER 2 SCUM PUMP
SECONDARY CLARIFIER 1 SCUM PUMP
SECONDARY CLARIFIER 2 RETURN SLUDGE PUMPS (2)
SECONDARY CLARIFIER 1 RETURN SLUDGE PUMPS (2)
SECONDARY CLARIFIER DISTRIBUTION PUMPS (3)
OUTLET CHANNEL
INLET CHANNEL
SOLIDS CONTACT TANK
SOLIDS CONTACT TANK 1 (SLUDGE REGENERATION)
AERATION AIR BLOWERS (3)
TRICKLING FILTER 1
TRICKLING FILTER 2
TRICKLING FILTER 1 SIGNAL PUMP
TRICKLING FILTER 2 SIGNAL PUMP
TRICKLING FILTER 1 PUMPS (2)
TRICKLING FILTER 2 PUMPS (2)
WASTE SECONDARY SLUDGE PUMPS (2)
TO RIN LIGHT WET WELL
LEGEND
MAIN WASTEWATER FLOW
MAIN SOLIDS FLOW
SIDE STREAM (RECYCLE)
AUXILIARY FLOW
NOTE:
SEE DRAWING 00-G-007 FOR PIPING SYSTEM DESIGNATIONS.
SITE FACILITIES
2 OF 4
PLANT FLOW SCHEMATIC DIAGRAM
WASTEWATER TREATMENT PLANT IMPROVEMENT PROJECT
Ukiah Utilities
01-G-105
BROWN AND CALDWELL
WALNUT CREEK, CALIFORNIA


WASTEWATER TREATMENT PLANT IMPROVEMENT PROJECT
Ukiah Utilities
3 OF 4
PLANT FLOW SCHEMATIC DIAGRAM
SITE FACILITIES
01-G-108
BROWN AND CALDWELL
WALNUT CREEK, CALIFORNIA
LEGEND
MAIN WASTEWATER FLOW
MAIN SOLIDS FLOW
SIDE STREAM (RECYCLE)
AUXILIARY FLOW
NOTE:
SEE DRAWING 00-G-007 FOR PIPING SYSTEM DESIGNATIONS.
01-G-107
01-G-104
01-G-105
TO RECLAIMED WATER DISTRIBUTION SYSTEM
RECLAIMED WATER STORAGE (2)
FILTERED RECLAIMED WATER PUMPS (3)
FILTER STORAGE (2)
FILTERS
SODIUM HYPOCHLORITE STORAGE TANKS (2)
SODIUM HYPOCHLORITE PUMPS (3)
RECLAIMED WATER PUMPS (3)
CHLORINE CONTACTOR PIPE SEGMENT 1
CHLORINE CONTACTOR PIPE SEGMENT 2
CHLORINATION FACILITY
EFFLUENT PUMPS (2)
EFFLUENT PUMPING STATION
POND 1
POND 2
POND 3
EVAPORATION/PERCOLATION PONDS
DECHLORINATION FACILITY
TO RUSSIAN RIVER
SODIUM BISULFITE STORAGE TANK
SODIUM BISULFITE FEED PUMP (2)
FERRIC CHLORIDE STORAGE
FERRIC CHLORIDE TRANSFER PUMP
POLYMER TOTE
POLYMER TRANSFER PUMP
AVF PUMPS (3)
UNDERWATER RECOVERY BASINS (2)
WASHWATER PUMPS (4)
CHLORINE CONTACT DRAIN (2)
AVF FILTERS (3)
SURFACE WASH PUMP
BACKWASH PUMPS (2)
BACKWASH PUMPING STATION


WASTE GAS BURNER
TO EXISTING MH-SV02
01-G-101
DRAINAGE PUMPS (2)
DIGESTERS (2)
SLUDGE HOPPER (2) AND DEWATERING
DIGESTER CIRCULATION PUMPS (2)
THICKENED SLUDGE PUMPS (2)
DISSOLVED AIR FLOTATION THICKENER PRESSURIZATION PUMPS (2)
DISSOLVED AIR FLOTATION THICKENER PRESSURIZATION TANKS (2)
DISSOLVED AIR FLOTATION THICKENERS (2)
POLYMER BLENDING UNITS (2)
POLYMER TOTES (2)
DISSOLVED AIR FLOTATION THICKENER AIR RECEIVERS (2)
DISSOLVED AIR FLOTATION THICKENER AIR COMPRESSORS (2)
01-G-100
01-G-104
01-G-105
01-G-104
LEGEND
MAIN WASTEWATER FLOW
MAIN SOLIDS FLOW
SIDE STREAM (RECYCLE)
AUXILIARY FLOW
NOTE:
SEE DRAWING 02-G-007 FOR PIPING SYSTEM DESIGNATIONS.
BROWN AND CALDWELL
WALNUT CREEK, CALIFORNIA
WASTEWATER TREATMENT PLANT IMPROVEMENT PROJECT
Ukiah Utilities
SITE FACILITIES
4 OF 4
PLANT FLOW SCHEMATIC DIAGRAM
01-G-107

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; or denial of a permit renewal application. (40 CFR § 122.41(a).)

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 CFR § 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 CFR § 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 CFR. § 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 CFR § 122.41(e).)

E. Property Rights

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

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

F. Inspection and Entry

The Permittee shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 CFR § 122.41(i); Water Code, § 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 (40 CFR § 122.41(i)(1));

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 CFR § 122.41(i)(2));

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 CFR § 122.41(i)(3)); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 CFR § 122.41(i)(4).)

G. Bypass

1. Definitions

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

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

2. Bypass not exceeding limitations. The 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 CFR § 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 CFR § 122.41(m)(4)(i)):

    a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR § 122.41(m)(4)(i)(A));

    b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR § 122.41(m)(4)(i)(B)); and

    c. The Permittee submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.6 below. (40 CFR § 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 CFR § 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 notice, if possible at least 10 days before the date of the bypass. (40 CFR § 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 CFR § 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the 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 CFR § 122.41(n)(1).)

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

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

   a. An upset occurred and that the Permittee can identify the cause(s) of the upset (40 CFR § 122.41(n)(3)(i));

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

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

   d. The Permittee complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR § 122.41(n)(3)(iv).)

3. Burden of proof. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof. (40 CFR § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for modification, revocation and reissuance, or

termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 CFR § 122.41(f).)

B. Duty to Reapply

If the 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 CFR § 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 CFR § 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 CFR § 122.41(j)(1).)

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

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 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 CFR § 122.41(j)(2).)

B. Records of monitoring information shall include:

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

2. The individual(s) who performed the sampling or measurements (40 CFR § 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 CFR § 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 CFR § 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 CFR § 122.41(j)(3)(v)); and

6. The results of such analyses. (40 CFR § 122.41(j)(3)(vi).)

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

1. The name and address of any permit applicant or Permittee (40 CFR § 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 CFR § 122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Permittee shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Permittee shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 CFR § 122.41(h); Water Code, § 13267.)

B. Signatory and Certification Requirement

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

2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 CFR § 122.22(a)(3).).

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described

in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

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

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

c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 CFR § 122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the 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 CFR § 122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

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

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR § 122.22(l)(4).)

2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for

reporting results of monitoring of sludge use or disposal practices. (40 CFR § 122.41(l)(4)(i).)

3. If the Permittee monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 CFR § 122.41(l)(4)(ii).)

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The 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 CFR § 122.41(l)(6)(i).)

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

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

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

   c. Violation of a maximum daily discharge limitation for any of the pollutants listed in this Order to be reported within 24 hours [40 CFR § 122.41(l)(6)(ii)(C)]

3. The 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 CFR § 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 CFR § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source as defined in section 122.29(b) (40 CFR § 122.41(l)(1)(i)); or

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

3. The alteration or addition results in a significant change in the 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 CFR § 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

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

H. Other Noncompliance

The 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. (40 CFR § 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 USEPA, the Permittee shall promptly submit such facts or information. (40 CFR § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

A. 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 CFR § 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 CFR § 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 the Order. (40 CFR § 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 CFR § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM NO. R1-2012-0068

Table of Contents

I. General Monitoring Provisions E-2
II. Monitoring Locations E-3
III. Influent Monitoring Requirements E-4
  A. Monitoring Location INF-001 ..... E-4
IV. Effluent Monitoring Requirements E-4
  A. Monitoring Location INT-001 ..... E-4
  B. Monitoring Location EFF-001A E-5
  C. Monitoring Location EFF-001B E-5
  D. Monitoring Location EFF-002 ..... E-7
V. Whole Effluent Toxicity Testing Requirements E-8
VI. Land Discharge Monitoring Requirements – Not Applicable E-14
VII. Reclamation Monitoring Requirements E-15
VIII. Receiving Water Monitoring Requirements – Surface Water And Groundwater E-15
IX. Other Monitoring Requirements E-16
X. Reporting Requirements E-17

List of Tables

Table E-1. Test Methods and MLs for Priority Pollutants E-3
Table E-2. Monitoring Station Locations E-3
Table E-3. Influent Monitoring – Monitoring Location INF-001 ..... E-4
Table E-4. Effluent Monitoring – Monitoring Location INT-001 ..... E-4
Table E-5. Effluent Monitoring – Monitoring Location EFF-001A E-5
Table E-6. Effluent Monitoring – Monitoring Location EFF-001B E-5
Table E-7. Effluent Monitoring for Discharges to Percolation Ponds – Monitoring Location EFF-002 ..... E-8
Table E-8. Receiving Water Monitoring Requirements E-15
Table E-9. Groundwater Monitoring Requirements E-16
Table E-10. Monitoring Periods and Reporting Schedule E-18

Attachment E – Monitoring and Reporting Program (MRP)
The Code of Federal Regulations (CFR) at 40 CFR 122.48 requires that all National Pollutant Discharge Elimination System (NPDES) permits specify monitoring and reporting requirements. California Water Code (Water Code) sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements, which implement the 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 one hour.

B. If the Permittee monitors any pollutant more frequently than required by this Order, using test procedures approved by 40 CFR 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. Laboratories analyzing monitoring samples shall be certified by the California Department of Public Health (CDPH) in accordance with the provisions of Water Code section 13176, and must include quality assurance / quality control data with their analytical reports.

D. Compliance and reasonable potential monitoring analyses shall be conducted using commercially available and reasonably achievable detection limits that are lower than the applicable effluent limitation. If no Minimum Level (ML) value is below the effluent limitations, the lowest ML shall be selected as the Reporting Level (RL). Table E-1 lists the test methods the Permittee may use for compliance and reasonable potential monitoring to analyze priority pollutants with effluent limitations.

Table E-1. Test Methods and MLs for Priority Pollutants

CTR#	Constituent	Types of Analytical Methods MLs (µg/L)				
		Colorimetric	Gas Chromatography (GC)	Gas Chromatography/ Mass Spectroscopy (GCMS)	Inductively Coupled Plasma/ Mass Spectroscopy (ICPMS)	Stabilized Platform Graphite Furnace Atomic Absorption
6	Copper	---	---	---	0.5	2
14	Cyanide	5	---	---		
16	2,3,7,8-TCDD[1]	The Permittee shall use USEPA Method 1613 and achieve MLs equal to ½ the MLs specified in Table 2 of USEPA Method 1613[1]				
27	Dichlorobromomethane	---	0.5	2	---	---
68	Bis(2-Ethylhexyl) Phthalate	---	--	5	---	---

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-2. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	Untreated influent wastewater collected at the plant headworks at a representative point preceding primary treatment.
001	INT-001	Treated wastewater immediately following the advanced wastewater (AWT) process and prior to the chlorine contact chamber.
001	EFF-001A	A representative point immediately following AWT disinfection but prior to dechlorination.
001	EFF-001B	Treated wastewater after AWT disinfection but prior to discharge to the receiving water.
002	EFF-002	Treated wastewater after secondary disinfection but prior to discharge to the percolation ponds.
--	RSW-001	Upstream receiving water monitoring location in the Russian River, approximately 50 feet upstream of the discharge outfall and at a location that is not influenced by the discharge.
--	RSW-002	Downstream receiving water monitoring location in the Russian River in an area influenced by the discharge. This monitoring location ranges between 50 and 200 feet downstream of the discharge outfall and depends on the river stage.
--	GW-01, GW-02, GW-03	Groundwater monitoring wells

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

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

Table E-3. Influent Monitoring – Monitoring Location INF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-Hr Composite	Weekly	Standard Methods[1]
Total Suspended Solids	mg/L	24-Hr Composite	Weekly	Standard Methods
CTR Pollutants[2]	µg/L	24-Hr Composite[3]	1X/Permit Term	Standard Methods
Maximum Daily Flow	mgd	Meter	Continuous	Meter
Mean Daily Flow	mgd	Meter	Continuous	Meter

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INT-001

The Permittee shall monitor advanced treated wastewater at Monitoring Location INT-001 during periods of discharge to the Russian River as follows:

Table E-4. Effluent Monitoring – Monitoring Location INT-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Turbidity[4]	NTU	Meter	Continuous	---

1 In accordance with the current edition of Standard Methods for Examination of Water and Wastewater (American Public Health Administration) or current test procedures specified in 40 CFR Part 136.

2 CTR pollutants are those pollutants identified in the California Toxics Rule at 40 CFR 131.38.

3 24-hour composite samples shall be collected for all constituents, except for those constituents that are volatile and or require grab sampling for other reasons (e.g., ultraclean sample collection methods required). The priority pollutant monitoring report shall document the sampling method used for each constituent and provide the justification for the use of grab sampling for specific constituents (e.g., volatile, ultraclean method required, etc.)

4 Turbidity monitoring requirements are described in detail in section IX.A of this MRP.

B. Monitoring Location EFF-001A

The Permittee shall monitor advanced treated wastewater immediately following disinfection but prior to dechlorination at Monitoring Location EFF-001A during periods of discharge to the Russian River as follows:

Table E-5. Effluent Monitoring – Monitoring Location EFF-001A

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Coliform Organisms	MPN/100 ml	Grab	Weekly	Standard Methods[1]
Chlorine Residual [5]	mg/L	Grab	Daily	Standard Methods

C. Monitoring Location EFF-001B

The Permittee shall monitor shall monitor disinfected advanced treated wastewater at Monitoring Location EFF-001B during periods of discharge to the Russian River as follows:

Table E-6. Effluent Monitoring – Monitoring Location EFF-001B

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Maximum Daily Effluent Flow	mgd	Meter	Continuous	--
Mean Daily Effluent Flow	mgd	Meter	Continuous	--
Discharge Dilution Rate	% of stream flow	Calculate	Daily	--
Biochemical Oxygen Demand (5-Day @ 20°C)	mg/L	24-Hr Composite	Weekly	Standard Methods[1]
	lbs/day	Calculate		--
	Monthly % Removal	Calculate		--
Total Suspended Solids	mg/L	24-Hr Composite	Weekly	Standard Methods
	lbs/day	Calculate		--
	Monthly % Removal	Calculate		--
pH	standard units	Grab	Daily	Standard Methods
Chlorine, Total Residual[6]	mg/L	Meter	Continuous	Standard Methods

[5] Chlorine residual monitoring at Monitoring Location M-001A shall demonstrate that a chlorine residual is present after chlorination.

[6] Chlorine residual monitoring at Monitoring Location EFF-001B shall demonstrate that there is no detectable chlorine during periods of discharge to the Russian River. Samples collected to demonstrate complete

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	Weekly	Standard Methods
Temperature	°F or °C	Grab	Daily	Standard Methods
Hardness, Total (as $CaCO_3$) [7]	mg/L	Grab	Monthly	Standard Methods
Copper, Total Recoverable[7]	µg/L	Grab	Monthly	Standard Methods
Cyanide, Total (as CN)	µg/L	Grab	Monthly	Standard Methods
Bis(2-Ethylhexyl) phthalate[8]	µg/L	Grab	Monthly	EPA Method 625
2,3,7,8-TCDD	pg/L	Grab	Annually	EPA Method 1613
Chloroform	µg/L	Grab	Monthly	EPA Method 624
Dichlorobromomethane	µg/L	Grab	Monthly	EPA Method 624
Dibromochloromethane	µg/L	Grab	Monthly	EPA Method 624
Bromoform	µg/L	Grab	Monthly	EPA Method 624
Acute Toxicity[9]	% Survival	24-Hr Composite	Monthly	See Section V.A below
Chronic Toxicity[9]	TUc	24-Hr Composite	Annually	See Section V.B below
Chronic Toxicity (narrative)	Passed/ Triggered[10]			---

dechlorination shall be collected at a point following dechlorination and prior to discharge to the Russian River. All chlorine residual measurements shall be reported as total chlorine residual.

7 Monitoring for effluent and receiving water hardness shall be conducted concurrently with effluent sampling for copper.

8 Monitoring for bis(2-ethylhexyl)phthalate is necessary to determine whether or not there is reasonable potential. Monitoring for bis(2-ethylhexyl)phthalate may be eliminated by the Regional Water Board Executive Officer upon demonstration that there is no reasonable potential to cause or contribute to an exceedance of the CTR water quality objective for bis(2-ethylhexyl)phthalate.

9 Whole effluent acute and chronic toxicity shall be monitored in accordance with the requirements of section V of this Monitoring and Reporting Program.

10 The Permittee shall include reporting regarding compliance with the narrative toxicity objective in Receiving Water Limitation V.A.10 by reporting whether the chronic toxicity test “passed” or “triggered” in relation to the chronic toxicity trigger of1.6 TUc (where TUc =100/NOEC) for each single sample or 1.0 TUc as a monthly median. For narrative chronic toxicity reporting, “Passed” shall be reported when chronic toxicity effluent results do not trigger accelerated testing (e.g., a single sample result of ≤1.6TUc or a monthly median of ≤1.0 TUc). “Triggered” shall be reported when chronic toxicity effluent results trigger accelerated testing by exceeding the chronic toxicity trigger of 1.6 TUc for a single sample or 1.0 TUc as a monthly median.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
CTR Pollutants[11]	µg/L	24-Hr Composite[12]	Annually	Standard Methods
Title 22 Pollutants[13]	µg/L	24-hr Composite[12]	1X/Permit Term	Standard Methods
Turbidity	NTU	Grab	Daily	Standard Methods
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Weekly	Standard Methods
Ammonia Nitrogen, Total (as N)[14]	mg/L	Grab	Weekly	Standard Methods
Ammonia Nitrogen, Unionized (as N)	mg/L	Calculation-	Weekly	Standard Methods
Phosphorus, Total (as P)	mg/L	Grab	Monthly	Standard Methods
Specific Conductance	µmhos/cm[15]	Grab	Monthly	Standard Methods
Total Dissolved Solids	mg/L	Grab	Monthly	Standard Methods

D. Monitoring Location EFF-002

The Permittee shall monitor treated wastewater to be discharged to the percolation ponds at Monitoring Location EFF-002 as follows:

---

[11] CTR pollutants are those pollutants identified in the California Toxics Rule at 40 CFR 131.38. For priority pollutants, the methods must meet the lowest minimum level (ML) specified in Attachment 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP, see section III.B.3 of the Fact Sheet). In accordance with Section 2.4 of the SIP, the Discharger shall report the ML and MDL for each sample result. Where no methods are specified for a given pollutant, the Discharger shall use methods approved by the Regional Water Board. The laboratory's current MDL shall be determined by the procedure found in 40 CFR 136 (revised as of May 14, 1999).

[12] 24-hour composite samples shall be collected for all constituents, except for those constituents that are volatile and or require grab sampling for other reasons (e.g., ultraclean sample collection methods required). The priority pollutant monitoring report shall document the sampling method used for each constituent and provide the justification for the use of grab sampling for specific constituents (e.g., volatile, ultraclean method required, etc.)

[13] The title 22 pollutants are those pollutants for which the California Department of Public Health has established Maximum Contaminant Levels (MCLs) at title 22, division 4, chapter 15, article 4, section 64431 (Inorganic Chemicals) and article 5.5, section, 64444 (Organic Chemicals) of the CCR. Duplicate analyses are not required for pollutants that are identified both as CTR and title 22 pollutants. Monitoring required in future permit terms may be reduced to only those pollutants detected in the title 22 sampling conducted during this permit term.

[14] Monitoring for ammonia shall be concurrent with acute whole effluent toxicity monitoring (Section V.A. of this MRP). Effluent and receiving water temperature and pH shall be recorded at the time the ammonia sample is collected.

[15] Measured in micromhos/cm at 25°C

Table E-7. Effluent Monitoring for Discharges to Percolation Ponds – Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Maximum Daily Effluent Flow	mgd	Meter	Continuous	--
Mean Daily Effluent Flow	mgd	Meter	Continuous	
Biochemical Oxygen Demand (5-Day @ 20°C)	mg/L	24-Hr Composite	Weekly	Standard Methods[1]
Total Suspended Solids	mg/L	24-Hr Composite	Weekly	Standard Methods
pH	standard units	Grab	Daily	Standard Methods
Chlorine, Total Residual[16]	mg/L	Meter	Continuous	Standard Methods
Total Coliform Organisms	MPN/100 ml	Grab	Weekly	Standard Methods
Nitrate Nitrogen, as N	mg/L	Grab	Monthly	Standard Methods
Ammonia Nitrogen, as N	mg/L	Grab	Monthly	Standard Methods
Organic Nitrogen, as N	mg/L	Grab	Monthly	Standard Methods
Nitrite Nitrogen, as N	mg/L	Grab	Monthly	Standard Methods
Total Dissolved Solids	mg/L	Grab	Monthly	Standard Methods
Sodium[17]	mg/L	Grab	Monthly	Standard Methods
Chloride[17]	mg/L	Grab	Monthly	Standard Methods

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing

The Permittee shall conduct acute whole effluent toxicity testing (WET) to determine compliance with the effluent limitation for acute toxicity established by section IV.A.1 of the Order.

1. **Test Frequency.** The Permittee shall conduct acute WET testing in accordance with the schedule established by this MRP while discharging at Discharge Point 001B, as summarized in MRP section IV.C.1 and Table E-6, above.

2. **Sample Type.** For 96-hour static renewal or 96-hour static non-renewal testing, the effluent samples shall be 24-hour composite samples collected at Monitoring Location EFF-001B.

---

16 Chlorine residual monitoring at Monitoring Location EFF-002 shall demonstrate that there is a chlorine residual present after chlorination.

17 Monitoring frequency may be reduced by the Regional Water Board Executive Officer if monitoring data collected during the first year of monitoring demonstrates that there is no reasonable potential to cause or contribute to an exceedance above an applicable water quality objective.

3. **Test Species.** Test species for acute WET testing shall be a vertebrate, the rainbow trout, *Oncorhynchus mykiss* and an invertebrate, the water flea, *Ceriodaphnia dubia*, for at least the first two suites of tests conducted within 12 months after the effective date of the Order. After this screening period, monitoring shall be conducted monthly using the most sensitive species. At least once every five years, the Permittee shall re-screen with the two species listed above and continue monitoring with the most sensitive species.

4. **Test Methods.** The presence of acute toxicity shall be estimated as specified in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (USEPA Report No. EPA-821-R-02-012, 5th edition or subsequent editions), or other methods approved by the Executive Officer.

   Test procedures related to pH control, sample filtration, aeration, temperature control and sample dechlorination shall be performed in accordance with the USEPA 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.

5. **Test Dilutions.** The acute toxicity test shall be conducted using 100 percent effluent collected at Monitoring Location EFF-001B.

6. **Test Failure.** If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Permittee shall re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

7. **Accelerated Monitoring.** If the result of any acute toxicity test fails to meet the single test minimum limitation (70 percent survival), and the testing meets all test acceptability criteria, 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 VI.C.2.a.ii of the Order. If the two additional samples are in compliance with the acute toxicity requirement and testing meets all test acceptability criteria, 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.

8. **Notification.** The Permittee shall notify the Regional Water Board verbally within 72 hours and in writing within 14 days after the receipt of test results exceeding the

acute toxicity effluent limitation during regular or accelerated monitoring. The notification will 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.

9. **Reporting.** The acute toxicity test results shall include the contracting laboratory's complete report provided to the Permittee and shall be in accordance with section 12 (Report Preparation) of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms.* The submitted report shall clearly identify the test results.

10. **Ammonia Toxicity.** The acute toxicity test shall be conducted without modifications to eliminate ammonia toxicity.

B. Chronic Toxicity Testing

The Permittee shall conduct chronic toxicity testing to demonstrate compliance with the Basin Plan's water quality objective for toxicity. The Permittee shall meet the following chronic toxicity testing requirements:

1. **Test Frequency.** The Permittee shall conduct annual chronic WET testing in accordance with the schedule established by this MRP while discharging at Discharge Point 001B, as summarized in MRP section IV.C.1 and Table E-6, above.

2. **Sample Type.** For 96-hour static renewal or 96-hour static non-renewal testing, the effluent samples shall be 24-hour composite samples and shall be representative of the volume and quality of the discharge. Effluent samples shall be collected at Monitoring Location EFF-001. When tests are conducted off-site, a minimum of three samples shall be collected, in accordance with USEPA test methods. Any receiving water used for control or dilution water shall be a grab sample obtained from Monitoring Location RSW-001, as identified in Table E-2 of this MRP.

3. **Test Species.** Test species for chronic WET testing shall be a vertebrate, the fathead minnow, *Pimephales promelas* (Larval Survival and Growth Test Method 1000.0), an invertebrate, the water flea, *Ceriodaphnia dubia* (Survival and Reproduction Test Method 1002.01), and a plant, the green algae, *Selanastrum capricornutum* (also named *Raphidocelis subcapitata)* (Growth Test Method 1003.0). Initial testing for the first two suites of tests, shall include the three species listed above. After this screening period, monitoring shall be conducted annually using the most sensitive species. At least once every five years, the Permittee shall rescreen with the three species listed above, and continue to monitor with the most sensitive species.

4. **Test Methods.** The presence of chronic toxicity shall be estimated as specified in USEPA's *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms* (USEPA Report No. EPA-821-R-02-013, or subsequent editions).

   Test procedures related to pH control, sample filtration, aeration, temperature control and sample dechlorination shall be performed in accordance with the USEPA method and fully explained and justified in each acute toxicity report submitted to the Regional Water Board. The control of pH in chronic toxicity tests is allowed, provided the test pH is maintained at the pH of the receiving water 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.

5. **Test Dilutions.** The chronic toxicity test shall be conducted using a series of at least five dilutions and a control. The series shall consist of the following dilution series: 12.5, 25, 50, 75, and 100 percent, and a control. Effluent dilution water and control water may be receiving water collected at RSW-001 or standard synthetic laboratory water, as described in the USEPA test methods manual. Where the receiving water does not exhibit toxicity or biostimulatory effects, receiving water is preferred for control and dilution water. If the dilution water used is different from the test organism culture water, a second control using culture water shall be used.

6. **Reference Toxicant.** If organisms are not cultured in-house, concurrent testing with a reference toxicant shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicant tests also shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc.).

7. **Test Failure.** If either the reference toxicant test or the chronic toxicity test does not meet all test acceptability criteria, as specified in the test method, the Permittee shall re-sample and re-test as soon as possible, not to exceed 14 days following notification of test failure.

8. **Notification.** The Permittee shall notify the Regional Water Board verbally within 72 hours and in writing within 14 days after the receipt of test results exceeding the chronic toxicity trigger during regular or accelerated monitoring.

9. **Accelerated Monitoring Requirements.** If the result of any routine chronic toxicity test exceeds the chronic toxicity monitoring trigger of 1.6 TUc as a single sample result or 1.0 TUc as a monthly median, as specified in section VI.C.2.a. of the Order, and the testing meets all test acceptability criteria, the Permittee shall initiate accelerated monitoring. Accelerated monitoring shall consist of up to four additional effluent samples and dilution series (specified in number 5 above) – with one test for

each test species showing toxicity results exceeding the toxicity trigger, as defined by conditions a. through c. below. Accelerated monitoring tests shall be conducted approximately every week over a 4 week period.

Testing shall commence within 14 days of receipt of initial sample results which indicated an exceedance of the chronic toxicity trigger. If the discharge will cease before the additional samples can be collected, the Permittee shall contact the Executive Officer within 21 days with a plan to address elevated levels of chronic toxicity in effluent and/or receiving water. The following protocol shall be used for accelerated monitoring and TRE implementation:

a. If the result of any accelerated toxicity test exceeds 1.0 TUc, the Permittee shall cease accelerated monitoring and, within thirty (30) days of the date of completion of the accelerated monitoring test, initiate the TRE Workplan developed in accordance with Section VI.C.2.a.(2) of the Order to investigate the cause(s) and identify corrective actions to reduce or eliminate the chronic toxicity. Within thirty (30) days of completing the TRE Workplan implementation, the Permittee shall submit a report to the Regional Water Board including, at a minimum:

    i. Specific actions the Permittee took to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;
    ii. Specific actions the Permittee took to mitigate the impact of the discharge and prevent the recurrence of toxicity;
    iii. Recommendations for further actions to mitigate continued toxicity, if needed; and
    iv. A schedule for implementation of recommended actions.

b. If the results of four consecutive accelerated monitoring tests do not exceed 1.0 TUc, the Permittee may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, if there is adequate evidence of a pattern of effluent toxicity, the Regional Water Board's Executive Officer may require that the Permittee initiate a TRE.

c. If the source(s) of the toxicity is easily identified (i.e. temporary plant upset), the Permittee shall make necessary corrections to the facility and shall continue accelerated monitoring until four (4) consecutive accelerated tests do not exceed the monitoring "trigger." Upon confirmation that the chronic toxicity has been removed, the Permittee may cease accelerated monitoring and resume regular chronic toxicity monitoring.

10. **Ammonia Toxicity.** The chronic toxicity test shall be conducted without modifications to eliminate ammonia toxicity.

C. Chronic Toxicity Reporting

1. **Routine Reporting.** All toxicity test reports shall include the contracting laboratory's complete report provided to the Permittee and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals and this Monitoring and Reporting Program.

   Regular chronic toxicity monitoring results shall be submitted within 30 days following completion of the test. The WET test report 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;

   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. identification of any reference toxicant testing performed;

   e. tabular summary of test results for control water and each effluent dilution and statistics summary to include calculation of NOEC, TU_c and IC_{25};

   f. identification of any anomalies or nuances in the test procedures or results; and

   g. summary and conclusions section.

   Test results shall include, at a minimum, for each test:

   a. Sample date(s);
   b. Test initiation date;
   c. Test species;
   d. End point values for each dilution (e.g., number of young, growth rate, percent survival);
   e. NOEC value(s) in percent effluent;
   f. IC15, IC25, IC40, and IC50 values (or EC15, EC25…etc.) in percent effluent;
   g. TUc values (100/NOEC);
   h. Mean percent mortality (±s.d.) after 96 hours in 100 percent effluent (if applicable);

i. NOEC and LOEC values for reference toxicant test(s);

j. IC50 or EC50 value(s) for reference toxicant test(s);

k. Available water quality measurements for each test (e.g., pH, DO, temperature, conductivity, hardness, salinity, ammonia);

l. Statistical methods used to calculate endpoints;

m. The statistical output page, which includes the calculation of percent minimum significant difference (PMSD); and

n. 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.

2. **Quality Assurance Reporting.** Because the permit requires sublethal hypothesis testing endpoints from methods 1000.0, 1002.0, and 1003.0 in the test methods manual titled *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA-821-R-02-013, 2002), with-in test variability must be reviewed for acceptability and variability criteria (upper and lower PMSD bounds) must be applied, as directed under section 10.2.8 – *Test Variability* of the test methods manual. Under section 10.2.8, the calculated PMSD for both reference toxicant test and effluent toxicity test results must be compared with the upper and lower PMSD bounds variability criteria specified in Table 6 – *Variability Criteria (Upper and Lower PMSD Bounds) for Sublethal Hypothesis Testing Endpoints Submitted Under NPDES Permits*, following the review criteria in paragraphs 10.2.8.2.1 through 10.2.8.2.5 of the test methods manual. Based on this review, only accepted effluent toxicity test results shall be reported.

3. **Compliance Summary.** The monthly self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency (routine, accelerated, or TRE). The final report shall clearly demonstrate that the Permittee is in compliance with effluent limitations and other permit requirements.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

This section is not applicable to the Permittee as treated wastewater is not discharged to or applied to land for the purpose of disposal.

VII. RECLAMATION MONITORING REQUIREMENTS

This section of the NPDES permit is not applicable to the Permittee. The Permittee proposes to construct a reclamation system for agricultural and urban reclamation. Details of the reclamation system are not yet available, therefore reclamation requirements will be established at a future date either by reopening this Order or through adoption of an individual permit or enrollment in a general order.

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Surface Water Monitoring Locations RSW-001 and RSW-002

1. The Permittee shall monitor the Russian River at Monitoring Locations RSW-001 and RSW-002, upstream and downstream of the discharge point, respectively, during periods of discharge to the Russian River as follows:

Table E-8. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	Weekly	Standard Methods[1]
Temperature	°C	Grab	Weekly	Standard Methods
pH	standard units	Grab	Weekly	Standard Methods
Turbidity	NTU	Grab	Weekly	Meter
Hardness ($CaCO_3$)	mg/L	Grab	Monthly	Standard Methods
Nitrate Nitrogen	mg/L	Grab	Weekly	Standard Methods
Ammonia Nitrogen	mg/L	Grab	Weekly	Standard Methods
Cyanide	µg/L	Grab	Monthly	Standard Methods
2,3,7,8-TCDD[18]	pg/L	Grab	Annually	EPA Method 625
Copper[18]	µg/L	Grab	Monthly	Standard Methods
Specific Conductance[15]	µmhos/cm	Grab	Monthly	Standard Methods
Total Dissolved Solids	mg/L	Grab	Monthly	Standard Methods
Stream Flow	mgd	Flow gage reading	Daily	---
Dilution	% of stream flow	Calculation	Daily	---

[18] For priority pollutants, the methods must meet the lowest minimum level (ML) specified in Attachment 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP, see section III.B.3 of the Fact Sheet). In accordance with Section 2.4 of the SIP, the Discharger shall report the ML and MDL for each sample result. Where no methods are specified for a given pollutant, the Discharger shall use methods approved by the Regional Water Board. The laboratory's current MDL shall be determined by the procedure found in 40 CFR 136 (revised as of May 14, 1999).

B. Groundwater

1. The Permittee shall monitor groundwater at Monitoring Locations GW-001, GW-002, and GW-003 as follows:

Table E-9. Groundwater Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	standard units	Grab	2X/Year	Standard Methods[1]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	2X/Year	Standard Methods
Chloride	mg/L	Grab	2X/Year	Standard Methods
Total Dissolved Solids	mg/L	Grab	2X/Year	Standard Methods
Total Coliform Bacteria	MPN/100 mL	Grab	2X/Year	Standard Methods
Surveyed Groundwater Level	feet	--	2X/Year	--

2. Within 60 days of the permit adoption date, the Permittee shall submit a Quality Assurance/Quality Control (QA/QC) Plan for its groundwater monitoring program that addresses specific procedures to be followed to ensure that groundwater sampling data is reliable and defensible. The QA/QC plan shall be developed in accordance with acceptable QA/QC standards. The plan shall include a procedure for testing an additional sample anytime there are detections of monitored pollutants above a specific threshold.

IX. OTHER MONITORING REQUIREMENTS

A. Filtration Process Monitoring

Filtration process monitoring shall demonstrate compliance with section IV.D.1 (Filtration Process Requirements) of this Order and applies to all treated wastewater flows. 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. Should the turbidity meter and recorder fail, grab sampling at a minimum frequency of 1.2 hours may be substituted for a period of up to 24 hours. The recorded data shall be maintained by the Permittee for at least 3 years. The daily maximum, daily average, and 95th percentile turbidity results shall be reported on the monthly monitoring reports.

b. Compliance. Compliance with the 95th percentile effluent turbidity limitation specified in section IV.D.1.b (Filtration Process Requirements) of this 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 referenced in section IV.D.1.c of this Order shall not be considered a violation of these waste discharge requirements if such exceedance does not exceed a duration of one minute.

c. Reporting. If the filter effluent turbidity exceeds 2 NTU based on a daily average or if the influent turbidity exceeds 5 NTU for more than 15 minutes, the incident shall be reported in the monthly self-monitoring report. If the filter effluent turbidity exceeds 10 NTU at any time, the incident shall be reported to the CDPH and the Regional Water Board by telephone within 24 hours in accordance with Provision VI.A.2.b of this Order. A written report describing the incident and the actions undertaken in response shall be included in the monthly self-monitoring report. Mitigation of the event shall consist of diverting all inadequately treated wastewater to temporary storage or an upstream process.

2. Disinfection Process Monitoring for Chlorine Disinfection System (EFF-001A and EFF-002)

a. Monitoring. The chlorine residual of the effluent from the secondary chlorine contact pipe shall be monitored continuously at a point prior to discharge to the percolation ponds and recorded. The chlorine residual of the effluent from the AWT chlorine contact basin shall be monitored continuously at a point prior to dechlorination and recorded.

b. Compliance. The monitoring data shall demonstrate that there is a chlorine residual at the end of the secondary and AWT chlorine disinfection systems at all times. In addition, monitoring shall demonstrate compliance with total coliform effluent limitations in sections IV.A.1.c and IV.A.3.c of the Order.

c. Reporting. If secondary or AWT effluent following disinfection does not have a chlorine residual, or if there is a failure of the chlorine disinfection system, the event shall be reported to the Regional Water Board in accordance with Standard Provision VI.A.2.b of the Order.

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.

2. **Schedules of Compliance.** If applicable, the Permittee shall submit all reports and documentation required by compliance schedules that are established by this Order. Such reports and documentation shall be submitted to the Regional Water Board on or before each compliance date established by this Order. If noncompliance is reported, the Permittee shall describe the reasons for noncompliance and a specific date when compliance will be achieved. The Permittee shall notify the Regional Water Board when it returns to compliance with applicable compliance dates established by schedules of compliance.

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 monthly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. 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-10. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	First day of second calendar month following month of sampling
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 month of sampling

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
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 month of sampling
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 month of sampling
Quarterly	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January through March April through June July through September October through December	First day of second calendar month following end of quarter
Semi-annually	Closest of January 1 or July 1 following (or on) permit effective date	January through June July through December	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

5. **Reporting Protocols.** The Permittee shall report with each sample result the applicable ML, the RL and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR 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 RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

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

   c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

d. Permittees are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Permittee to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

6. 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. During periods of land discharge, the reports shall certify “land discharge”.

b. The Permittee shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify:

(1) Facility name and address;

(2) WDID number;

(3) Applicable period of monitoring and reporting;

(4) Violations of the WDRs (identified violations must include a description of the requirement that was violated and a description of the violation);

(5) Corrective actions taken or planned; and

(6) The proposed time schedule for corrective actions.

d. 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 paper submittal of SMRs is required, the Discharge shall submit the SMR to the address listed below:

Regional Water Quality Control Board
North Coast Region
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

C. Discharge Monitoring Reports (DMRs)

DMRs are required for facilities designated as major dischargers.

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the discharger to electronically submit self-monitoring reports that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, major dischargers shall submit DMRs in accordance with the requirements described below. The Facility is currently designated as a major discharger.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy of the DMR to the address listed below:

STANDARD MAIL	FEDEX/UPS/ OTHER PRIVATE CARRIERS
State Water Resources Control Board Division of Water Quality c/o Discharge Monitoring Report Processing Center Post Office Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated or modified cannot be accepted.

D. Other Reports

1. The Permittee shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by Special Provisions – VI.C.2 and VI.C.3 of this Order.

2. **Groundwater Monitoring Reports.** Groundwater monitoring data shall be maintained in a spreadsheet format that allows for analysis of the on-going data. The electronic spreadsheets shall be submitted with the semi-annual groundwater monitoring reports.

3. **Annual Report.** The Permittee shall submit an annual report to the Regional Water Board for each calendar year. The report shall be submitted by March 1st of the following year. The report shall, at a minimum, include the following:

a. Both tabular and, where appropriate, 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 CFR, section 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.

c. The names, certificate grades, and general responsibilities of all persons employed at the Facility;

d. The names and telephone numbers of persons to contact regarding the wastewater treatment facility for emergency and routine situations;

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. A statement certifying whether the current operation and management manual and spill contingency plan, reflect the wastewater treatment facility as currently constructed and operated, and the dates when these documents were last reviewed and last revised for adequacy.

g. **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 Provision VI.C.5.b. of this Order.

    i. A copy of the source control standards.

    ii. A description of the waste hauler permit system.

    iii. A summary of the compliance and enforcement activities during the past year. 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 any industrial waste survey results.

    v. A summary of public participation activities to involve and inform the public.

h. **Biosolids 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 twelve months. At a minimum, the report shall contain:

i. Annual sludge production, in dry tons and percent solids

ii. A schematic diagram showing sludge handling facilities (e.g., digesters, thickeners, drying beds, etc.), if any and a solids flow diagram.

iii. 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.

i. **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.

E. Spills and Overflows Notification

1. All spills, unauthorized discharges, and sanitary sewer overflows (SSOs) equal to or in excess of 1,000 gallons or any size spill or SSO that result in a discharge to a drainage channel or a surface water:

   a. As soon as possible, but not later than **two (2) hours** after becoming aware of the discharge, the Permittee shall notify the California Emergency Management

Agency (CalEMA)[19], the local health officer or directors of environmental health with jurisdiction over affected water bodies or land areas, and the Regional Water Board.

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

i. Name and contact information of caller;
ii. Date, time and location of spill occurrence;
iii. Estimates of spill volume, rate of flow, and spill duration;
iv. Surface water bodies impacted, if any;
v. Cause of spill;
vi. Cleanup actions taken or repairs made; and
vii. Responding agencies.

b. As soon as possible, but not later than **twenty-four (24) hours** after becoming aware of a discharge, the Permittee shall submit to the Regional Water Board a certification that CalEMA and the local health officer or directors of environmental health with jurisdiction over affected water bodies or land areas have been notified of the discharge. For the purpose of this requirement, "certification" means a CalEMA certification number and, for the local health department, name of local health staff, department name, phone number and date and time contacted.

c. Within **five (5) business days**, the Permittee shall submit a written report to the Regional Water Board office. The report must include all available details related to the cause of the spill and corrective action taken or planned to be taken, as well as copies of reports submitted to other agencies.

i. Information provided in the verbal notification;
ii. Other agencies notified by telephone;
iii. Detailed description of cleanup actions and repairs taken; and
iv. Description of actions that will be taken to minimize or prevent future spills.

d. In the cover letter of the monthly monitoring report, the Permittee shall include a brief written summary of the event and any additional details related to the cause or resolution of the event, including, but not limited to results of any water quality monitoring conducted.

2. All spills, unauthorized discharges, and sanitary sewer overflows (SSOs) less than 1,000 gallons that do not reach a drainage channel or a surface water:

[19] The contact number for spill reporting for the CalEMA is (800) 852-7550. The contact number of the Regional Water Board during normal business hours is (707) 576-2220. After normal business hours, spill reporting to CalEMA will satisfy the 2 hour notification requirement for the Regional Water Board.

a. As soon as possible, but not later than **twenty-four (24) hours** after becoming aware of the discharge, the Permittee shall notify the Regional Water Board and provide the applicable information in requirement 1.a of this section.

b. In the cover letter of the monthly monitoring report, the Permittee shall include a written description of the spill event.

ATTACHMENT F – FACT SHEET

Table of Contents

I. Permit Information F-3
II. Facility Description F-4
A. Description of Wastewater and Biosolids Treatment or Controls F-5
B. Discharge Points and Receiving Waters F-7
C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data F-8
D. Compliance Summary F-10
E. Planned Changes F-12
III. Applicable Plans, Policies, And Regulations F-13
A. California Environmental Quality Act (CEQA) F-13
B. State and Federal Regulations, Policies, and Plans F-13
C. Impaired Water Bodies on CWA 303(d) List F-16
D. Other Plans, Policies and Regulations F-17
IV. Rationale For Effluent Limitations And Discharge Specifications F-18
A. Discharge Prohibitions F-18
B. Technology-Based Effluent Limitations F-22
C. Water Quality-Based Effluent Limitations (WQBELs) F-25
D. Final Effluent Limitations F-47
E. Interim Effluent Limitations F-51
F. Land Discharge Specifications F-51
G. Reclamation Specifications F-52
H. Other Requirements F-52
V. Rationale For Receiving Water Limitations F-52
A. Surface Water F-52
B. Groundwater F-52
VI. Rationale For Monitoring And Reporting Requirements F-53
A. Influent Monitoring F-53
B. Effluent Monitoring F-53
C. Whole Effluent Toxicity Testing Requirements F-54
D. Land Discharge Monitoring Requirements F-55
E. Reclamation Monitoring Requirements F-55
F. Receiving Water Monitoring F-55
G. Other Monitoring Requirements F-56
VII. Rationale For Provisions F-56
A. Standard Provisions F-56
B. Special Provisions F-57
VIII. Public Participation F-63
A. Notification of Interested Parties F-63

B. Written Comments F-63
C. Public Hearing F-64
D. Waste Discharge Requirements Petitions F-64
E. Information and Copying F-65
F. Register of Interested Persons F-65
G. Additional Information F-65

List of Tables

Table F-1. Facility Information F-3
Table F-2. Historic Effluent Limitations and Monitoring Data – Discharge Point 001 ..... F-8
Table F-3. Historic Effluent Limitations and Monitoring Data – Discharge Point 002 ..... F-9
Table F-4. Basin Plan Beneficial Uses F-14
Table F-5. USEPA Acute (30-day average) Criteria for Ammonia F-30
Table F-6. USEPA Chronic (1-hour average) Criteria for Ammonia F-31
Table F-7. Summary of Reasonable Potential Analysis Results F-38
Table F-8. Determination of Long Term Averages F-41
Table F-9. Determination of Final WQBELs Based on Aquatic Life Criteria F-41
Table F-10. Determination Final WQBELs Based on Human Health Criteria F-42
Table F-11. Whole Effluent Chronic Toxicity Monitoring Results F-44
Table F-12. Summary of Final Effluent Limitations – Discharge Point 001 ..... F-50
Table F-13. Summary of Final Effluent Limitations – Discharge Point 002 ..... F-51

ATTACHMENT F-1 RPA Summary F-1

ATTACHMENT F – FACT SHEET

As described in section II.B of the Order, the Regional Water Board incorporates this Fact Sheet as findings of the 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 Ukiah Wastewater Treatment Facility.

Table F-1. Facility Information

WDID	1B84029OMEN
Permittee	City of Ukiah
Name of Facility	City of Ukiah Wastewater Treatment Plant
Facility Address	300 Plant Road
	Ukiah, California 95482-5400
	Mendocino County
Facility Contact, Title and Phone	Tim Ericksen, City Engineer/Public Works Director, (707) 463-6280
Authorized Person to Sign and Submit Reports	Andrew Luke, Wastewater Treatment Plant Supervisor, Grade V or current wastewater treatment plant supervisor with proper signatory authorization
Mailing Address	300 Seminary Avenue, Ukiah, CA 95482-5400
Billing Address	Same as mailing address
Type of Facility	Publicly-owned treatment works
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	NA

Reclamation Requirements	NA
Facility Design and Permitted Flow	Secondary Treatment: 3.01 mgd (average daily dry weather design flow[1]) 24.5 mgd (peak daily wet weather design flow[2]) Advanced Wastewater Treatment: 7.0 mgd (peak wet weather flow)
Watershed	Russian River (Upper Russian River Hydrologic Unit, Ukiah Hydrologic Subarea)
Receiving Water	Russian River
Receiving Water Type	Inland Surface Water

A. The City of Ukiah (hereinafter Permittee) is the owner and operator of the City of Ukiah Wastewater Treatment Plant (hereinafter Facility), a POTW, as shown on Attachment B.

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.

B. Discharges from the Facility are currently regulated under Order No. R1-2006-0049 and National Pollutant Elimination Permit No. CA0022888, which was adopted on September 20, 2006 and expired on September 19, 2011 but has been administratively extended until this Order takes effect.

C. The Permittee filed a Report of Waste Discharge and submitted an application for renewal of its WDRs and NPDES permit on March 18, 2011. On August 5, 2011, Regional Water Board staff provided a letter to the Permittee indicating areas in the application that were missing or incomplete. Supplemental information was submitted on September 29, 2011, October 12, 2011, December 6, 2011, December 12, 2011, January 27, 2012, and January 31, 2012. The permit application was deemed complete on January 31, 2012.

II. FACILITY DESCRIPTION

The Facility serves the City of Ukiah and residential areas to the north and south of Ukiah as well as east of the Russian River. The Facility treats wastewater from two entities, the City of Ukiah and the Ukiah Valley Sanitation District (UVSD). The Facility serves a population of approximately 20,700, including 15,700 within the City and 5,000 in the UVSD. The UVSD also serves Mendocino College, El Dorado Estates, Vichy Springs and

[1] Average daily dry weather design flow is defined as the average of daily inflows calculated during the lowest consecutive 30-day period each calendar year.

[2] Peak daily wet weather design flow is defined as the maximum volume of effluent that may be treated, based on the capacity of the advanced wastewater treatment filters.

areas contiguous to the City of Ukiah. The City of Ukiah owns and operates the treatment facilities and its own collection system. The UVSD owns the collection system in its service area and the City of Ukiah maintains it. The City of Ukiah does not accept wastewater from any collection systems not owned or maintained by the City.

A. Description of Wastewater and Biosolids Treatment or Controls

1. Collection System

The wastewater collection system in the City and UVSD consists of approximately 67 miles of pipelines that are 6-inches in diameter or larger. A trunk sewer that ranges in size from 15 to 42 inches in diameter extends northward from the Facility for a distance of 6 miles. The majority of the sewers are gravity collection lines. There are no bypass or overflow structures in the system.

The lift stations from El Dorado Estates and Vichy Springs discharge to force mains that cross under the Russian River at two different locations. Each lift station has a bypass pipe around the pumps that allows the system to flow by gravity (via a siphoning effect), and prevent lift station overflows.

Infiltration and inflow (I/I) has historically been a problem for the Facility, resulting in significantly greater influent flows during storm events. The City's current I/I program includes plans to conduct video inspections of the entire collection system over the next four years, develop a program to address and repair major problems found during the video inspections, and to require a lateral inspection of all properties sold.

Leachate from the City's municipal landfill is discharged to the Facility. Leachate is clarified in a sedimentation basin at the landfill and subsequently stored in above ground tanks prior to being pumped to the City's sewer line. The leachate is analyzed on a quarterly basis for pollutants of concern, including total dissolved solids, nutrients, BOD_5, volatile organic compounds and petroleum hydrocarbons. Volumes of leachate discharged to the Facility vary from month to month and may be mixed with rainwater in the winter. During 2005, monthly volumes ranged from 0 to almost 600,000 gallons per month, for an annual total of almost 2 million gallons.

The flow from commercial and business facilities is approximately 28 percent of the total plant inflow. Commercial and business facilities served by the Facility include restaurants, hotels, car washes, automotive mechanics, car dealerships, hospitals, dental offices, photo processors, and other typical small city businesses. The remaining 72 percent of flow is considered residential flow. The Permittee has a large industrial user, Mendocino Brewing Company, that discharges approximately 20,000 gallons per day to the Facility (less than two percent of the total plant inflow). The City requires the Mendocino Brewing Company to pretreat its wastewater to lower the biochemical oxygen demand (BOD_5) and total suspended solids (TSS) and

monitor BOD_5 and TSS prior to discharging to the Facility. The Permittee does not accept flow from septage, chemical toilets, or other bulk waste sources.

2. Wastewater Treatment

The Facility is designed to treat an average dry-weather flow (ADWF) of 3.01 million gallons per day (mgd) and a peak wet-weather flow (PWWF) of 7.0 mgd of advanced treated wastewater (AWT). The Facility produces disinfected secondary effluent for discharge to the three percolation ponds and disinfected, dechlorinated AWT effluent for direct discharge to the Russian River. Between 2006 and 2009, the Permittee completed a Facility upgrade project that increased the ADWF capacity from 2.8 to 3.01 mgd. The upgraded wastewater treatment train consists of a new influent pumping station, bar screen facility and grit removal, conversion of the former secondary clarifiers to primary clarifiers, new trickling filter pumping station, modifications to the trickling filter distribution arms, conversion of the former primary clarifiers to solids contact tanks, new secondary clarifiers, modifications to the chlorine contactor pipe, disinfection system, AWT pump pad, AWT chlorine contact system, wash water recovery ponds, new dissolved air flotation thickeners, and conversion of the floating covers on the anaerobic digesters to fixed covers. The treatment system consists of primary sedimentation, trickling filters, secondary sedimentation, coagulation, filtration, chlorination, dechlorination, and biosolids digestion and dewatering. Solids handling facilities consist of anaerobic digesters and a belt press for dewatering. All treated wastewater is chlorinated prior to disposal. Contact time to ensure adequate chlorination of secondary effluent occurs in a 600-foot long 8-foot diameter underground pipeline. The AWT chlorination facility consists of two concrete-lined aboveground baffled basins. The Facility has the ability to dechlorinate disinfected effluent prior to discharging to the Russian River.

3. Biosolids

Biosolids generated during the treatment process are reduced, treated, and removed. Biosolids are thickened in the dissolved air flotation (DAF) units and sent to the anaerobic digesters for stabilization. The stabilized solids are removed and dewatered using a belt-press prior to being sent to an authorized landfill. All biosolids meet EPA Class B standards.

Prior to installation of the belt press for sludge dewatering, sludge ponds were used at the Facility for sludge storage. Biosolids that remain in the sludge ponds are being removed during the summer months and spread in the old sludge drying bed. After drying, the biosolids are disposed of in an authorized landfill. This will continue until the sludge ponds are empty. Presently, the City has no plans to renovate the ponds.

B. Discharge Points and Receiving Waters

1. The treatment and disposal facilities and part of the collection system are located in the Upper Russian River Hydrologic Basin (Ukiah Hydrologic Subarea) in portions of section 33, T15N, R12W, MDB&M.

2. The Facility is located adjacent to the Russian River and has three percolation ponds with a combined storage capacity of 115 million gallons. The City discharges disinfected secondary wastewater to the percolation ponds year-round. Percolation pond 1 is 14.7 acres and has a design percolation rate of 50,000 gpd per acre. Percolation pond 2 is 14.7 acres and has a design percolation rate of 80,000 gpd per acre. Percolation pond 3 is 12.4 acres and has a design percolation rate of 175,000 gpd per acre. These ponds are maintained to maximize percolation by alternately ripping the bottom of one pond each summer to increase the ponds' permeability. The ponds' bottoms slope toward the river.

3. The Facility also has an outfall pipe, designated as Discharge Point 001, which is used to discharge disinfected, dechlorinated AWT effluent directly to the Russian River, waters of the United States, during the wet-weather season (October 1 through May 14). The Permittee preferentially discharges disinfected secondary effluent to its percolation ponds and utilizes its AWT facilities and outfall as needed to balance flows.

4. In 2010 and 2011, wet winters followed by late rains into May and June, caused the percolation ponds to fill to capacity and the Permittee was unable to completely empty any of the ponds through percolation or direct river discharge in the subsequent discharge season. The Permittee's water balance is dependent on having sufficient percolation pond capacity available at the beginning of each rainy season. In addition, the Permittee is limited to discharging up to one-percent of the River flow, and the Permittee has stated that Russian River flows have decreased over the years, perhaps due to lower water releases from Lake Mendocino. The Permittee has evaluated this situation and identified two methods of improving its water balance. First, the Permittee proposes to develop a reclamation system to provide for beneficial reuse of its treated effluent. The Permittee recently completed a reclamation feasibility study and is moving forward with environmental review and preliminary design of a reclamation system. Second, the Permittee requested that the Regional Water Board consider increasing Ukiah's allowed discharge rate to five percent of the Russian River flow. The Permittee submitted an analysis as required by the Basin Plan, but due to the fact that the Facility currently has ammonia in its effluent at levels that exceed water quality objectives, the discharge rate increase cannot be granted at this time.

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

1. The existing Order, Order No. R1-2006-0049 contains effluent limitations for direct discharge to the Russian River (Discharge Point 001) and for discharges to percolation ponds adjacent to the Russian River (Discharge Point 002). Effluent limitations contained in Order No. R1-2006-0049 for discharges from Discharge Points 001 and 002 and representative monitoring data from the term of the previous Order are presented below:

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

Parameter (units)	Effluent Limitations			Monitoring Data (From November 2006 – To May 2012)			
	Average Monthly[3]	Average Weekly[3]	Maximum Daily[3]	Highest Average Monthly Result	Highest Average Weekly Result	Highest Daily Result	No. of Violations
BOD_5 (20°C, 5-day) (mg/L & lb./day)	10	15	---	20.5	28.6	---	Weekly – 3 Monthly - 2
	580	880	---	1374	733	---	Weekly – 2 Monthly - 1
Total Suspended Solids (mg/L & lb./day)	10	15	---	4.25	8	---	0
	580	880	---	92	153	---	0
Settleable Solids (mL/L)	---	---	0.1	<0. 1	---	<0.1	0
Total Coliform Organisms (MPN/100 ml)	---	2.2[4]	23[5]	---	22	22	0
pH	Not less than 6.0 nor greater than 9.0			Range of 6.5** to 7.6***			0
Chlorine Residual (mg/L)	---	---	ND	---	---	<0.01	0
Turbidity (NTU)	2	---	5	---	---	1.86	0
Copper	[6]	---	[6]	60	---	60	Interim MDEL – 4 Final MDEL – 10 Final AMEL - 12

[3] See Attachment A Definitions

[4] The median concentration shall not exceed a Most Probable Number (MPN) of 2.2 per 100 milliliters, using bacteriological results of the last 7 days for which analyses have been completed.

[5] The number of coliform bacteria shall not exceed a MPN of 23 per 100 milliliters in more than one sample in any 30-day period.

[6] Floating effluent limitations for copper are identified in Attachment E-1 of Order No. R1-2006-0049.

Parameter (units)	Effluent Limitations			Monitoring Data (From November 2006 – To May 2012)			
	Average Monthly[3]	Average Weekly[3]	Maximum Daily[3]	Highest Average Monthly Result	Highest Average Weekly Result	Highest Daily Result	No. of Violations
DCBM	0.56	---	1.1	2.3	---	2.3	Final MDEL – 2 Final AMEL - 2
Nitrate	10	---	---	10.3	---	---	0 (Note 10.3 mg/L not a violation due to the limit being stated as 10 rather tan 10.0)
Toxicity	The survival of test fish in 96-hour (static or continuous flow) bioassays in undiluted effluent samples shall equal or exceed 90 percent survival 67 percent of the time, and 70 percent survival 100 percent of the time.			0% survival**** (February 2007, December 2010 and May 2012)		100%	4
Discharge Flow (mgd)	7.0 mgd			6.89	7.34	7.45	0
Notes: ** minimum pH reported *** maximum pH reported **** lowest acute toxicity reported							

2. Effluent limitations contained in Order No. R1-2006-0049 for discharges from Discharge Point 002 (Monitoring Location EFF-002) and representative monitoring data from the term of Order No. R1-2006-0049 are as follows:

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

Parameter (units)	Effluent Limitations			Monitoring Data (From November 2006 –May2012)			
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Result	Highest Average Weekly Result	Highest Daily Result	No. of Violations
BOD_5 (20°C, 5-day) (mg/)	30	45	60	32.8	70	70	Daily – 2 Weekly – 2 Monthly – 1
Total Suspended Solids (mg/L & lb/day)	30	45	60	19.8	52	52	Weekly – 4 Monthly - 2
Settleable Solids (mL/L)	0.1	---	0.2	<0.1	---	0.02	0

Parameter (units)	Effluent Limitations			Monitoring Data (From November 2006 –May2012)			
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Result	Highest Average Weekly Result	Highest Daily Result	No. of Violations
Total Coliform Organisms (MPN/100 ml)	---	234	240	---	220	220	Daily – 0 Weekly -10
pH	Not less than 6.0 nor greater than 9.0			---	---	Range of 6.7**-7.9***	0
Discharge Flow	Design ADWF: 2.8 mgd (through 5/09) 3.01 mgd (beginning 6/09)			2.40 mgd	---	---	0
	Hydraulic capacity = 20 mgd			5.47	---	15.8	
Notes: ** minimum pH reported *** maximum pH reported							

D. Compliance Summary

1. Violations Summary

During the term of the previous Order, the Permittee experienced violations of BOD_5, TSS, copper, residual chlorine, total coliform, and toxicity effluent limitations, and sanitary sewer overflows (SSOs). Violations occurred both during periods of discharge to the percolation ponds and to the Russian River.

Most of the violations occurred between late 2006 and 2009, during a period when the Facility was undergoing a major upgrade project. The Permittee completed the Facility upgrade project by mid-2009 and since that time has experienced a reduced number of effluent limitation violations. Since the completion of the upgrade project, violations at Discharge Point 001included 34 copper, 4 dichlorobromomethane, and 3 acute toxicity effluent limitation violations and at Discharge Point 002 six BOD_5 and two coliform effluent limitation violations. The Permittee conducted an investigation regarding its copper violations and completed a Water Effect Ratio (WER) Study that demonstrated that site-specific effluent and receiving water conditions allow for the use of a WER to evaluate reasonable potential for copper and to establish appropriately protective copper effluent limitations. Use of the WER to calculate effluent limitations for copper in this permit is expected to eliminate copper violations. The Permittee also has addressed SSO violations by increasing its inspections and maintenance of the collection system to minimize SSO incidents.

2. Enforcement Action Summary

Enforcement actions taken against the Permittee, related to violations of waste discharge and NPDES requirements, are summarized below.

a. **Administrative Civil Liability (ACL) Complaint No. R1-2005-0037.** This ACL Complaint was issued by the Regional Water Board Executive Officer on May 11, 2005, to address the late submittal of a self-monitoring report required pursuant to the Permittee's NPDES Permit, Order No. R1-99-65. The Permittee was assessed a $3,000 mandatory penalty due to its December 2004 self-monitoring report being submitted 33 days late.

b. **ACL Complaint No. R1-2007-0100.** This ACL Complaint was issued by the Regional Water Board Executive Officer on November 14, 2007, to address violations of effluent limitations contained in the Permittee's NPDES permit (Order Nos. R1-99-65 and R1-2006-0049) that occurred between January 1, 2000 and September 30, 2007. The ACL Complaint assessed a $27,000 penalty for numerous violations, including exceedances of effluent limitations for acute toxicity, copper, biochemical oxygen demand, chlorine residual and total coliform bacteria.

c. **ACL Order No. R1-2008-0022.** This ACL Order allowed the Permittee to complete a supplemental environmental project (SEP) in lieu of paying the full amount of applicable mandatory minimum penalties (MMPs) identified in ACL Complaint No. R1-2007-0100. The Permittee's SEP consisted of improvements to a 300 foot section of a seasonal tributary that discharged sediment to Orr Creek, a tributary of the Russian River. The City installed larger culverts, widened a constricted portion of the stream bank to increase capacity, and stabilized the bank and upland hillside with native plants and other approved materials. On April 1, 2009, the City submitted its final report of completion to the Regional Water Board Executive Officer who agreed that the City had fulfilled its obligation to complete a SEP and permanently suspended the remaining unpaid penalty of $17,000.

d. **ACL Complaint No. R1-2010-0070.** This complaint was issued by the Regional Water Board Assistant Executive Officer on August 3, 2010 to address violations of effluent limitations contained in Order No. R1-2006-0049 that occurred between January 1, 2007 and May 31, 2010. The ACL Complaint assessed a $130,768 penalty for numerous violations, including exceedances of effluent limitations for copper during periods of discharge to the Russian River and for total coliform bacteria, total suspended solids, and biochemical oxygen demand during periods of discharge to the percolation pond. The ACL Complaint also addressed violations of discharge prohibitions that included numerous sanitary sewer overflows and an incident that resulted in the discharge of several

hundred thousand gallons of tertiary treated effluent to the Russian River that had not been dechlorinated. The ACL also addressed several self-monitoring report deficiencies (missing data or improper detection limits that resulted in not being able to determine compliance) and two unsubmitted technical reports.

e. **ACL Order No. R1-2011-0109.** This ACL Order allowed the Permittee to complete an enhanced compliance action (ECA) as allowed by the State Water Board Enforcement Policy in lieu of paying the full amount of applicable MMPs. The Permittee's ECA included rehabilitating specific areas of the sewer collection system, with the goal of reducing or eliminating excessive I/I and subsequently reducing SSOs. On April 20, 2011, the Permittee submitted a final report of project completion to the Regional Water Board Executive Officer who agreed that the City had fulfilled its obligation to complete an ECA and permanently suspended the remaining unpaid penalty of $60,134.

f. **ACL Complaint No. R1-2012-0058.** This complaint was issued by the Regional Water Board Assistant Executive Officer on April 13, 2012 to address violations of effluent limitations contained in Order No. R1-2006-0049 that occurred between June 1, 2010 and January 31, 2012. The ACL Complaint assessed an $84,000 penalty for 28 effluent limitation violations related to copper and BOD_5 that occurred during periods of discharge to the Russian River. On June 5, 2012, the Permittee indicated its intent to pay $42,000 of the penalty and direct the remainder of the penalty amount toward an ECA.

g. **Cease and Desist Order (CDO) No. R1-2012-0075.** This CDO addresses the fact that the Permittee is unable to comply immediately with new final effluent limitations for ammonia and the final effluent limitation for nitrate that is retained from the prior Order. The CDO includes a compliance schedule for the Permittee to achieve compliance with final effluent limitations for ammonia and nitrate by August 1, 2017 and interim effluent limitations for ammonia and nitrate that apply during the interim period.

E. Planned Changes

The ROWD identified plans to design and construct a reclamation system during the term of this Order. During the term of Order No. R1-2006-0049, the Permittee initiated the development of a Master Reclamation Plan that will identify a plan to develop an agricultural and urban reclamation system. Details of the Permittee's reclamation system are not yet available, thus this Order does not include reclamation requirements. Upon receipt of a ROWD and other necessary information regarding the proposed reclamation system, the Regional Water Board intends to adopt reclamation requirements for the proposed reclamation system. No other planned changes have been identified at this time.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section. This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

A. California Environmental Quality Act (CEQA)

Under California Water Code (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. Accordingly, this exemption from CEQA applies to the Regional Water Board's action to adopt those portions of the Order that regulate NPDES discharges.

This action also involves the re-issuance of waste discharge requirements for an existing facility that discharges treated wastewater to land through the use of percolation ponds for disposal. The Regional Water Board's action in approving those parts of the Order that regulate WDR-related discharges is also exempt from CEQA as an existing facility for which no expansion of design flow is being permitted at the time of the lead agency's determination pursuant to title 14, California Code of Regulations (CCR), section 15301.

B. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Quality Control Board (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 Resources Control Board (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. The Basin Plan, at page 2-18.00, establishes beneficial uses for groundwater as municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply, and freshwater supply. Thus, beneficial uses applicable to the Russian River and area groundwater within the Ukiah Hydrologic Area of the Upper Russian River Hydrologic Unit are:

Table F-4. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Russian River – Upper Russian River Hydrologic Unit – Ukiah Hydrologic Area	Existing: Municipal and domestic water supply (MUN) Agricultural supply (AGR) Industrial service supply (IND) Groundwater recharge (GWR) Freshwater replenishment (FRESH) Navigation (NAV) Hydropower generation (POW) Water contact recreation (REC-1) Non-contact water recreation (REC-2) Commercial and Sport fishing (COMM) Warm freshwater habitat (WARM) Cold freshwater habitat (COLD) Wildlife habitat (WILD) Preservation of rare, threatened or endangered species (RARE) Migration of aquatic organisms (MIGR) Spawning, reproduction and/or early development (SPWN) Potential: Industrial process supply (PRO) Shellfish harvesting (SHELL) Aquaculture (AQUA) Native American Culture (CUL)
002	Groundwater	Existing: Municipal and domestic water supply (MUN) Agricultural supply (AGR) Industrial water supply (IND) American Native Culture (CUL) Potential: Industrial process supply (PRO)

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 Coastal Basin. For the Russian River and its tributaries, no point source waste discharges are allowed from May 15 through September 30 and during all other periods when the waste discharge flow is greater than one percent of the receiving stream's flow. For municipal waste discharged from October 1 through May 14, the discharge must be of advanced treated wastewater, and must meet a median coliform level of 2.2 Most Probable Number (MPN) per 100 milliliters (mL).

Requirements of this Order implement the Basin Plan.

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995, and November 9, 1999. About forty criteria in the NTR applied in California. On May 18,

2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain 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 USEPA 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 USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

4. **Compliance Schedules and Interim Requirements.** The provision in section 2.1 of the SIP that allowed for the use of compliance schedules and interim limitations in an NPDES permit for CTR constituents ended on May 18, 2010. Based on a discharger's request and demonstration that it is infeasible to comply with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in a cease and desist order or time schedule order adopted by the Regional Water Board.

   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 a compliance schedule.

5. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes (40 CFR § 131.21, 65 Fed. Reg. 24641 (April 27, 2000)). Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

6. **Antidegradation Policy.** 40 CFR 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water

Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The 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 CFR 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 CFR 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 CFR 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.

8. **Endangered Species Act.** 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. The Permittee is responsible for meeting all requirements of the applicable Endangered Species Act.

C. Impaired Water Bodies on CWA 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, to USEPA by April of each even numbered year. 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) for each 303(d) listed pollutant and water body contaminant. 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 October 11, 2011, the USEPA provided final approval of the 2008-2010 303(d) list of impaired water bodies prepared by the State. The list identifies the entire Russian River watershed as impaired by excess sediment and elevated water temperatures. Pursuant to CWA section 303(d), TMDLs are developed to address impairing pollutants in 303(d) listed waters, and are then implemented in part through provisions of NPDES permits.

Aspects of the sediment impairing the Russian River include settleable solids, suspended solids, and turbidity. The impact of settleable solids results when they collect on the bottom of a waterbody over time, making them a persistent or accumulative constituent. The impact of suspended solids and turbidity, by contrast, results from their concentration in the water column.

An analysis of the Permittee's effluent monitoring data indicates levels of BOD_5, TSS, and settleable solids in the effluent are generally less than the effluent limitations required by this Order. Thus, the discharge does not typically contain sediment (e.g., settleable solids, suspended solids, and turbidity) at levels which will cause, have the reasonable potential to cause, or contribute to increases in sediment levels in the Russian River. This finding is based, in part, on the advanced level of treatment provided by the Facility during discharges to surface waters, which removes settleable solids and reduces total suspended solids and turbidity to negligible levels. This finding is also supported by the summer discharge prohibition, the one percent flow limitation for the winter discharge, and previous solids and turbidity monitoring that has demonstrated that the Facility removes settleable solids and turbidity to negligible levels.

D. 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 February 20, 2008 adopted Order No. WQ 2008-0002-EXEC Adopting Amended Monitoring and Reporting Requirements 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 subject to the requirements of Order Nos. 2006-0003-DWQ and WQ 2008-0002-EXEC and any future revisions thereto for operation of its wastewater collection system.

2. The State Water Board Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001, Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities regulates storm water discharges from wastewater treatment facilities with design flows greater than 1.0 mgd unless all storm water is captured and treated and/or disposed of within the facility's NPDES permitted process wastewater or if storm

water is disposed of to evaporation ponds, percolation ponds, or combined sewer systems. Section VI.B.6 of this Fact Sheet discusses the Permittee's compliance with this Order.

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. The Order requires the Permittee to 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 Board, Division of Water Rights, and receive approval for such a change. The State Water Board retains the jurisdictional authority to enforce such 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 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where 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 (Order No. R1-2006-0049), and State Water Board Order WQO No. 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 either not disclosed by the Permittee, or are not reasonably anticipated to be present in the discharge but have not been disclosed by the Permittee. 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 which 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 which 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.

Whether or not the Permittee reasonably contemplates the discharge of a constituent is not relevant. What matters is whether the Permittee disclosed the constituent to the Regional Water Board or whether the presence of the pollutant in the discharge can otherwise be reasonably contemplated by the Regional Water Board at the time of Order adoption.

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

   This prohibition is based on section 13050 of the Water Code, and has been retained from Order No. R1-2006-0049.

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

   This prohibition is based on restrictions on the disposal of sewage sludge found in federal regulations (40 CFR Part 503 (Biosolids), Part 527 and Part 258) and title 27 of the California Code of Regulations (CCR). It has been retained from Order No. R1-2006-0049.

4. **Discharge Prohibition III.D.** The discharge or reclamation use of untreated or partially treated waste from anywhere within the collection, treatment, or disposal systems is prohibited, except as provided for in Attachment D, Standard Provisions (Bypass).

   This prohibition has been retained from the Order No. R1-2006-0049 and is based on the Basin Plan to protect 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 CFR 122.41(m) or an unauthorized discharge which 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, (b) groundwater, or (c) land that creates pollution, contamination, or nuisance, as defined in Water Code section 13050(m) is prohibited.

   This prohibition is retained from Order No. R1-2006-0049 and 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 2006-003-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, groundwater, 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 or under agreement to use by the Permittee is prohibited, except for use for fire suppression as provided in title 22, sections 60307 (a) and (b) of the CCR.

   This prohibition is retained from Order No. R1-2006-0049. 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 or authorized by a permit issued by the State Water Board or another Regional Water Board is prohibited.

   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. **Discharge Prohibition III.H.** The mean daily dry weather flow of waste in excess of 3.01 mgd measured over a period of 30 consecutive days is prohibited.

   This prohibition is retained from the Order No. R1-2006-0049 and is based on the dry weather discharge treatment capacity of the Facility.

9. **Discharge Prohibition III.I.** The discharge of wastewater effluent from the Facility to the Russian River or its tributaries is prohibited during the period of May 15 through September 30 of each year.

   This prohibition is retained from the previous Order, and is required by the Basin Plan. The Basin Plan prohibits discharges to the Russian River and its tributaries during the period of May 15 through September 30 (Chapter 4, North Coastal Basin Discharge Prohibition No. 3). The original intent of this prohibition was to prevent the contribution of wastewater to the baseline flow of the Russian River during the period of the year when the Russian River and its tributaries experience the heaviest water-contact recreation use.

10. **Discharge Prohibition III.J.** During the period from October 1 through May 14, discharges of treated wastewater shall not exceed 1 percent of the flow of the Russian River.

    This prohibition is retained from the previous Order and is required by the Basin Plan (Chapter 4, North Coastal Basin Discharge Prohibition No. 3). The Basin Plan prohibits discharges to the Russian River and its tributaries when the waste discharge flow is greater than one percent of the receiving water's flow.

    Basin Plan Prohibition No. 4 does not specify how compliance with the one-percent flow requirement should be determined. This prohibition, set forth in Provision III.J of this Order, specifies that the discharge may comply with the one percent requirement as a monthly average for the surface water discharge season, provided the Permittee makes a reasonable effort to adjust the discharge of treated wastewater to one percent of the most recent daily flow measurement of the Russian River near Hopland at USGS Gage No. 11462500. This modification provides day-to-day operational flexibility for the Permittee while retaining the intent of the prohibition.

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

    This prohibition is based on section 13375 of the Water Code.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at section 40 CFR 122.44, require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR Part 133 and Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3.

Regulations promulgated in 40 CFR 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) of the CWA)]. Section 301(b)(1)(B) of the CWA requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator.

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR 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 BOD_5, TSS, and pH, as follows:

2. BOD_5 and TSS

a. The 30-day average shall not exceed 30 mg/L.

b. The 7-day average shall not exceed 45 mg/L.

c. The 30-day average percent removal shall not be less than 85%.

3. 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 CFR122.45(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.

4. Applicable Technology-Based Effluent Limitations

The effluent limitations in this Order for BOD_5, TSS, and pH exceed the technology-based requirements for secondary treatment set forth in 40 CFR 133.102. Effluent limitations for pH have been established that also meet the water quality-based requirements set forth in the Basin Plan.

In addition to the minimum, federal technology-based requirements, the Basin Plan requires that discharges of municipal waste "*shall be of advanced treated wastewater in accordance with effluent limitations contained in NPDES permits for each affected discharger, and shall meet a median coliform level of 2.2 MPN/100 mL*" for discharges to the Russian River and its tributaries during October 1 through May 14. This requirement leaves discretion to the Regional Water Board to define advanced wastewater treatment by the implementation of effluent limitations in individual permits.

a. Discharge Point 001 (Discharge to the Russian River)

i. BOD_5 and TSS. For the purpose of applying advanced wastewater treatment requirements on the discharge to the Russian River, effluent limitations for BOD_5 and TSS are established at 10 mg/L as a monthly average and 15 mg/L as a weekly average, which are technically achievable based on the capability of a tertiary treatment system. In addition, 40 CFR 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. These effluent limitations are retained from Order No. R1-2006-0049.

ii. pH. The secondary treatment regulations at 40 CFR 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 required to meet the water quality objective for hydrogen ion concentration (pH) in the Russian River is contained in the Basin Plan, Table 3-1.

iii. Turbidity. The proposed turbidity requirements are based on the definition of filtered wastewater found in title 22 section 60301.320 of the CCR. The title 22 definition is used as a reasonable performance

standard to ensure adequate removal of turbidity upstream of disinfection facilities. Properly designed and operated effluent filters will meet this standard regardless of whether the final use is water recycling or discharge to surface water. The point of compliance for the turbidity requirements is a point following the effluent filters and before discharge to the disinfection system. The proposed limitation specifies that the turbidity of the filtered wastewater not exceed an average of 2 NTU within a 24-hour period, 5 NTU more than 5 percent of the time within a 24-hour period, and 10 NTU at any time. This performance standard is consistent with the title 22 definition of filtered wastewater.

iv. **Mass-Based Effluent Limitations.** Mass-based effluent limitations for BOD_5 and TSS are required pursuant to 40 CFR 122.45(f) for the purpose of assuring that dilution is not used as a method of achieving the concentration limitations in the permit. Mass-based effluent limitations established in the Order are technology-based. TSS mass-based effluent limitations are based on the Facility's design . capacity of the AWT filtration system of 7.0 mgd. and are retained from the previous permit.

v. **Total Coliform Bacteria.** Even though effluent limits for coliform bacteria are not set out in the federal regulations for secondary treatment, they are included here in the section on technology-based effluent limits because they reflect technology standards for tertiary treatment. Coliform bacteria are a pollutant of concern in all wastewaters of domestic origin, and therefore, the Order retains the effluent limitations for total coliform bacteria from Order No. R1-2006-0049. These effluent limitations reflect standards for tertiary treated effluent in the Basin Plan (Section 4, Implementation Plans) and utilize the definition of tertiary treated recycled water adopted by the California Department of Public Health (CDPH) in title 22 of the CCR.

b. Discharge Point 002 (Discharge to Percolation Ponds)

i. **BOD_5 and TSS.** Federal regulations at 40 CFR Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD_5 and TSS. This Order includes effluent limitations for BOD_5 and TSS consistent with the secondary treatment requirements established in 40 CFR Part 133. A daily maximum effluent limitation for BOD_5 and TSS is also included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities. In addition, 40 CFR 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be

less than 85 percent. This Order contains a limitation requiring an average of 85 percent removal of BOD_5 and TSS over each calendar month.

ii. **pH.** The secondary treatment regulations at 40 CFR Part 133 require that pH be maintained between 6.0 and 9.0 standard units. This Order includes effluent limitations for pH consistent with the secondary treatment requirements established in 40 CFR Part 133.

iii. **Total Coliform Bacteria.** Even though effluent limits for coliform bacteria are not set out in the federal regulations for secondary treatment, they are included here in the section on technology-based effluent limits because they reflect technology standards for secondary treatment. Coliform bacteria are a pollutant of concern in all wastewaters of domestic origin, and therefore, the Order retains the effluent limitations for total coliform bacteria from Order No. R1-2006-0049. These effluent limitations reflect standards for secondary treated recycled water as adopted by the CDPH in title 22 of the CCR.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

Section 301(b) of the CWA and 40 CFR122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as technology equivalence requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of advanced wastewater treatment, is discussed in section IV.B.4 of the Fact Sheet. In addition, this Order contains additional requirements to meet applicable water quality standards. The rationale for these requirements is discussed in this Fact Sheet.

40 CFR 122.44(d)(1)(i) 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. A reasonable potential analysis (RPA) demonstrated reasonable potential for discharges from the Facility to cause or contribute to exceedances of ammonia (and nitrate), copper, cyanide, and 2,3,7,8-TCDD. Bis(2-ethylhexyl)phthalate was detected above the most stringent water quality objective one time and the other sample was an estimated value, but may be present as a result of contamination from plastic sampling equipment as discussed further in section IV.C.3.b of this Fact Sheet. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance

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

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

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. Beneficial Uses. Beneficial use designations for receiving waters for discharges from the Facility are presented in section III.B.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, and includes the Russian River and its tributaries. For waters designated for use as domestic or municipal supply (MUN), the Basin Plan establishes as applicable water quality criteria the Maximum Contaminant Levels (MCLs) established by CDPH 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 California Toxics Rule (CTR), established by the USEPA at 40 CFR 131.38; and the National Toxics Rule (NTR), established by the USEPA at 40 CFR 131.36. Criteria for most of the 126 priority pollutants are contained within the CTR and the NTR.

d. 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, and for the calculation of effluent limitations for copper.

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 Russian River has the beneficial use designation of municipal and domestic supply. Effluent limitations were established for 2,3,7,8-TCDD and nitrate based on criteria for the protection of human health.

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

At title 22, division 4, chapter 15 of the CCR, CDPH 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.

Attachment F-1 includes a summary of RPA results for all priority toxic pollutants and ammonia, nitrate, and phosphorus, with water quality criteria/objectives that are applicable to the Russian River.

3. Determining the Need for WQBELs

NPDES regulations at 40 CFR 122.44 (d) require effluent limitations to control all pollutants which 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.

a. Non-Priority Pollutants

i. **pH.** The effluent limitation for pH of 6.5 to 8.5 is retained from Order No. R1-2005-0084 and applies to discharges to the Russian River. This limitation is based on the water quality objective for all surface waters of the North Coast Region established in Chapter 3 of the Basin Plan. Federal technology-based requirements prescribed in 40 CFR 133 are not sufficient to meet these Basin Plan water quality standards.

ii. **Chlorine Residual.** 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.”* The Regional Water Board considers any chlorinated discharge as having the reasonable potential to cause or contribute to exceedances of this water quality objective for toxicity, and therefore, the Order establishes effluent

limitations for chlorine. USEPA has established the following criteria for chlorine-produced oxidants for protection of freshwater aquatic life. [*Quality Criteria for Water 1986* (The Gold Book, 1986, EPA 440/5/-86-001)]

Chronic Criterion	Acute Criterion
0.011 mg/L	0.019 mg/L

Order No. R1-2006-0049 required that there be no detectable level of total chlorine in the effluent to the Russian River using an analytical method or chlorine analyzer with a minimum detection level of 0.1 mg/L. This Order revises effluent limitations for chlorine residual to be consistent with the water quality criteria, which are below current analytical detection limits. The water quality criteria recommended by USEPA have been translated to average monthly and maximum daily effluent limitations for total chlorine residual. The new chlorine residual effluent limitations established in this Order are numerically lower than the minimum detection limit for the final effluent limitation in the previous Order that required no detectable level of chlorine in effluent at the point of discharge at a detection limit of 0.1 mg/L.

iii. **Ammonia and Nitrate.** Untreated domestic wastewater contains ammonia. 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. Wastewater treatment facilities commonly use nitrification to remove ammonia from the waste stream and denitrification to remove nitrate from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving water and inadequate or incomplete denitrification may result in the discharge of nitrate to the receiving water. The Facility achieves varying levels of nitrification and denitrification throughout the year. Sampling data for ammonia and nitrate reveals an annual pattern of nitrification and denitrification, with lower concentrations during the winter, moderate concentrations during the summer, and higher concentrations during transition periods. Treatment plants such as this Facility often experience minimal nitrification in the winter, full nitrification and denitrification during the warm season, and full nitrification but limited denitrification during transition periods. As discussed in the following two paragraphs, effluent limitations for ammonia and nitrate are included in the Order to assure that the Permittee protects the beneficial uses of the receiving waters and to prevent aquatic toxicity.

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 CDPH for the protection of public water supplies at title 22 of the CCR, section 64431 (Inorganic Chemicals) and

64444 (Organic Chemicals). The MCL for nitrate (10 mg/L as N) is therefore applicable as a water quality criterion for the Russian River.

Monitoring results from 61 samples collected between February 2007 and January 2012 showed nitrate concentrations that ranged between <0.2 mg/L as N and 13 mg/L as N and an average nitrate concentration of 3.8 mg/L as N. The maximum concentration of 13 mg/L as N occurred in January 3 and 11, 2012 and six sample results exceeded 10 mg/L. Because nitrate levels in the effluent have been measured at concentrations greater than 10 mg/L as N, the Regional Water Board concludes that discharges from the Facility have a reasonable potential to cause or contribute to exceedances of applicable water quality criteria for the receiving water. The Order therefore establishes effluent limitations for nitrate for the protection of human health.

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.*" Discharges of toxic concentrations of ammonia would violate the Basin Plan narrative toxicity objective. Due to concerns regarding ammonia toxicity, the Regional Water Board relies on USEPA's recommended water quality criteria for ammonia in fresh water from the 1999 Update of Ambient Water Quality Criteria for Ammonia, EPA-822-R-99-014 (1999) to interpret the Basin Plan's narrative objective for toxicity. USEPA has recommended acute and chronic water quality criteria for the protection of aquatic life, which are dependent on receiving water pH and the presence/absence of salmonids (acute criteria), and pH, temperature, and the presence/absence of early life stages of fish (chronic criteria). EPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature.

Since the Russian River is a salmonid stream, only the formulas and tables summarizing calculations from these formulas are presented in the discussion below.

The thirty-day average concentration of total ammonia (in mg/L N in effluent) shall not exceed the continuous concentration criteria (CCC or chronic criterion), applied here as the AMEL, calculated using the following equation:

When fish early life stages are present:

(a) CCC = $((0.0577/(1 + 10^{7.688-pH})) + (2.487/(1 + 10^{pH-7.688})) \times MIN (2.85, 1.45 \cdot 10^{0.028 \cdot (25-T)})$

Calculated chronic criteria are summarized in Table F-5, below.

Table F-5. USEPA Acute (30-day average) Criteria for Ammonia

Continuous Concentration Criteria for Fish Early Life Stages Present, 30-day average (mg N/L)											
pH	**Temperature, °C**										
	0	**14**	**15**	**16**	**18**	**20**	**22**	**24**	**26**	**28**	**30**
6.5	6.67	6.67	6.46	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	6.36	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	6.25	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	6.10	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.93	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.73	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.49	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	5.22	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.92	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.59	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	4.23	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.85	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.47	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	3.09	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.71	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.36	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.90
8.1	2.10	2.10	2.03	1.91	1.68	1.47	1.29	1.14	1.00	0.88	0.77
8.2	1.79	1.79	1.74	1.63	1.43	1.26	1.11	0.97	0.86	0.75	0.66
8.3	1.52	1.52	1.48	1.39	1.22	1.07	0.94	0.83	0.73	0.64	0.56
8.4	1.29	1.29	1.25	1.17	1.03	0.91	0.80	0.70	0.62	0.54	0.48
8.5	1.09	1.09	1.06	0.99	0.87	0.76	0.67	0.59	0.52	0.46	0.40
8.6	0.92	0.92	0.89	0.84	0.73	0.65	0.57	0.50	0.44	0.39	0.34
8.7	0.78	0.78	0.75	0.71	0.62	0.55	0.48	0.42	0.37	0.33	0.29
8.8	0.66	0.66	0.64	0.60	0.53	0.46	0.41	0.36	0.32	0.28	0.24
8.9	0.56	0.56	0.55	0.51	0.45	0.40	0.35	0.31	0.27	0.24	0.21
9.0	0.49	0.49	0.47	0.44	0.39	0.34	0.30	0.26	0.23	0.20	0.18

For example, receiving water conditions of a pH of 7.8, a temperature of 18 °C, and fish early life stages present would have a chronic ammonia effluent limitation of 2.54 mg/L.

The one-hour average concentration of total ammonia nitrogen (in mg/L N) where salmonid fish are present shall not exceed the continuous maximum

concentration (CMC or acute criterion), applied here as the MDEL, as calculated using the following equations:

(b) Where salmonid fish are present:

$$CMC = (0.275/(1 + 10^{7.204-pH})) + (39.0/(1 + 10^{pH-7.204}))$$

Calculated acute criteria are summarized in Table F-6, below.

Table F-6. USEPA Chronic (1-hour average) Criteria for Ammonia

Criteria Maximum Concentration, 1-hour average, (mg N/L)	
pH	**Salmonids Present**
6.5	32.6
6.6	31.3
6.7	29.8
6.8	28.0
6.9	26.2
7.0	24.1
7.1	21.9
7.2	19.7
7.3	17.5
7.4	15.3
7.5	13.3
7.6	11.4
7.7	9.6
7.8	8.1
7.9	6.8
8.0	5.6
8.1	4.6
8.2	3.8
8.3	3.1
8.4	2.6
8.5	2.1
8.6	1.8
8.7	1.5
8.8	1.2
8.9	1.0
9.0	0.9

For example, receiving water conditions with a pH of 7.8 and the presence of salmonid fish would have an acute limitation for ammonia of 8.1 mg/L.

Total Ammonia Reasonable Potential Analysis.

In conditions documented in the receiving water for discharges from the Facility (maximum downstream pH=7.9 for the acute condition and average downstream temperature=12.3°C and average downstream pH of 7.68 for the chronic condition) and the known presence of early life stages of fish in the Russian River, to which the Facility discharges, USEPA's recommended chronic and acute criteria for the protection of aquatic life from ammonia toxicity are 3.5 mg/L and 6.8 mg/L total ammonia, respectively, expressed as N. The Discharger monitored the discharge to the Russian River 61 times between February 2007 and January 2012. The monitoring data shows a range of ammonia concentrations between 1.8 and 20 mg/L and an average total ammonia concentration of 7.7 mg/L. The maximum concentration of 12 mg/L occurred on March 14, 2007.

Because ammonia has been measured in the effluent at concentrations greater than USEPA's recommended water quality criteria for fresh waters, 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. The Order therefore establishes final effluent limitations for ammonia for the protection of aquatic life. USEPA requires discrete final effluent limitations rather than floating limits (limits determined based on the receiving water pH and temperature at the time of the sampling event) for total ammonia therefore, discrete effluent limitations for ammonia are included in the Order.

iv. Phosphorus. 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 waters in the North Coast Region. Nutrients, such as phosphorus and nitrogen containing compounds, in treated wastewater stimulate biological growth, thereby depleting dissolved oxygen and advancing eutrophication of receiving waters. At present, for interpretation of the Basin Plan's narrative water quality objective for biostimulatory substances, USEPA has established recommended water quality criteria for nutrients in Nutrient Criteria Documents for Lakes and Rivers and Nutrient Criteria Documents for Rivers and Streams. USEPA has defined 14 "ecoregions" and further categorized surface waters as lakes and reservoirs or rivers and streams for purposes of defining applicable numeric water quality criteria for nutrients. The State and Regional Water Boards continue to examine other methods of interpreting the Basin Plan's narrative water quality objective for biostimulatory substances. When the Boards determine that USEPA's recommended criteria are appropriate for implementing the Basin Plan objectives, or when a more appropriate and meaningful method is

established, the need for limiting nutrients in relation to biostimulatory properties, including phosphorus and nitrogen-containing compounds, in all discharges in the Region will be reassessed. In the meantime, the RPA for nutrients in relation to biostimulatory properties, performed for development of this Order, is inconclusive. The Order establishes monitoring requirements for phosphorus and nitrogen containing compounds in discharges from the Facility to allow a determination of "reasonable potential" at such time as the State and Regional Water Boards select an appropriate method for interpretation of the Basin Plan's narrative objective.

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. For this RPA, the Regional Water Board has used effluent and receiving water monitoring data generated for CTR pollutants from individual samples collected on January 11, 2011 and January 28, 2011. Additional copper, dichlorobromomethane, chlorodibromomethane, bromoform, and chloroform data collected during the term of the previous permit from February 2007 through January 2012 was also used in conducting the RPA.

Hardness

The California Toxics Rule and the National Toxics Rule contain water quality criteria for seven metals that vary as a function of hardness, the lower the hardness, the lower the water quality criteria. The hardness-dependent metal criteria include cadmium, copper, chromium (III), lead, nickel, silver, and zinc.

Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. Effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions. The SIP does not address how to determine hardness for application to the equations for the protection of aquatic life when using hardness-dependent metals criteria. It simply states, in Section 1.2, that the criteria shall be properly adjusted for hardness using the hardness of the receiving water. The CTR requires that, for waters with a hardness of 400 mg/L (as $CaCO_3$), or less, the actual ambient hardness of the surface water must be used. It further requires that the hardness values used must be consistent with

the design discharge conditions for design flows and mixing zones (See 40 CFR 131.38(c)(4)(i)). The CTR does not define whether the term "ambient", as applied in the regulations, necessarily requires the consideration of the upstream as opposed to downstream hardness conditions.

State Water Board Order No. WQ-2008-0008 (City of Davis) further interpreted the SIP by stating "…*the regional water boards have considerable discretion in the selection of hardness. Regardless of which method is used for determining hardness, the selection must be protective of water quality criteria, given the flow conditions under which a particular hardness exists….Regardless of the hardness used, the resulting limits must always be protective of water quality under all flow conditions.*"

The point in the receiving water affected by the discharge is downstream of the discharge. As the effluent mixes with the receiving water, the hardness of the receiving water can change. Therefore, where reliable, representative data are available, it is appropriate to use the ambient hardness downstream of the discharge that is a mixture of the effluent and receiving water for the determination of the CTR hardness-dependent metals criteria.

A 2006 Study (*Emerick, R.W.; Booroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations,* WEFTEC, Chicago, Ill.) demonstrates that using the lowest recorded receiving water hardness for establishing water quality criteria is not always protective of the receiving water under various mixing conditions (e.g., when the effluent hardness is less than the receiving water hardness).

The 2006 study evaluated the relationships between hardness and the CTR metals criterion that is calculated using the CTR metals equation. The equation describing the total recoverable regulatory criterion, as established in the CTR, is as follows:

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

Where:

WER = water effect ratio
H = Hardness
b = metal- and criterion-specific constant
m = metal- and criterion-specific constant

In accordance with the CTR, the default value for the WER is 1. A discharger-specific WER study must be conducted in order to use a WER value other than

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

The relationship between hardness and the resulting criterion in Equation 1 can exhibit either a downward –facing (i.e., concave downward) or an upward-facing (i.e., concave upward) curve depending on the values of the criterion-specific constants. The curve shapes for acute and chronic criteria for the metals are as follows:

Concave Downward Metals: acute and chronic chromium (III), copper, nickel, and zinc; and chronic cadmium.

For those contaminants where the regulatory criteria exhibit a concave downward relationship as a function of hardness, any mixture of receiving water that is compliant with water quality objectives for that metal and effluent that is compliant with water quality objectives for that metal will always result in a mixture that is compliant with water quality objectives and use of the lowest recorded effluent hardness for establishment of water quality objectives is fully protective of all beneficial uses regardless of whether the effluent or receiving water hardness is higher. Use of the lowest recorded effluent hardness is also protective under all possible mixing conditions between the effluent and the receiving water (i.e., from high dilution to no dilution).

Because this Order requires compliance with effluent limitations at the end of the discharge pipe, effluent hardness is an appropriate and protective hardness to use in adjusting the water quality criteria for the concave downward metals. The reasonable worst-case ambient hardness can be estimated by using the lowest effluent hardness. Copper is the only concave-downward metal that exhibits reasonable potential. The water quality criteria for copper was calculated for this Order using Equation 1 and a reported minimum effluent hardness of 94 mg/L as $CaCO_3$, based on 16 effluent hardness measurements obtained by the Permittee between March 2007 and January 2012. The maximum effluent hardness measurement during that time period was 142 mg/L and the average of the 16 measurements was 117 mg/L. In addition, the Permittee submitted a water effects ratio (WER) study that was reviewed by Regional Water Board staff. The WER value used in equation 1 was 5.33 to determine the water quality criteria for copper.

Concave Upward Metals: cadmium (acute), lead, and silver (acute).

For Concave Upward Metals, the 2006 Study demonstrates that due to a different relationship between hardness and the metals criteria, the effluent and upstream receiving water can be in compliance with the CTR criteria, but the resulting mixture may be out of compliance. The 2006 Study provides a mathematical approach to calculate the final effluent limitations for Concave Upward Metals that is protective of aquatic life in all areas of the receiving water affected by the discharge, under all discharge and receiving water flow (see Equation 2, below).

To be consistent with this methodology, the reasonable worst-case upstream receiving water hardness, the lowest observed effluent hardness, and assuming no receiving water assimilative capacity for metals (i.e., ambient background metals concentrations are at their respective CTR criterion), was used in Equation 4 for determining whether reasonable potential exists for the Concave Upward hardness-based metals. Equation 2 is not used in place of the CTR equation (Equation 1). Rather, Equation 2, which is derived using the CTR equation, is used as a direct approach for calculating the ECA. The CTR equation has been used to evaluate the receiving water downstream of the discharge at all discharge and flow conditions to ensure the ECA is protective.

$$\text{ECA} = \left(\frac{m\left(H_e - H_{rw}\right)\left(e^{m\{\ln(H_{rw})\}+b}\right)}{H_{rw}} \right) + e^{m\{\ln(H_{rw})\}+b} \qquad \text{(Equation 2)}$$

Where:

m, b	=	criterion specific constants (from CTR)
H_e	=	lowest observed effluent hardness
H_{rw}	=	reasonable worst-case upstream receiving water hardness

The lowest effluent hardness is 94 mg/L, while the upstream receiving water hardness ranged from 67 mg/L to 100 mg/L as $CaCO_3$. In this case, the reasonable worst-case upstream receiving water hardness to use in Equation 2 to calculate the ECA is 67 ug/L. Using the procedures discussed above to calculate the ECA for all Concave Up Metals will result in WQBELs that are protective under all potential effluent receiving water conditions (high flow to low flow) and under all known hardness conditions

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.

Reasonable Potential Determination

The RPA demonstrated reasonable potential for discharges from the Facility to cause or contribute to exceedances of applicable water quality criteria for coppercyanide, dichlorobromomethane, 2,3,7,8-TCDD, and ammonia. 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 the remainder of the 126 priority pollutants.

During the term of Order No. R1-2006-0049, the Permittee upgraded the treatment system and was able to comply with the final effluent limitations for nitrate from February 2007 through December, and the Permittee submitted a report to the Regional Water Board Executive Officer on November 19, 2010 stating that it had achieved compliance with the final nitrate effluent limitation of 10 mg/L as N. However, in January 2012, the Permittee exceeded the final average monthly effluent limitation for nitrate of 10 mg/L. In addition, this Order contains new effluent limitations for ammonia. As discussed previously, as the Permittee seeks to control the discharge of nitrogen compounds that include ammonia and nitrate, it is anticipated that the Permittee may exceed the water quality objectives for nitrate. Therefore, the Regional Water Board has determined reasonable potential continues to exist for nitrate until such time that the Permittee implements a plan to comply with ammonia and nitrate together.

The following table summarizes the RPA for each priority pollutant that was reported in detectable concentrations in the effluent or the receiving water (detected values are indicated in bold type). The MECs, most stringent water quality objectives/water quality criteria (WQO/WQC), 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-7. Summary of Reasonable Potential Analysis Results

CTR #	Priority Pollutants	C or Most Stringent WQO/WQC (µg/L)	MEC or Minimum DL (µg/L)[7]	B or Minimum DL (µg/L)[7]	RPA Results[8]
2	Arsenic	10	<0.3	0.37	No
5a	Chromium III	149	<10	2.8	No
5b	Chromium VI	11	5.6	<10	No
6	Copper[9]	47.2	60	32	Yes (Trigger 1)
8	Mercury	0.050	0.0016	0.005	No
9	Nickel	37	<10	<10	No
13	Zinc	85	19	<10	No
14	Cyanide	5.2	12	2	Yes (Trigger 1)
16	2,3,7,8-TCDD	1.3E-08	0.0000013	0.00000093	Yes (Trigger 1)
26	Chloroform	---	3.43	--	Ud (No Criteria)
27	Dichlorobromomethane	0.56	2.3	<0.48	Yes
39	Toluene	150	0.61	<0.30	No
68	Bis(2-Ethylhexyl)Phthalate	1.8	34	--	Yes (Trigger 1)[10]
--	Total Trihalomethanes[11]	80	1.2	---	No
--	Ammonia	3.5	20	0.88	Yes (Trigger 1)
--	Nitrate (as N)	10,000	13,000	670	Yes[12]

[7] 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).

[8] RPA Results:
= Yes, if MEC > WQO/WQC, or B > WQO/WQC and MEC is detected;
= No, if MEC and B are < WQO/WQC or all effluent data are undetected;
= Undetermined (Ud).

[9] Water Quality Criteria for copper is based on an effluent hardness concentration of 94 mg/L and has been converted to total recoverable copper fraction using conversion factors in the CTR and a water effect ratio of 5.33.

[10] Bis(2-ethylhexyl)phthalate may be present as a result of contamination from plastic sampling equipment. Additional monitoring is included in the MRP to assess the occurrence of bis(2-ethylhexyl)phthalate.

[11] Total Trihalomethanes means the sum of the trihalomethane compounds dichlorobromomethane, chloroform, dibromochloromethane, and bromoform (CCR, title 22, section 64401.92).

[12] As detailed in the narrative discussion in section IV.C.3.a.iii of this Fact Sheet, reasonable potential for the discharge to exceed the water quality objective for nitrate is further assumed due to the relationship with

Additional details regarding each of constituents for which reasonable potential was found are included in the following paragraphs.

Copper. Effluent monitoring data submitted by the Permittee showed concentrations of total recoverable copper ranging from 8.6 ug/L to 60 ug/L. The Permittee conducted a water effects ratio (WER) study to develop a site-specific WER to use in determining the water quality criteria at the point of discharge to the Russian River that is protective of aquatic life criteria. The WER Study report was submitted to the Regional Water Board on January 27, 2012 and established a WER of 5.33 based on the results of the WER study. Regional Water Board staff reviewed the WER Study report and concurs with the results of the WER Study. For purposes of determining reasonable potential, a WER of 5.33 has been used in this Order for calculating CTR criteria for copper. A determination of reasonable potential has been made based on the maximum effluent concentration of 60 ug/L exceeding the most stringent water quality objective of 47.2 ug/L.

Cyanide. Two effluent monitoring samples submitted by the Permittee showed one detected value at a concentration of 12 ug/L. This exceeds the most stringent water quality objective of 5.2 ug/L. A determination of reasonable potential is made due to the fact that the MEC exceeds the applicable water quality objective.

Dichlorobromomethane. Order No. R1-2006-0049 established interim and final effluent limitations for dichlorobromomethane (DCBM) based on the results of a reasonable potential analysis conducted with data collected prior to the adoption of Order No. R1-2006-0049. During the term of Order No. R1-2006-0049, the Permittee modified its chlorine disinfection practices and from December 2006 through March 2012 did not have any detections of DCBM in its effluent. However, DCBM was detected at 2.02 ug/L and 2.30 ug/L in April and May 2012, respectively. Based on this information, the Regional Water Board finds that there is reasonable potential for DCBM.

2,3,7,8-TCDD. Two effluent monitoring samples submitted by the Permittee showed detected values at a maximum concentration of 0.0000013 ug/L. In addition, receiving water monitoring also indicated detectable concentrations of 2,3,7,8-TCDD. This exceeds the most stringent water quality objective of 0.000000013 ug/L. A determination of reasonable potential is made due to the fact that the MEC exceeds the applicable water quality objective.

---

ammonia and the anticipation that nitrate will exceed the most stringent WQO while the Permittee adjusts the treatment system to achieve compliance with the final limitations for ammonia.

Bis(2-ethylhexyl)phthalate. Two effluent monitoring samples submitted by the Permittee showed one detected value at a concentration of 34 ug/L. The other sample was an estimated value. This exceeds the most stringent water quality objective of 1.8 ug/L. However, sample contamination can result in detection of bis(2-ethylhexyl)phthalate where the parameter may not be present in concentrations to exceed water quality objectives. In order to determine if there is in fact reasonable potential, monitoring is being required along with a provision that allows the permit to be reopened if sample results determine that reasonable potential does exist.

4. WQBEL Calculations

Final WQBELs for copper, cyanide, and 2,3,7,8 TCDD have been determined using the methods described in Section 1.4 of the SIP.

Step 1: For each priority pollutant that demonstrate reasonable potential, identify the applicable water quality criterion/objectives for the pollutant(s), and adjust the criterion or objective, if applicable. This step is described in sections IV.C.3.b and IV.C.3.c, above.

Step 2: 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 receiving water hardness and expressed as the total recoverable metal, if necessary)

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

B = the background concentration

Because no credit for dilution is being allowed, D=0, and the ECA is equal to the applicable criterion (ECA = C).

Step 3: For each ECA based on an aquatic life criterion/objective (i.e., copper and cyanide), 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.

From Table 1 of the SIP, the acute and chronic ECA multipliers for calculating LTAs at the 99th percentile occurrence probability for copper, and cyanide are shown in the table below. The LTAs are determined as follows.

Table F-8. Determination of Long Term Averages

Pollutant	ECA		ECA Multiplier		LTA (µg/L)	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Copper	70	47.2	0.321	0.527	22.6	24.87
Cyanide	22	5.2	0.321	0.527	7.06	2.74

Step 4: WQBELs, including an average monthly effluent limitation (AMEL) and a maximum daily effluent limitation (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 for each of the pollutants is set equal to 0.60, respectively, and the sampling frequency is set equal to 4 (n = 4). 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 multipliers and the AMEL multipliers were determined as shown in the table below. Final WQBELs for copper, and cyanide are determined as follows.

Table F-9. Determination of Final WQBELs Based on Aquatic Life Criteria

Pollutant	LTA (µg/L)	MDEL Multiplier	AMEL Multiplier	MDEL (µg/L)	AMEL (µg/L)
Copper	22.6	3.11	1.55	70	35
Cyanide	2.7	3.11	1.55	8.5	4.3

The final effluent limits presented above for copper are based on an effluent hardness of 94 mg/L. The copper effluent limitations were calculated using a water effects ratio of 5.33 and default dissolved-to-total metal translators to convert water quality objectives from dissolved to total recoverable.

Step 5: When the most stringent water quality criterion/objective is a human health criterion/objective (as for DCBM and 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 and the AMEL is equivalent to the ECA. Final WQBELs for DCBM and 2,3,7,8-TCDD are determined as follows.

Table F-10. Determination Final WQBELs Based on Human Health Criteria

Pollutant	Units	ECA	MDEL/AMEL	MDEL	AMEL
Dichlorobromomethane	µg/L	0.56	2.01	1.12	0.56
2,3,7,8-TCDD	µg/L	0.000000013	2.01	0.000000026	0.000000013

5. Whole Effluent Toxicity (WET)

Effluent limitations for whole effluent acute and monitoring triggers for chronic 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 MRP (Attachment E, section V).

The Basin Plan states "… effluent limits based upon acute bioassays of effluent will be prescribed." USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2 "Toxicity Requirements", the USEPA document states that, "In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion, 'no toxics in toxic amounts', applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90 percent survival, 50 percent of the time, based on the monthly median, or 2) less than 70 percent survival, 10 percent of the time, based on any monthly median."

Notification requirements for acute and 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 USEPA 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.

a. Acute Aquatic Toxicity

Consistent with Order No. R1-2006-0049, this Order includes an effluent limitation for acute toxicity. In accordance with the February 1994 USEPA guidance document cited two paragraphs above, effluent limitations for acute toxicity have been included in this Order which require 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 also implements federal guidelines (Regions 9 and 10 Guidelines for Implementing Whole Effluent Toxicity Testing Programs) by requiring dischargers to conduct acute toxicity tests on a fish species and on an invertebrate to determine the most sensitive species. According to the USEPA 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*. The Permittee tests its effluent for acute toxicity using the rainbow trout, *Oncorhynchus mykiss*. During the term of the previous Order, the Permittee consistently maintained compliance with the acute toxicity limitation, with a minimum percent survival of 90 percent, except for one test in February 2007 and one on December 1, 2010 that showed no survival of the test organisms (rainbow trout). The Permittee resampled on December 17, 2010 and December 27, 2010 and demonstrated 100 percent survival in both samples. All subsequent samples have exceeded 90 percent survival, and most tests have shown 100% survival.

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 annual chronic WET monitoring to demonstrate compliance with the narrative toxicity objective.

Seven out of nine of the Permittee's chronic toxicity tests revealed chronic toxicity. The Permittee performed accelerated monitoring as required by MRP No. R1-2006-0049, but has not identified the cause of chronic toxicity.

The Permittee's chronic toxicity testing results are summarized in the table below.

Table F-11. Whole Effluent Chronic Toxicity Monitoring Results

Date	*Selenastrum capricornutum*		*Ceriodaphnia dubia*				*Pimaphales promelas*			
	Growth		Survival		Reproduction		Survival		Growth	
	NOEC	TUc	NOEC	TUc	NOEC	TUc	NOEC	TUc	NOEC	TUc
3/12/2007	100	1	100	1	100	1	---	---	---	---
2/13/08	50	2	100	1	<12.5	>8	---	---	---	---
3/25/08	75	1.3	100	1	<12.5	>8	---	---	---	---
4/8/08	50	2	100	1	50	2	---	---	---	---
6/2/08	12.5	8	100	1	---	---	---	---	---	---
1/27/09	25	4	100	1	12.5	8	---	---	---	---
12/8/09	75	1.3	100	1	75	1.3	75	1.3	---	---
1/9/10	100	1	100	1	---	---	---	---	---	---
1/26/11	75	1.3	100	1	100	1	100	1	100	1

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 a petition for State Water Board review 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.*"

The process to revise the SIP is underway. 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.

However, the State Water Board found in WQO-2003-012 that, while it is not appropriate to include final numeric effluent limitations for chronic toxicity in NPDES permits for POTWs, permits must contain a narrative effluent limitation, numeric benchmarks for triggering accelerated monitoring, rigorous Toxicity Reduction Evaluation (TRE)/Toxicity Identification Evaluation (TIE) conditions, and a reopener to establish numeric effluent limitations for either chronic toxicity or the chemical(s) causing toxicity. This Order includes a reopener that allows the Regional Water Board to reopen the permit and include a numeric chronic toxicity limitation, a new 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 chronic WET testing, as specified in the Monitoring and Reporting Program (Attachment E, section V). Furthermore, Special Provision VI.C.2.a of this Order requires the Permittee to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates a pattern of toxicity exceeding the numeric toxicity monitoring trigger, the Permittee is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE workplan. The numeric toxicity monitoring 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.

Section V.B.9 of the MRP defines the chronic toxicity monitoring trigger as a single sample result of 1.6 TUc and a monthly median of 1.0 TUc, and section V.C.1.g of the MRP requires TUc to be calculated as 100/NOEC for purposes of determining if the Permittee's effluent exceeds the chronic toxicity monitoring trigger. Although the federal requirements may provide for flexibility in determining how to calculate TUc for compliance purposes (e.g., 100/NOEC, 100/IC25, 100/EC25), USEPA Region 9 recommends that effluent limitations and triggers be based on the no observed effect concentration (NOEC) when the permit language and chronic toxicity testing methods incorporate important safeguards that improve the reliability of the

NOEC. These safeguards include the use of a dilution series (testing of a series of effluent concentrations) to verify and quantify a dose-response relationship and a requirement to evaluate specific performance criteria in order to determine the sensitivity of each chronic toxicity test. The goal is to demonstrate that each test is sensitive enough to determine whether or not the effluent is toxic or not.

The use of 100/IC25 or 100/EC25 as methods for calculating chronic toxicity are point estimates that automatically allow for a 25 percent effect before calling an effluent toxic. The Basin Plan has a narrative objective for toxicity that requires that "*all waters 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*." Allowance of a possible 25 percent effect would not meet the Basin Plan's narrative toxicity requirement. In addition, California has historically used the NOEC to regulate chronic toxicity for ocean discharges, thus it is fitting that the same method be used to regulate chronic toxicity in inland surface water discharges.

Because no dilution has been granted for the chronic condition, chronic toxicity testing results exceeding 1.6 chronic toxicity unit (TUc) as a single sample result and 1.0 TUc as a monthly median demonstrates that the discharge is in violation of the narrative toxicity water quality objective.

If accelerated sampling of the discharge demonstrates a pattern of toxicity exceeding the chronic toxicity trigger, the Permittee is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE work plan to determine whether the discharge is contributing chronic toxicity to the receiving water. Special Provision VI.C.2.a.ii requires the Permittee to maintain the TRE Work Plan to ensure 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 provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as requirements for TRE initiation if a pattern of toxicity is demonstrated. The Permittee submitted its Toxicity Reduction Evaluation Workplan on May 7, 2007.

c. Ammonia-related Toxicity

The chronic toxicity test shall be conducted without modifications to eliminate ammonia toxicity. Ammonia toxicity in water is due mostly to its unionized fraction which is primarily a function of the temperature and the pH of the water being tested. As the pH and temperature increase so does the toxicity of a given concentration of ammonia. In static WET tests, the pH in the test

concentrations often increases (drifts) due to the loss of carbon dioxide (CO_2) from the test concentrations as the test chambers are incubated over the test period. This upward drift results in pH values in the test concentrations that often exceed those pH values that could reasonably be expected to be found in the effluent or in the mixing zone under ambient conditions. Unionized ammonia toxicity caused by pH drift is considered to be an artifact of test conditions and is not a true measure of the ammonia toxicity likely to occur as the discharge enters the receiving waters. In order to reduce the occurrence of artifactual unionized ammonia toxicity, it may be necessary to control the pH in toxicity tests, provided 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. This Order authorizes the use of pH control procedures where the procedures are consistent with USEPA methods and do not significantly alter the test water chemistry so as to mask other sources of toxicity.

D. Final Effluent Limitations

1. Satisfaction of Anti-Backsliding Requirements

Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations 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 the previous Order, except for the effluent limitations for DCBM and settleable solids.

In conducting the reasonable potential analysis, settleable solids was detected one time at a level of 0.2 ml/L out of 314 samples analyzed. The single detection occurred on August 14, 2010, during a period of discharge to the percolation ponds, and the settleable solids effluent limitation is applicable for discharges to the Russian River only. The lack of reasonable potential for settleable solids constitutes new information, which permits the removal of effluent limitations consistent with CWA section 402(o)(2)(B). As a result of the RPA, effluent limitations for settleable solids are not included in the proposed Order and anti-backsliding requirements are satisfied.

2. Satisfaction of Antidegradation Policy

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. All effluent limitations, standards, and conditions contained in this Order are at least as (or more) stringent as the effluent limitations in Order No. R1-2006-0049.

With respect to discharges of chlorine residual from Discharge Point 001, new effluent limitations are established in this Order. In the previous Order, the effluent limitation was expressed as no detectable levels of chlorine residual in the discharge, using a method detection limit of 0.1 mg/L. The new limitations are expressed as an average monthly limitation of 0.01 mg/L and a maximum daily limitation of 0.02 mg/L. The new limitations established in the Order are numerically lower than the minimum detection limit for the final effluent limitation of the previous permit that required no detectable level of chlorine in the effluent at the point of discharge. Although no longer expressed as “non-detect”, the newly established effluent limitations are effectively more stringent limitations because the discharge is required to achieve an effluent concentration of chlorine residual that is numerically lower than was required by the previous permit. Thus, anti-backsliding requirements are satisfied for chlorine residual.

3. Satisfaction of Antidegradation Policy

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 the previous Order.

b. Groundwater. The beneficial uses of the underlying ground water are municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply, and aquaculture, and Native American cultural uses. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

State Water Board Resolution No. 68-16, requires, in part, that whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality water will be maintained until it is demonstrated to the state that any changes will be consistent with the maximum benefit to the people of the state, will not unreasonably affect beneficial uses of such water, and will not result in water quality less than prescribed in the policies.

4. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), pH, and the minimum percent removal for BOD_5 and TSS. This Order’s technology-based pollutant restrictions implement the minimum applicable federal technology-based requirements. In addition, this Order contains effluent limitations for BOD_5 and TSS, pH, and total coliform bacteria that are more

stringent than the minimum, federal technology-based requirements and are necessary to achieve tertiary treatment of wastewater, consistent with the Basin Plan's requirements that discharges of municipal wastewater into the Russian River and its tributaries be of advanced treated water. Restrictions on these pollutants are discussed in section IV.B in this Fact Sheet.

WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the SIP, which was approved by USEPA on May 18, 2000. Most beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 CFR 131.21(c)(1). The remaining water quality objectives and beneficial uses implemented by this Order (specifically the addition of the beneficial uses Water Quality Enhancement (WQE), Flood Peak Attenuation/Flood Water Storage (FLD), Wetland Habitat (WET), Native American Culture (CUL), and Subsistence Fishing (FISH)) and the General Objective regarding antidegradation) were approved by USEPA on, March 4, 2005, and are applicable water quality standards pursuant to 40 CFR 131.21(c)(2). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

The Regional Water Board has considered the factors in Water Code section 13263, including the provisions of Water Code section 13241, in establishing these requirements.

Tables F-12 and F-13 summarize all final effluent limitations included in the Order and the basis for their inclusion.

Summary of Final Effluent Limitations - Discharge Points 001 and 002

Table F-12. Summary of Final Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations					Basis[13]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Biochemical Oxygen Demand 5-day @ 20°C (BOD_5)	mg/L	10	15	--	--	--	AWT
	lbs/day (dry-weather)	250	375	--	--	--	
	lbs/day (wet-weather)	330	650	--	--	--	
	% Removal	85	--	--	--	--	CFR
Total Suspended Solids (TSS)	mg/L	10	15	--	--	--	AWT
	lbs/day (dry-weather)	250	375	--	--	--	
	% Removal	85	--	--	--	--	CFR
pH	standard units	--	--	--	6.5	8.5	BP
Copper, Total Recoverable	µg/L	35	--	70	--	--	CTR
Cyanide, Total (as CN)	µg/L	4.3	--	8.5	--	--	CTR
DCBM	µg/L	0.56	---	1.1	---	---	CTR
2,3,7,8-TCDD	pg/L	$1.3E-^{8}$	--	$2.6E-^{8}$	--	--	CTR
Chlorine, Total Residual	mg/L	0.01	--	0.02	--	--	AL

[13] Definitions of acronyms in Tables F-12 and F-13:

AL Based on the *Quality Criteria for Water 1986* (The Gold Book, 1986, EPA 440/5/-86-001) for protection of freshwater aquatic life.

AWT Advanced wastewater treatment

BP Basin Plan

CTR Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.

MCL Based on drinking water maximum contaminant level from title 22

Title 22 Based on title 22, Recycled Water Criteria

Parameter	Units	Effluent Limitations					Basis[13]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Total Coliform Bacteria	MPN/100 mL	---	2.2[14]	23[15]/240[16]	--	--	Title 22
Nitrate (as N)	mg/L	10	--	--	--	--	MCL
Ammonia	mg/L	3.5	--	6.8	--	--	AL
Acute Toxicity	% Survival	--	--	--	--	--	BP

Table F-13. Summary of Final Effluent Limitations – Discharge Point 002

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	30	45	60	--	--	CFR
	% Removal	85	--	--	--	--	CFR
Total Suspended Solids	mg/L	30	45	60	--	--	CFR
	% Removal	85	--	--	--	--	CFR
pH	standard units	--	--	--	6.0	9.0	CFR
Total Coliform Bacteria	MPN/100 mL	--	23	240	--	--	Title 22

E. Interim Effluent Limitations

This section is not applicable to the Permittee since the Order does not contain interim effluent limitations.

F. Land Discharge Specifications

This section is not applicable to the Permittee as treated wastewater is not discharged to or applied to land for the purpose of disposal.

[14] The median concentration shall not exceed a Most Probable Number (MPN) of 2.2 per 100 milliliters, using bacteriological results of the last 7 days for which analyses have been completed.

[15] The number of coliform bacteria shall not exceed a MPN of 23 per 100 milliliters in more than one sample in any 30-day period.

[16] Not to be exceeded in any sample.

G. Reclamation Specifications

This section is not applicable to the Permittee as treated wastewater is not reclaimed at this time.

H. Other Requirements

The Order includes filtration process requirements for the AWT system. These filtration requirements for turbidity have been retained from the previous Order to determine compliance with requirements established at CCR title 22, division 4, chapter 3.

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.

B. Groundwater

1. The beneficial uses of the underlying ground water are municipal and domestic supply, industrial service supply, industrial process supply, agricultural supply, Native American culture, and aquaculture to surface waters.

2. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

3. The Permittee currently conducts semi-annual groundwater monitoring which is being retained in this Order.

4. Discharges from the Facility shall not cause exceedance of applicable water quality objectives or create adverse impacts to beneficial uses of groundwater.

5. The Basin Plan requires that waters designated for use as MUN shall not contain concentrations of chemical constituents in excess of the limits specified in title 22,

division 4, chapter 15, article 4.1, section 64435, and article 5.5, section 64444 of the CCR.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement federal and state requirements. This Monitoring and Reporting Program is provided in Attachment E of this permit. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Facility.

A. Influent Monitoring

Influent monitoring requirements for flow, BOD_5, and TSS are retained from the previous permit, Order No. R1-2006-0049 and are necessary to determine compliance with the Order's 85 percent removal requirement for these parameters. Monitoring for settleable solids is no longer required because effluent monitoring during the term of the previous permit showed consistent removal of settleable solids.

B. Effluent Monitoring

Effluent monitoring requirements are necessary to determine compliance with prohibitions and/or effluent limitations established by the Order. Monitoring at Monitoring Locations EFF-001B and EFF-002 is necessary to demonstrate compliance with technology-based effluent limitations, demonstrate compliance with WQBELs, and demonstrate whether or not the discharge poses reasonable potential for a pollutant to exceed any numeric or narrative water quality objectives.

1. Effluent monitoring requirements for Discharge Point 001 at Monitoring Location EFF-001B (discharges to the Russian River) are the same as monitoring requirements in the previous Order for BOD_5, TSS, pH, chlorine residual, dissolved oxygen, temperature, hardness, turbidity, and copper. Changes in the effluent monitoring requirements for Discharge Point 001 at Monitoring Location EFF-001B are as follows:

a. Effluent monitoring for settleable solids has been removed because effluent monitoring during the term of the previous permit showed consistent removal of settleable solids.

b. Effluent monitoring requirements have been added for bis(2-ethylhexyl)phthalate, effluent hardness, title 22 pollutants, cyanide and 2,3,7,8-TCDD. The requirements for cyanide and 2,3,7,8-TCDD are to demonstrate compliance with new effluent limitations. The requirements for effluent hardness, title 22 pollutants, and for bis(2-ethylhexyl)phthalate are to gather data to determine if

reasonable potential exists and to assist in the reasonable potential analysis in the case of effluent hardness values.

c. Effluent monitoring requirements have been added for specific conductance and total dissolved solids to identify levels of these pollutants for the purpose of evaluating whether there is reasonable potential for the effluent to cause or contribute to exceedances of water quality objectives in groundwater or surface water.

d. The copper monitoring requirement has been changed to require a grab sample rather than a composite sample due to concerns about possible copper interference from the Permittee's composite sampler.

e. Acute toxicity monitoring has been changed to require a 24-hour composite sample rather than a grab sample in order to obtain a sample that represents the flow over the period of a full day.

f. Effluent monitoring frequency has been reduced from weekly to monthly for phosphorus due to the fact that monitoring data collected during the term of the previous permit demonstrated that phosphorus concentrations are consistent over short term periods.

g. A narrative monitoring requirement for chronic toxicity has been added to ensure compliance with the Basin Plan narrative objective for toxicity.

h. The monitoring frequency for the CTR priority pollutant scan has been increased to annual (from one time per permit term) because the Permittee receives wastewater from several industrial facilities as well as leachate from the Ukiah municipal landfill. Sampling one time per permit term is not frequent enough to capture variations in influent quality that may occur over time.

2. Effluent monitoring requirements for Discharge Point 002 at Monitoring Location EFF-002 (discharges to the percolation ponds) are the same as the monitoring requirements in the previous Order BOD_5, TSS, pH, chlorine residual, and total coliform. Changes in the effluent monitoring requirements for Discharge Point 002 at Monitoring Location EFF-002 include the new monthly monitoring requirements for nitrate, ammonia, nitrite, organic nitrogen, total dissolved solids, sodium, chloride, ammonia, and aluminum to determine whether the effluent contains any of these pollutants at levels that could cause or contribute to an exceedance of an applicable water quality objective.

C. Whole Effluent Toxicity Testing Requirements

Whole effluent toxicity (WET) limitations and monitoring requirements are retained from the previous Order and are included in the Order to 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. This Order includes effluent limitations and monitoring requirements for acute toxicity; as well as monitoring requirements for chronic toxicity to assess compliance with the Basin Plan's narrative water quality objective for toxicity.

D. Land Discharge Monitoring Requirements

This section is not applicable to the Permittee as treated wastewater is not discharged to or applied to land for the purpose of disposal.

E. Reclamation Monitoring Requirements

This section is not applicable to the Permittee as treated wastewater is not reclaimed at this time.

F. Receiving Water Monitoring

1. Surface Water

Receiving water monitoring requirements are retained from Order No. R1-2006-0049 with the following changes:

a. Receiving water monitoring for BOD_5, TSS, and DCBM have been removed due to the fact that monitoring during the previous permit term demonstrated that levels of these pollutants in the receiving water are very low or non-detectable and that the effluent discharge does not have reasonable potential to cause or contribute to exceedances of these pollutants in the receiving water.

b. Receiving water monitoring for CTR priority pollutant scan has been removed due to the fact that past CTR monitoring of the receiving water has shown that only a limited number of CTR pollutants are detected at concentrations of concern. The MRP requires, during periods of discharge to the Russian River, monthly monitoring for copper and cyanide, and annual monitoring for 2,3,7,8-TCDD. If future effluent monitoring reveals the presence of additional priority pollutants, the Regional Water Board would require the Permittee to monitor receiving water for those pollutants, either through the issuance of a 13267 technical report request or by modifying the MRP.

c. New monitoring requirements for total dissolved solids (TDS) and specific conductance (SC) have been added to determine compliance with the receiving water limitations for TDS and SC.

2. Groundwater

All groundwater monitoring requirements have been retained from Order No. R1-2006-0049. Monitoring for total coliform has been added to the groundwater monitoring requirements.

G. Other Monitoring Requirements

Monitoring requirements for the filtration process are established in this Order to demonstrate that the disinfection process is providing effective chlorination and that the filtration process is performing in accordance with requirements established at title 22, division 4, chapter 3 of the CCR.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. Federal Standard Provisions

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

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

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.

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 CFR 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 Provisions (Special Provision VI.C.1.a). Conditions that necessitate a major modification of a permit are described in 40 CFR 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, 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 limitation based on that objective.

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. **Nutrients (Special Provision VI.C.1.e).** This Order establishes effluent limitations for total nitrate and monitoring requirements for the effluent and receiving water for nutrients (i.e., ammonia, nitrate, and phosphorus). This provision allows the Regional Water Board to reopen this Order if future monitoring data indicates the need for effluent limitations or more stringent effluent limitations for any of these parameters.

f. **Reclamation Requirements. (Special Provision VI.C.1.f).** This Order may be reopened to include reclamation requirements upon the Permittee's submittal of details regarding the reclamation plan, California Environmental Quality Act document, irrigation management and operations plan, antidegradation analysis, and other information that may be required by the CDPH.

g. **Discharge Rate. (Special Provision VI.C.1.g).** This Order may be reopened to consider an increase in the discharge rate upon the Permittee's demonstration that the discharge is compliant with all effluent limitations and upon submittal of an antidegradation analysis.

h. **Salt and Nutrient Management Plans (Special Provision VI.C.1.h)**. This provision allows the Regional Water Board to reopen this Order if it adopts a regional or subregional salt and nutrient management plan that is applicable to the Permittee.

2. **Special Studies and Additional Monitoring Requirements**

a. **Toxicity Reduction Evaluations (Special Provision VI.C.2.a).** 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. Attachment E of this Order requires chronic toxicity monitoring for demonstration of compliance with the narrative toxicity objective.

In addition to WET monitoring, this provision requires the Permittee to maintain an up-to-date TRE Work Plan for approval by the Executive Officer, to ensure 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 obtained as a result of an accelerated monitoring program.

3. Best Management Practices and Pollution Prevention

a. Pollutant Minimization Plan. Provision VI.C.3.a is included in this Order as required by 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. Provision VI.C.4 is included in this Order because 40 CFR 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 the Order, is an integral part of a well-operated and maintained 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. The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (General Order) on May 2, 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than 1 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.

Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Permittee's collection system is part of the system that is subject to this Order, certain standard provisions are applicable as specified in Provisions VI.A.2.b and VI.C.5 of the Order. The Permittee must comply with both the General Order and this Order. The Permittee and public agencies that are discharging wastewater into the facility were required to obtain enrollment for regulation under the General Order by December 1, 2006. The Permittee has enrolled under the General Order as required.

All NPDES permits for POTWs currently include federally required standard conditions to mitigate discharges (40 CFR 122.41(d)), to report non-compliance (40 CFR 122.41(1)(6) and (7)), and to properly operate and maintain facilities (40 CFR 122.41(e)). This provision is consistent with these federal requirements.

ii. **Sanitary Sewer Overflows.** This Order includes provisions (Provision VI.C.5.(a)(ii), and Attachment D subsection I.C., I.D, V.E, and V.H.) 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. In addition, as an Enrollee under General Order No. 2006-0003-DWQ, the Permittee is required to report SSOs to an online SSO database administered through the California Integrated Water Quality System (CIWQS) and via telefax when the online SSO database is not available. Detailed notification and reporting requirements for SSOs and sewage spills are specified in Attachment E subsection E (Monitoring and Reporting Program). The goal of these provisions is to ensure appropriate and timely response by the Permittee to SSOs to protect public health and water quality.

b. **Source Control Program (Special Provision VI.C.5.b).** The Permittee has a water control ordinance to permit industrial discharges to the system. The Permittee has issued an industrial waste permit to the brewery that requires them to conduct routine monitoring on an annual basis. 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, particularly the brewery if it is determined to be interfering with the proper operation of the Facility.

40 CFR 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 reports that there are no known industrial wastes subject to regulation under the NPDES Pretreatment Program being discharged to the Facility and the average dry weather design 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 conduct an industrial waste survey to identify all non-domestic facilities in the service area that might discharge pollutants that could pass through or interfere with the operation or performance of the Facility and to monitor the influent for priority pollutants. If the results of the industrial waste survey or influent monitoring indicate that a pretreatment program is necessary, pursuant to 40 CFR 403.8(3), the Regional Water Board may reopen this permit to require the Permittee to develop a pretreatment 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, to include, pursuant to Water Code section 13263.3(d)(3), 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. Because the average dry weather design flow of the facility is less than 5.0 mgd, the Order does not require the Permittee to develop a pretreatment program that conforms to federal regulations. However, the proposed Order includes requirements for the Permittee to implement a source identification and reduction program. The Permittee's source identification and reduction program will need to address only those pollutants that continue to be detected at levels that trigger reasonable potential.

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 CFR Parts 257, 258, 501, and 503, and the State Water Board promulgated provisions of title 27, California Code of Regulations. The Permittee has indicated that all screenings, sludges, and solids removed from the liquid waste stream are currently disposed of off-site at a municipal solid waste landfill in accordance with all applicable regulations. See Fact Sheet section II.A for more detail.

d. **Statewide General WDRs for Discharge of Biosolids to Land (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 the land. The discharge of biosolids through land application is not regulated under this Order. Instead, 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.

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 Best Management Practices (BMPs)(Special Provision VI.C.6.a).**
The Permittee has storm water discharges associated with industrial activities, category "ix" as defined in 40 CFR section 122.26(b)(14). The Permittee has submitted a Notice of Intent to the State Water Board pursuant to the Statewide General Permit Program (State Water Board Water Quality Order No. 97-03-DWQ, NPDES General Permit No. CAS000001, Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities). The Permittee has prepared a Storm Water Pollution Prevention Plan (SWPP Plan) describing its storm water discharges, pollution prevention practices and best management practices, and has implemented the provisions of the SWPP Plan.

Storm water that falls northeast of the treatment process area is captured in a basin before it is discharged to surface waters. Storm water that collects in areas around the treatment process is routed to the sludge drying bed (located east of the treatment process area) and returned to the treatment process. Storm water that collects in the remaining part of the Facility is routed to one of two retention basins before it is discharged to surface waters.

7. Compliance Schedules (Special Provision VI.C.7)

This section is not applicable to the Permittee. A compliance schedule for the Permittee to achieve compliance with final effluent limitations for ammonia and nitrate is included in a cease and desist order (CDO). The current CDO is Order No. R1-2012-0069.

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 Ukiah Wastewater Treatment Plant. 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 has notified the Permittee and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through 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 on **June 15, 2012.**

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Regional Water Board at the address above on the cover page of this Order.

To be fully responded to by staff and considered by the Regional Water Board, written comments must be received at the Regional Water Board offices by 5:00 p.m. on **July 13, 2012**.

C. Public Hearing

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

Date:	**August 23, 2012**
Time:	**8:30 a.m**. or as announced in the Regional Water Board's agenda
Location:	**Regional Water Board Hearing Room** **5550 Skylane Boulevard, Suite A** **Santa Rosa, CA 95403**

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

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

D. Waste Discharge Requirements Petitions

Any person affected by this action of the Regional Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with Water Code section 13320 and title 23, section 2050 of the CCR. The petition must be received by the State Water Board within 30 days of the date of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request. In addition to filing a petition with the State Water Board, any person affected by this Order may request the Regional Water Board to reconsider the Order. To be timely, such request must be made within 30 days of the date of this Order. Note that even if reconsideration by the Regional water Board is sought, filing a petition with the State Water Board within the 30-day period is necessary to preserve the petitioner's legal rights. If the Permittee chooses to request reconsideration of this Order or file a petition with the State Water Board, the Permittee must comply with the Order while the request for reconsideration and/or petition is being considered. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

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

E. Information and Copying

The Report of Waste Discharge (ROWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the 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 cgoodwin@waterboards.ca.gov or (707) 576-2687.

ATTACHMENT F-1 RPA Summary

ATTACHMENT F-1
City of Ukiah Reasonable Potential Analysis Summary
May 2012

CTR No.	Constituent	Units	Qualifier	MEC	Qualifier	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
1	Antimony	µg/L	<	1	<	1	6	---	---	14	4,300	6	No
2	Arsenic	µg/L	<	0.3		0.37	50	340	150			50	No
3	Beryllium	µg/L	<	0.2	<	0.2	4	---	---	---	---	4.0	No
4	Cadmium	µg/L	<	0.5	<	0.5	1.8	2.9	1.8	---	---	5.0	No
5a	Chromium (III)	µg/L	<	1		2.8	149	1251	149	---	---	---	No
5b	Chromium (VI) or total Cr	µg/L		5.6	<	5	11	16	11	---	---	50	No
6	Copper	µg/L		60		32	6.6	10	6.6	1300	---	---	**Yes**
7	Lead	µg/L	<	0.6	<	0.6	1.9	49	1.9	---	---	---	No
8	Mercury	µg/L		0.00159		0.00515	0.050	---	---	0.050	0.051	2.0	No
9	Nickel	µg/L	<	3		4	37	334	37	610	4,600	100	No
10	Selenium	µg/L	<	1	<	1	5.0	20	5	---	---	50	No
11	Silver	µg/L	<	2	<	2	2.0	2.0	---	---	---	---	No
12	Thallium	µg/L	<	0.3	<	0.3	1.7	---	---	1.7	6.3	2	No
13	Zinc	µg/L		19	<	10	85	85	85	---	---		No
14	Cyanide	µg/L		12	<	2	5.2	22	5.20	700	220,000	150	**Yes**
15	Asbestos	µg/L	<	0.2	<	0.5	7.0	---	---	7	---	7	No
16	2,3,7,8-TCDD (Dioxin)	µg/L		1.3E-06		0.00000093	1.3E-08	---	---	1.3E-08	1.4E-08	3.0E-05	**Yes**
17	Acrolein	µg/L	<	0.62	<	0.62	320	---	---	320	780	---	No
18	Acrylonitrile	µg/L	<	0.21	<	0.21	0.06	---	---	0.059	0.66	---	No
19	Benzene	µg/L	<	0.23	<	0.23	1.0	---	---	1.2	71	1	No
20	Bromoform	µg/L	<	0.39	<	0.39	4.3	---	---	4.3	360	---	No
21	Carbon Tetrachloride	µg/L	<	0.3	<	0.3	0.25	---	---	0.25	4.4	0.5	No
22	Chlorobenzene	µg/L	<	0.41	<	0.41	70	---	---	680	21,000	70	No
23	Chlorodibromomethane	µg/L	<	0.47	<	0.47	0.40	---	---	0.401	34	---	No
24	Chloroethane	µg/L	<	0.25	<	0.25	No Criteria	---	---	---	---	---	Ud
25	2-Chloroethylvinyl Ether	µg/L	<	0.93	<	0.93	No Criteria	---	---	---	---	---	Ud
26	Chloroform	µg/L		3.43	<	0.41	No Criteria	---	---	---	---	---	Ud
27	Dichlorobromomethane	µg/L		2.3	<	0.48	0.56	---	---	0.56	46	---	**Yes**
28	1,1-Dichloroethane	µg/L	<	0.43	<	0.43	5.0	---	---	---	---	5	No
29	1,2-Dichloroethane	µg/L	<	0.42	<	0.42	0.38	---	---	0.38	99	0.5	No
30	1,1-Dichloroethylene	µg/L	<	0.14	<	0.14	0.057	---	---	0.057	3.2	6	No
31	1,2-Dichloropropane	µg/L	<	0.24	<	0.24	0.52	---	---	0.52	39	5	No
32	1,3-Dichloropropylene	µg/L	<	0.49	<	0.49	0.50	---	---	10	1,700	0.5	No
33	Ethylbenzene	µg/L	<	0.44	<	0.44	300	---	---	3100	29,000	300	No
34	Methyl Bromide	µg/L	<	0.27	<	0.27	48	---	---	48	4,000	---	No

ATTACHMENT F-1
City of Ukiah Reasonable Potential Analysis Summary
May 2012

CTR No.	Constituent	Units											
35	Methyl Chloride	µg/L	<	0.45	<	0.45	No Criteria	---	---	---	---	---	Ud
36	Methylene Chloride	µg/L	<	0.17	<	0.17	4.7	---	---	4.7	1,600	5	No
37	1,1,2,2-Tetrachloroethane	µg/L	<	0.17	<	0.17	0.17	---	---	0.17	11	1	No
38	Tetrachloroethylene	µg/L	<	0.33	<	0.33	0.80	---	---	0.8	8.85	5	No
39	Toluene	µg/L		0.61	<	0.27	150	---	---	6800	200,000	150	No
40	1,2-Trans-Dichloroethylene	µg/L	<	0.48	<	0.48	10	---	---	700	140,000	10	No
41	1,1,1-Trichloroethane	µg/L	<	0.36	<	0.36	200	---	---	---	---	200	No
42	1,1,2-Trichloroethane	µg/L	<	0.49	<	0.49	0.60	---	---	0.6	42	5	No
43	Trichloroethylene	µg/L	<	0.47	<	0.47	2.7	---	---	2.7	81	5	No
44	Vinyl Chloride	µg/L	<	0.32	<	0.32	0.50	---	---	2	525	0.5	No
45	Chlorophenol	µg/L	<	0.66	<	0.66	120	---	---	120	400	---	No
46	2,4-Dichlorophenol	µg/L	<	0.66	<	0.66	93	---	---	93	790	---	No
47	2,4-Dimethylphenol	µg/L	<	1.2	<	1.2	540	---	---	540	2,300	---	No
48	2-Methyl-4,6-Dinitrophenol	µg/L	<	0.75	<	0.75	13	---	---	13.4	765	---	No
49	2,4-Dinitrophenol	µg/L	<	1.3	<	1.3	70	---	---	70	14,000	---	No
50	2-Nitrophenol	µg/L	<	0.9	<	0.9	No Criteria	---	---	---	---	---	Ud
51	4-Nitrophenol	µg/L	<	0.99	<	0.99	No Criteria	---	---	---	---	---	Ud
52	3-Methyl-4-Chlorophenol	µg/L	<	0.58	<	0.58	No Criteria	---	---	---	---	---	Ud
53	Pentachlorophenol	µg/L	<	1.4	<	1.4	0.28	16	12	0.28	8.2	1	No
54	Phenol	µg/L	<	0.46	<	0.46	21,000	---	---	21000	4,600,000	---	No
55	2,4,6-Trichlorophenol	µg/L	<	0.74	<	0.74	2.1	---	---	2.1	6.5	---	No
56	Acenaphthene	µg/L	<	0.57	<	0.57	1,200	---	---	1200	2,700	---	No
57	Acenephthylene	µg/L	<	0.48	<	0.48	No Criteria	---	---	---	---	---	Ud
58	Anthracene	µg/L	<	0.39	<	0.39	9,600	---	---	9600	110,000	---	No
59	Benzidine	µg/L	<	3.4	<	3.4	0.00012	---	---	0.00012	0.00054	---	No
60	Benzo(a)Anthracene	µg/L	<	0.39	<	0.39	0.0044	---	---	0.0044	0.049	---	No
61	Benzo(a)Pyrene	µg/L	<	0.5	<	0.5	0.0044	---	---	0.0044	0.049	0.2	No
62	Benzo(b)Fluoranthene	µg/L	<	0.64	<	0.64	0.0044	---	---	0.0044	0.049	---	No
63	Benzo(ghi)Perylene	µg/L	<	0.93	<	0.93	No Criteria	---	---	---	---	---	Ud
64	Benzo(k)Fluoranthene	µg/L	<	0.34	<	0.34	0.0044	---	---	0.0044	0.049	---	No
65	Bis(2-Chloroethoxy)Methane	µg/L	<	0.81	<	0.81	No Criteria	---	---	---	---	---	Ud
66	Bis(2-Chloroethyl)Ether	µg/L	<	0.14	<	0.14	0.031	---	---	0.031	1.4	---	No
67	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.41	<	0.41	1,400	---	---	1400	170,000	---	No
68	Bis(2-Ethylhexyl)Phthalate	µg/L		34	<	0.83	1.8	---	---	1.8	5.9	4	Yes
69	4-Bromophenyl Phenyl Ether	µg/L	<	0.43	<	0.43	No Criteria	---	---	---	---	---	Ud

ATTACHMENT F-1
City of Ukiah Reasonable Potential Analysis Summary
May 2012

CTR No.	Constituent	Units											
70	Butylbenzyl Phthalate	µg/L	<	0.64	<	0.64	3,000	---	---	3000	5,200	---	No
71	2-Chloronaphthalene	µg/L	<	0.57	<	0.57	1,700	---	---	1700	4,300	---	No
72	4-Chlorophenyl Phenyl Ether	µg/L	<	0.93	<	0.93	No Criteria	---	---	---	---	---	Ud
73	Chrysene	µg/L	<	0.76	<	0.76	0.0044	---	---	0.0044	0.049	---	No
74	Dibenzo(a,h)Anthracene	µg/L	<	0.83	<	0.83	0.0044	---	---	0.0044	0.049	---	No
75	1,2-Dichlorobenzene	µg/L	<	0.61	<	0.61	600	---	---	2700	17,000	600	No
76	1,3-Dichlorobenzene	µg/L	<	0.62	<	0.62	400	---	---	400	2,600	---	No
77	1,4-Dichlorobenzene	µg/L	<	0.61	<	0.61	5.0	---	---	400	2,600	5	No
78	3,3'-Dichlorobenzidine	µg/L	<	2	<	2	0.040	---	---	0.04	0.770	---	No
79	Diethyl Phthalate	µg/L	<	0.86	<	0.86	23,000	---	---	23000	120,000	---	No
80	Dimethyl Phthalate	µg/L	<	0.68	<	0.68	313,000	---	---	313000	2,900,000	---	No
81	Di-n-Butyl Phthalate	µg/L	<	0.91	<	0.91	2,700	---	---	2700	12,000	---	No
82	2,4-Dinitrotoluene	µg/L	<	0.68	<	0.68	0.110	---	---	0.11	9.1	---	No
83	2,6-Dinitrotoluene	µg/L	<	0.54	<	0.54	No Criteria	---	---	---	---	---	Ud
84	Di-n-Octyl Phthalate	µg/L	<	0.65	<	0.65	No Criteria	---	---	---	---	---	Ud
85	1,2-Diphenylhydrazine	µg/L	<	0.33	<	0.33	0.040	---	---	0.04	0.54	---	No
86	Fluoranthene	µg/L	<	0.76	<	0.76	300	---	---	300	370	---	No
87	Fluorene	µg/L	<	0.81	<	0.81	1,300	---	---	1300	14,000	---	No
88	Hexachlorobenzene	µg/L	<	0.89	<	0.89	0.00075	---	---	0.00075	0.00077	1	No
89	Hexachlorobutadiene	µg/L	<	0.84	<	0.84	0.44	---	---	0.44	50	---	No
90	Hexachlorocyclopentadiene	µg/L	<	0.45	<	0.45	50	---	---	240	17,000	50	No
91	Hexachloroethane	µg/L	<	0.58	<	0.58	1.9	---	---	1.9	8.9	---	No
92	Indeno(1,2,3-cd) Pyrene	µg/L	<	0.63	<	0.63	0.0044	---	---	0.0044	0.049	---	No
93	Isophorone	µg/L	<	0.81	<	0.81	8.4	---	---	8.4	600	---	No
94	naphthalene	µg/L	<	0.66	<	0.66	No Criteria	---	---	---	---	---	Ud
95	Nitrobenzene	µg/L	<	0.74	<	0.74	17	---	---	17	1,900	---	No
96	N-Nitrosodimethylamine	µg/L	<	1.1	<	1.1	0.00069	---	---	0.00069	8.1	---	No
97	N-Nitrosodi-n-Propylamine	µg/L	<	0.85	<	0.85	0.0050	---	---	0.005	1.4	---	No
98	N-Nitrosodiphenylamine	µg/L	<	0.9	<	0.9	5.0	---	---	5	16	---	No
99	Phenanthrene	µg/L	<	0.65	<	0.65	No Criteria	---	---	---	---	---	No
100	Pyrene	µg/L	<	0.45	<	0.45	960	---	---	960	11,000	---	No
101	1,2,4-Trichlorobenzene	µg/L	<	0.59	<	0.59	5.0	---	---	---	---	5	No
102	Aldrin	µg/L	<	0.004	<	0.004	0.00013	3	---	0.00013	0.00014	---	No
103	alpha-BHC	µg/L	<	0.002	<	0.002	0.0039	---	---	0.0039	0.013	---	No
104	beta-BHC	µg/L	<	0.002	<	0.002	0.014	---	---	0.014	0.046	---	No

ATTACHMENT F-1
City of Ukiah Reasonable Potential Analysis Summary
May 2012

CTR No.	Constituent	Units											
105	gamma-BHC	µg/L	<	0.002	<	0.002	0.019	0.95	---	0.019	0.063	0.2	No
106	delta-BHC	µg/L	<	0.001	<	0.001	No Criteria	---	---	---	---	---	Ud
107	Chlordane	µg/L	<	0.035	<	0.035	0.00057	2.4	0.0043	0.00057	0.00059	0.1	No
108	4,4-DDT	µg/L	<	0.005	<	0.005	0.00059	1.1	0.001	0.00059	0.00059	---	No
109	4,4-DDE	µg/L	<	0.003	<	0.003	0.00059	---	---	0.00059	0.00059	---	No
110	4,4-DDD	µg/L	<	0.002	<	0.002	0.00083	---	---	0.00083	0.00084	---	No
111	Dieldrin	µg/L	<	0.002	<	0.002	0.00014	0.24	0.056	0.00014	0.00014	---	No
112	alpha-Endosulfan	µg/L	<	0.003	<	0.003	0.056	0.22	0.056	110	240	---	No
113	beta-Endosulfan	µg/L	<	0.002	<	0.002	0.056	0.22	0.056	110	240	---	No
114	Endosulfan Sulfate	µg/L	<	0.002	<	0.002	110	---	---	110	240	---	No
115	Endrin	µg/L	<	0.003	<	0.003	0.036	0.086	0.036	0.76	0.81	2	No
116	Endrin Aldehyde	µg/L	<	0.002	<	0.002	0.76	---	---	0.76	0.81	---	No
117	Heptachlor	µg/L	<	0.002	<	0.002	0.00021	0.52	0.0038	0.00021	0.00021	0.01	No
118	Heptchlor Epoxide	µg/L	<	0.002	<	0.002	0.00010	0.52	0.0038	0.0001	0.00011	0.01	No
119-125	PCBs sum (2)	µg/L	<	0.02	<	0.02	0.00017	---	0.014	0.00017	0.00017	0.5	No
126	Toxaphene	µg/L	<	0.45	<	0.45	0.00020	0.73	0.0002	0.00073	0.00075	3	No
	Total Ammonia	mg/L		20		0.88	4	11.4	2.58	---	---	---	**Yes**
	Nitrate (as N)	mg/L		1300		670	10,000	---	---	---	---	10	**Yes**
	Phosphate (as P)	mg/L					No Criteria	---	---	---	---	---	Ud