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ATTACHMENT F – FACT SHEET

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table 1. Administration Information

WDID	1B830990SON
Discharger	City of Santa Rosa
Name of Facility	Santa Rosa Subregional Water Reclamation Facility
Facility Address	4300 Llano Road Santa Rosa, CA 95407 Sonoma County
Facility Contact, Title and Phone	Miles Ferris, Director of Utilities, (707) 543-3930
Authorized Person to Sign and Submit Reports	Miles Ferris, Director of Utilities
Mailing Address	69 Stony Circle, Santa Rosa, CA 95401
Billing Address	SAME
Type of Facility	POTW
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Y
Reclamation Requirements	Master Reclamation Permit
Facility Permitted Flow	21.34 mgd
Facility Design Flow	21.3 mgd, average dry weather flow 64 mgd, peak weekly wet weather flow 47.3 mgd, peak monthly wet weather flow
Watershed	Russian River
Receiving Water	Laguna de Santa Rosa, Colgan Creek, Santa Rosa Creek
Receiving Water Type	Inland Surface Water

A. The City of Santa Rosa (hereinafter Discharger) is the owner and operator of the Santa Rosa Subregional Water Reclamation Facility (hereinafter Facility), a Publicly Owned Treatment Works (POTW).

B. The Facility discharges wastewater to the Laguna de Santa Rosa, Colgan Creek, and Santa Rosa Creek, waters of the United States, and is currently regulated by Order No. 2000-03 which was adopted on March 15, 2000 and expires on March 15, 2005.

C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on September 15, 2004. On that date, the Discharger also filed separate reports of waste discharge and submitted applications for both Master Water Reclamation Requirements and biosolids land application WDRs. Supplemental Information received on November 18, 2004, March 14, 2005, March 15, 2005, March 16, 2005, and July 6, 2005, September 22, 2005, February 7, 2006, March 6, 2006, March 8, 2006, and April 4, 2006.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

1. The Discharger's wastewater treatment facility (WWTF) treats primarily domestic and industrial wastewater collected via the City of Santa Rosa wastewater collection system. The WWTF also accepts leachate from the Sonoma County Landfill and septage from commercial septage haulers.

2. The Discharger provides wastewater treatment and disposal services for residences, businesses, and industries within the Santa Rosa area and provides service to the communities of Cotati, Rohnert Park, Sebastopol, and the unincorporated South Park County Sanitation District. The WWTF was originally constructed in 1967 and has experienced two major expansions. Expansion in 1977 brought plant treatment capacity to 15 million gallons per day (mgd). Expansion in 1986 brought plant capacity to 18 mgd. The WWTF currently has a design capacity to provide advanced treatment for an average dry flow of 21.3 million gallons per day and to serve an estimated population of 202,500.

3. Treatment consists of raw influent bar screening, grit removal in pre-aeration tanks; sludge and scum removal in primary sedimentation tanks; biological treatment (including nitrogen reduction) with coagulation, flocculation, sedimentation, and clarification; followed by filtration; and ultraviolet light disinfection. Biosolids are thickened by gravity belt thickeners, anaerobically digested, and dewatered in unlined sand drying beds. The dried biosolids are hauled off-site for land application or composted for commercial use.

4. The City's Industrial Waste staff manages a pretreatment program that consists of 1,342 permitted nondomestic dischargers. Thirty of these dischargers are classified as significant industrial users (SIUs), and 20 of the SIUs are categorical industrial users (CIUs). The remaining 1,312 facilities are other regulated nonsignificant nondomestic dischargers that consist of ground water remediation sites, auto shops, restaurants, dry-cleaners, photo processors, and dental offices.

5. The Discharger provides reclaimed water to urban and agricultural use areas. Urban irrigation systems currently are in place at Countryside Estates and Roberts Lake in Rohnert Park and Finley Park in Santa Rosa. Agricultural use areas for which the Discharger provides reclaimed water include approximately 4,300 acres for pasture or fodder crops, 1,400 acres of vineyards, and 120 acres of special-use areas. The Discharger, through a satellite WWTF, the Oakmont Wastewater Treatment Plant (Oakmont WWTP),

distributes water produced at the Oakmont WWTP to the Oakmont Golf Course for golf course irrigation.

6. The Discharger distributes a potion of advanced treated wastewater to the Geysers Recharge project for use by the current owner of the Geysers, Calpine Corporation, for recharge of the steamfields and to generate electricity. The total volume of treated wastewater pumped to the Geysers is stipulated by contract between the Discharger and Calpine Corporation, but a minimum of 4,015 million gallons per year is required to be pumped under conditions of this Order. In 2005, of the 8,060 million gallons of advanced treated wastewater produced by the Discharger, 4,450 million gallons was delivered to the Geysers.

7. This Order authorizes the discharge of advanced treated wastewater from the discharge locations and for the final uses specified in the following section. This Order does not provide permit coverage for the land application of biosolids or the disposal of sludge, solid waste, or biosolids in municipal landfills, or the distribution of recycled water from the Oakwood WWTP, all of which are regulated under separate orders. Master Water Reclamation requirements are included in this Order in an effort to streamline the permitting process for the Discharger's recycled water discharge and because there does not appear to be any tangible benefit to the Discharger or the California Regional Water Quality Control Board, North Coast Region (Regional Water Board) to regulate the discharges under separate permits.

B. Discharge Points and Receiving Waters

1. The WWTF is located at the NE ¼ of Section 17, T6N, R8W, MDB&M, as shown in Attachment B, a part of this Order.

2. Advanced treated wastewater is discharged to surface waters from the following locations:

   002 Arlington Pond. Discharge is through a pipe to a constructed trapezoidal ditch located approximately 550 feet north of the pond. The ditch replaced a natural swale. The ditch bottom has mixed hydrophilic and upland vegetation and connects directly to Colgan Creek. The upstream receiving water monitoring location is located in Colgan Creek (Station 512), immediately upstream of the point of discharge from the ditch to Colgan Creek.

   003 Brown Pond. Discharge is through a pipe onto a rock and concrete rip-rap apron. Flow is directed to a basin that contains cattails and is seasonally ponded. The basin drains to a slight swale, which is, in turn, connected to an unnamed channelized swale. The channelized swale contains wetland vegetation and drains into a wetlands adjacent to the Laguna de Santa Rosa approximately ½ mile southwest of the discharge pipe. The upstream receiving water monitoring location is currently located in the Laguna de Santa Rosa at Todd Road (Station 505), approximately two miles upstream of the wetlands discharge point.

005 LaFranconi Pond. The discharge pipe discharges directly into an unnamed ditch adjacent to LaFranconi Pond and flows in a southwest direction to join an unnamed channelized swale approximately 1,500 feet upstream of the Brown Pond. The upstream receiving water monitoring location for the LaFranconi Pond is currently located in the Laguna de Santa Rosa at Todd Road (Station 505), approximately two miles upstream of the confluence of the channelized swale and the Laguna de Santa Rosa.

006A Meadow Lane Pond D. The discharge is through a pipe into a square concrete flume that empties directly into the ordinary high water mark of the Laguna de Santa Rosa. The discharge is frequently referred to as the "D-Pond Incline Pump," in reference to the incline pump located at the southeast corner of the D Pond. The upstream receiving water monitoring location is located in the Laguna de Santa Rosa (Station 529), 50-100 feet upstream of the D-Pond incline pump.

006B Meadow Lane Pond D. The discharge is through a 36-inch pipe located at the Northwest corner of the D-Pond. Treated effluent is discharged from the storage pond into a rip-rap and concrete lined trapezoidal flume/ditch that empties into the ordinary high water mark of the Laguna de Santa Rosa. Upstream conditions are currently measured in the Laguna de Santa Rosa, at Monitoring Location (Station 529), which is located approximately 1,500 feet upstream of the discharge location, and in Colgan Creek, at Monitoring Location (Station 528), upstream of the confluence with the Laguna de Santa Rosa.

008 West College Pond 1C. The discharge pipe from the pond discharges directly into the ordinary high water mark of Santa Rosa Creek. The upstream receiving water monitoring location is currently located in Santa Rosa Creek (Station 517), approximately 1,200 feet upstream of the discharge point.

009 Ambrosini Pond. The discharge pipe from the pond discharges directly into the ordinary high water mark of Santa Rosa Creek. The upstream receiving water monitoring location is currently located in Santa Rosa Creek (Station 516), immediately upstream of the discharge point.

012A Delta Pond. The discharge is from the blending valve on the 24-inch pipeline located on mid-way along the North side of Delta Pond to the ordinary high water mark of Santa Rosa Creek. Source water for the blending valve can come from the West College mainline, the Laguna mainline, or can be water that has been stored in Delta Pond.

012B Delta Pond. The 48-inch discharge pipe from the pond discharges directly to the confluence of the Laguna de Santa Rosa and Santa Rosa Creek. Upstream receiving water is monitored at two locations, each approximately 2,000 feet upstream of the effluent discharge point.

014 Meadow Lane A Pond. The discharge pipe discharges directly into a constructed trapezoidal ditch adjacent to the Meadow Lane Pond A. The ditch has a pool of standing water and contains cattails and willows. The upstream receiving water monitoring location

is located in the Laguna de Santa Rosa (Station 530), approximately 100 feet upstream of the Llano Bridge Road.

015 Laguna Treatment Plant. The discharge pipe discharges directly into a square concrete flume that drains to a constructed trapezoidal ditch that conveys only wastewater flow from the WWTF. Flow in the ditch is transported approximately 130 feet where it discharges into the Laguna de Santa Rosa. The upstream receiving water monitoring location is located in the Laguna de Santa Rosa (Station 530), approximately100 feet upstream of the Llano Bridge Road.

016 Laguna Joint Wetlands. The discharge pipe discharges directly into the constructed wetlands managed by the Discharger. Overflow from the constructed wetlands is controlled by a valved pipe that is opened, as needed, to maintain the water level in the wetland. Water released from the wetlands flows into a constructed, trapezoidal channel the drains directly into the ordinary high water mark of the Laguna de Santa Rosa.

3. Surface water discharges occur primarily out of Meadow Land Pond (06A, 06B) and Delta Pond (012A, 012B), but discharges from the other ponds have occurred infrequently over the term of the previous permit. A summary of the discharge volumes from permitted discharge locations for the 2000-2004 discharge seasons is presented in the following table:

Table 2. Summary of Discharge Volumes from All Discharge Locations for 2000-2004

Location	Average Daily Discharge	Minimum Daily Discharge	Maximum Daily Discharge	Avg. Number of Months Discharging
001 Alpha Pond [1]	8.5	2.0	21.6	2.8
003 Brown Pond [2]	7.9	0.3	27.5	4.7
004 Kelly Pond	0.7	0.3	4.6	6.6
016 Laguna Joint Wetlands	1.1	0.5	2.7	6.6
06A Meadow Lane Pond D [3]	9.7	3.5	11.7	1.5
06B Meadow Lane Pond D	16.1	0.5	52.1	4.2
012A Delta Pond[4]	2.6	0.3	5.7	1.0
012B Delta Pond [5]	24.1	4.8	69.0	2.0

Notes:
1. All flows are expressed in million gallons (Mgal.)
2. The permitted discharge season is from October 1 to May 14
3. No discharge from Alpha Pond for 2003-2004 discharge season
4. No discharge from Brown Pond for 2002-2003 and 2003-2004 discharge seasons.
5. No discharge from 06A for 1999-2000, 2001-2002, and 2003-2004 discharge seasons.
6. Discharge from 012A only for 1999-2000 discharge season.
7. No discharge from 012B for 2003-2004 discharge season. Calculation excludes data from 2002-2003 when Delta Pond took in water from Laguna de Santa Rosa.

4. Advanced treated wastewater is also discharged to the Geysers steamfields and the Water Reclamation System as authorized by Section IV.C and Attachment G of this Order.

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

1. Effluent limitations contained in the existing Order for discharges from the Laguna Treatment Plant directly to the Laguna de Santa Rosa (Monitoring Location 015) and representative monitoring data from the term of the previous Order are as follows:

Table 3. Summary of Discharge Monitoring Data for 2001-2005

Parameter (units)	Effluent Limitation			Monitoring Data (From January 2001 – December 2005)		
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
BOD_5 (mg/l)	10	15	20	4.1	6.0	9.0
BOD_5 (lb/d)	1,776	2,277	3,552	668	2,294	3,884
BOD_5 (% removal) [1]	85	---	---	98.7%	---	---
Suspended Solids (mg/l)	10	15	20	2.0	2.7	7.0
Suspended Solids (lb/d)	1,776	2,277	3,552	543	883	2,658
Suspended Solids (% Removal) [1]	85	---	---	98.8%	---	---
Total Coliform Bacteria (MPN/ 100 ml)	---	2.2 [2]	23 [3]	---	4 [2]	130
Turbidity (NTU)	2	---	5	1.2	---	6.4
Hydrogen Ion (pH units)	---	---	6.0 / 9.0 [4]	---	---	6.8 / 8.1 [4]

1. Lowest reported value
2. 7-day median
3. Highest reported daily geometric mean of results from 2-3 effluent channels within UV disinfection system
4. Minimum / Maximum

2. Effluent limitations contained in the existing Order for discharges from Meadow Lane Pond D and Delta Pond (Monitoring Locations 006A, 006B, 012A, 012B) and representative monitoring data from the term of the previous Order are as follows:

Table 4. Summary of Discharge Monitoring Data for Copper for 2000-2005

Parameter (units)	Effluent Limitation	Monitoring Data (From January 2000 – To December 2005)	
	Maximum Daily (hardness based) MDEL = exp ((0.9422xln(H))-1.464)	Highest Daily Discharge	Associated Upstream Hardness
Copper (µg/L) [1]	26.5	54	153 mg/L as $CaCO_3$
Copper (µg/L) [2]	25.6	16	148 mg/L as $CaCO_3$

1. Maximum daily discharge from all monitoring locations (Kelly Pond (004), November 2, 2000)
2. Maximum daily discharge from monitoring locations 006A, 006B, 012A, 012B (D-Pond 48" (012B), January 8, 2003)

D. Compliance Summary

1. On October 27, 2000 the Regional Water Board directed that a complaint for administrative civil liability be issued to the City of Santa Rosa for mandatory penalties in the matter of effluent violations of WDRs, Regional Water Board Order No. 98-84 and State Water Resources Control Board (State Water Board) Order No. 2000-02. The civil liability assessed was $21,000, which the City paid ($15,000 of which occurred after issuance of 2000-2).

2. On April 30, 2002 the Regional Water Board directed that a complaint for mandatory administrative civil liability be issued to the City of Santa Rosa for violations of WDRs, State Water Board Order No. 2000-2. The civil liability assessed was $15,000, which the City paid.

3. On May 2, 2002 the Regional Water Board directed that a complaint for administrative civil liability be issued to the City of Santa Rosa for violations of WDRs, State Water Board Order No. 2000-2. The civil liability assessed was $12,350, which the City paid.

4. On September 13, 2004 the Regional Water Board directed that a complaint for violations of effluent and other NPDES permit violations by issued to the City of Santa Rosa, Order No. 2000-02. The civil liability assessed was $37,850, which was paid on October 1, 2004.

E. Planned Changes

1. **Incremental Recycled Water Program (IRWP).** The City of Santa Rosa approved the IRWP, which effectively caps the annual discharge from the WWTF at 4,500 million gallons (based on an average dry weather flow of 21.34 mgd). Wastewater flows attributed to future growth anticipated between 2010 and 2020 will be allocated to reuse divided among agricultural and urban reuse, as well as to providing additional water for the Geysers Recharge Project. The total estimated cost of the program is $225 million.

2. **Leachate Pipeline.** A project is underway to install a pipeline to convey leachate generated at the Sonoma County landfill to the Santa Rosa treatment facility. The new conveyance system will connect the leachate ponds to the Rohnert Park trunk sewer line where leachate will be pumped approximately 24,000 feet to a connection point just north of the Laguna de Santa Rosa. The design capacity of the system will be approximately 42.5 million gallons per year.

3. **Pond Usage.** The Discharger has requested that the Alpha Pond (001), the Kelly Pond (004), and the Poncia Pond (007) be removed as designated discharge locations in the renewed NPDES permit.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the United States Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the CWC). 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 of the CWC for discharges that are not subject to regulation under CWA section 402.

B. California Environmental Quality Act (CEQA)

This action to adopt an NPDES permit is exempt from the provisions of CEQA (Public Resources Code Section 21100, et seq.) in accordance with Section 13389 of the CWC.

C. State and Federal Regulations, Policies, and Plans

1. Water Quality Control Plans. The Regional Water Board adopted a Water Quality Control Plan for the North Coast Region (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Board Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. Beneficial uses applicable to Colgan Creek, Santa Rosa Creek, the Laguna de Santa Rosa, and freshwater wetlands within the watershed are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
002	**Colgan Creek**	Existing: Agricultural supply (AGR); industrial service supply (IND); Ground water recharge (GWR); navigation (NAV); hydropower generation (POW); contact (REC-1) and non-contact (REC-2) water recreation; commercial and Sport fishing (COMM); Warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); preservation or rare, threatened or endangered species (RARE); freshwater replenishment (FRESH); migration of aquatic organisms (MIGR); spawning, reproduction and/or early development, Native American Culture (CUL), subsistence fishing (FISH), Flood peak attenuation/Flood water storage (FLD), Water quality enhancement (WQE). Potential: Municipal and domestic water supply (MUN); industrial process supply (PRO); shellfish harvesting (SHELL); aquaculture (AQUA).
003	**Unnamed Ditch, tributary to Laguna de Santa Rosa**	
005	**Unnamed Ditch, tributary to Laguna de Santa Rosa**	
006A, 006B, 014, 015, 016	**Laguna de Santa Rosa**	
008, 009, 012A, 012B	**Santa Rosa Creek**	Existing: Municipal and domestic water supply (MUN); agricultural supply (AGR); industrial service supply (IND); Ground water recharge (GWR); navigation (NAV); contact (REC-1) and non-contact (REC-2) water recreation; commercial and Sport fishing (COMM); Warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); preservation or rare, threatened or endangered species (RARE); migration of aquatic organisms (MIGR); spawning, reproduction and/or early development, Native American Culture (CUL), subsistence fishing (FISH), Flood peak attenuation/Flood water storage (FLD), Water quality enhancement (WQE). Potential: Industrial process supply (PRO); hydropower generation (POW); shellfish harvesting (SHELL); aquaculture (AQUA).
	Freshwater Wetlands	Existing: Wetland Habitat (WET). Potential: Municipal and domestic water supply (MUN); agricultural supply (AGR); industrial service supply (IND); Ground water recharge (GWR); freshwater replenishment (FRESH); navigation (NAV); contact (REC-1) and non-contact (REC-2) water recreation; commercial and Sport fishing (COMM); Warm freshwater habitat (WARM); cold freshwater habitat (COLD); wildlife habitat (WILD); preservation or rare, threatened or endangered species (RARE); migration of aquatic organisms (MIGR); spawning, reproduction and/or early development (SPWN); shellfish harvesting (SHELL); estuarine habitat (EST); aquaculture (AQUA); Native American Culture (CUL); Flood peak attenuation/Flood water storage (FLD), Water quality enhancement (WQE).

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

3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, which was amended on May 4, 1995 and November 9, 1999, and the CTR on May 18, 2000, which was amended on February 13, 2001. These rules include water quality criteria for priority pollutants and are applicable to this discharge.

4. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP applies to discharges of toxic pollutants into the inland surface waters, enclosed bays, and estuaries of California subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the CWC) and the federal CWA. The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California through the NTR and to the priority pollutant objectives established by the regional water boards in their basin plans. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP includes procedures for determining the need for and calculating WQBELs, and requires dischargers to submit data sufficient to do so.

5. **Antidegradation Policy.** State Water Board Resolution No. 68-16 (Resolution 68-16) and 40 CFR section 131.12, require the Regional Water Board, in regulating discharge of waste, to maintain high quality waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Water Board's policies. Resolution 68-16 requires the discharge be regulated to meet best practicable treatment or control (BPTC) to assure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the State be maintained.

   This Order may allow some degradation of the quality of waters of the state by virtue of the fact that it permits the discharge of waste exerting a biochemical oxygen demand, containing suspended solids, biostimulatory substances and elevated temperature above ambient conditions into a waterway impaired for dissolved oxygen, sediment, nitrogen, phosphorus, and temperature. Nevertheless, this Order is consistent with Resolution 68-16 because (1) such degradation is consistent with the maximum benefit to the people of the state, (2) the discharge is the result of wastewater utility service that is necessary to accommodate housing and economic expansion, and (3) it results in a high level of treatment of sewage waste. This Order requires tertiary treatment or equivalent, which is a high level of treatment that is considered BPTC for most constituents in the wastewater and will result in attaining water quality standards applicable to the discharge.

The discharge from the facility has the potential to cause or contribute to exceedances of applicable water quality objectives for certain constituents as described in this Order. However, this Order requires the Discharger, in accordance with specified compliance schedules under Section VI.C.4, to meet requirements that will result in the use of BPTC for those constituents and ultimately result in compliance with water quality objectives. This Order requires compliance with technology-based standards for biochemical oxygen demand, total suspended solids and pH and more stringent water quality-based standards for nonconventional pollutants with the reasonable potential to cause or contribute to excursions of water quality objectives.

This Order authorizes the Discharger to discharge biostimulants (nitrogen and phosphorus) to surface water in concentrations and mass emission rates based on the current level of treatment plant performance. Section IV.A.2 of this Order establishes interim concentration-based effluent limitations for nitrate, Total Kjeldahl Nitrogen, and Total Phosphate and interim mass-based interim limitations for Total Nitrogen and Total Phosphate. Final effluent limitations for biostimulants will be established at levels determined by an approved TMDL for the Laguna de Santa Rosa or at zero (i.e., "no net loading"). During this permit term, it is expected that the Discharger will make the necessary changes to its treatment and disposal system to meet final effluent limitations for nitrate, Total Kjeldahl Nitrogen, and Total Phosphate. In the interim, the Discharger must comply with the conditions set forth in sections VI.C.4.c and VI.C.4.d of this Order.

6. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR §122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. Some effluent limitations in the Order are less stringent that those in the previous Order. As discussed in this Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

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

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

1. 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. Each state must submit an updated list, called 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 List also identifies the pollutant or stressor causing impairment, and establishes a schedule for developing a control plan to address the impairment. The

USEPA requires the Regional Water Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant and water body combination.

2. The Laguna de Santa Rosa is currently listed for low dissolved oxygen, nitrogen, phosphorus, sediment, and temperature. The Middle Russian River (Santa Rosa Creek HSA) is listed for pathogens, sediment, and temperature. The Lower Russian River (Mark West Creek HSA) is listed for sediment and temperature. A designated reach in the mainstem of the Lower Russian River (Guerneville HSA) is listed for pathogens, sediment, and temperature.

3. On July 25, 2003, USEPA gave final approval to California's 2002 Section 303(d) List of Water Quality Limited Segments.

E. Other Plans, Polices and Regulations

1. The Discharger has storm water discharges associated with industrial activities, category "ix" as defined in 40 CFR Section 122.26(b)(14). The Discharger has prepared a Storm Water Pollution Prevention Plan (SWPP Plan) and has implemented the provisions of the SWPP Plan. The Discharger must describe storm water discharges, appropriate pollution prevention practices and best management practices in a completed Notice of Intent to be submitted to the State Water Board pursuant to the Statewide General Order Program.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES Orders. NPDES regulations establish two principal bases for effluent limitations. At 40 CFR 122.44 (a) Orders are required to include applicable technology-based limitations and standards; and at 40 CFR 122.44 (d) Orders are required to include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. When numeric water quality objectives have not been established, but a discharge has the reasonable potential to cause or contribute to an excursion above a narrative criterion, WQBELs may be established using one or more of three methods described at 40 CFR 122.44 (d) - 1) WQBELs may be established using a calculated water quality criterion derived from a proposed State criterion or an explicit State policy or regulation interpreting its narrative criterion; 2) WQBELs may be established on a case-by-case basis using USEPA criteria guidance published under CWA Section 304 (a); or 3) WQBELs may be established using an indicator parameter for the pollutant of concern.

A. Discharge Prohibitions

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

This prohibition is based on the Basin Plan, previous Order, and State Water Board Order WQO 2002-0012 regarding the petition of WDR Order No. 01-072 for the East Bay Municipal Utility District and Bay Area Clean Water Agencies. In State Water Board Order WQO 2002-0012, the State Water Board found that this prohibition is acceptable in permits, but should be interpreted to apply only to constituents that are either not disclosed by the discharger or are not reasonably anticipated to be present in the discharge, but have not been disclosed by the discharger. 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 they can be reasonably contemplated." (In re the Petition of East Bay Municipal Utilities District et al., (State Water Board 2002) Order No. WQ 2002-0012, p. 24.) The case cited in that order by the State Water Board reasoned that the discharger is liable for discharges "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, State Water Board authority provides that, to be permissible, the constituent discharged (1) must have been disclosed by the discharger and (2) can be reasonably contemplated by the Regional Water Board.

The Regional Water Board has the authority to determine whether the discharge of a constituent is "reasonably contemplated." The Piney Run case makes clear that the discharger is liable for discharges "not within the reasonable contemplation of the permitting authority . . . , whether spills or otherwise . . . ." (268 F.3d 255, 268.) In other words, whether or not the discharger reasonably contemplates the discharge of a constituent is not relevant. What matters is whether the discharger 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 permit adoption.

2. **Discharge Prohibition III.B. Creation of a pollution, contamination, or nuisance, as defined by CWC Section 13050 is prohibited.**

   This prohibition is based on CWC Section 13050. It has been retained from the previous order, Water Quality Order No. 2000-03.

3. **Discharge Prohibition III.C. The discharge of sludge is prohibited, except as authorized under Section VI.C.6.d. Solids Disposal and Handling Requirements.**

   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 CCR. It has been retained from Water Quality Order No. 2000-03.

4. **Discharge Prohibition III.D. The discharge of untreated or partially treated waste (receiving a lower level of treatment than described in Finding II.B) from anywhere within the collection, treatment, or disposal facility is prohibited, except as provided**

for in Prohibition III.E. and Attachment D, Standard Provision I.G *[Bypass Provision]*.

This prohibition has been retained from Water Quality Order No. 2000-03 and is based on the Basin Plan to protect beneficial uses of the receiving water from unpermitted discharges, and the intent of CWC sections 13260 through 13264 relating to the discharge of waste to waters of the State without filing for and being issued a permit. This prohibition applies to spills not related to sanitary sewer overflows (SSOs) and other unauthorized discharges of wastewater within the collection, treatment, reclamation, 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 a pollution, contamination, or nuisance as defined in CWC section 13050(m) is prohibited.**

   This prohibition is based on State standards, including section 13050 of the CWC and the Basin Plan. This prohibition is consistent with the States' antidegradation policy as specified in State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining high Quality of Waters in California) in that the prohibition imposes conditions to prevent impacts to water quality, does not allow the degradation of water quality, will not unreasonably affect beneficial uses of water, and will not result in water quality less than that prescribed in State Water Board or Regional Water Board plans and policies.

   This prohibition is stricter than the prohibitions stated in State Water Board Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. Order 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 create a nuisance. Prohibition III.E. of this Order further prohibits any SSO that results in the discharge untreated or partially treated wastewater to all waters of the State including surface waters that are not waters of the United States and groundwater due to the prevalence of high groundwater in this Region and this Region's reliance on groundwater as a drinking water source.

6. **Discharge Prohibition III.F. The discharge of waste to land that is not owned by or under agreement to use by the Discharger is prohibited,** except for use for fire suppression as provided in CCR Title 22 section 60307(a) and (b)**.**

   This prohibition is retained from Water Quality Order No. 2000-03. Land used for the application of wastewater must be owned by the Discharger or be under the control of the Discharger by contract so that the Discharger maintains a means for ultimate disposal of treated wastewater.

In accordance with CCR Title 22 Section 60307, recycled water may be used for structural and nonstructural fire fighting. However, in the event of the authorized use of recycled water for fire suppression, the Discharger, to the extent practicable, is expected to implement best management practices that ensure that the discharge is managed in a manner that is protective of water quality.

7. **Discharge Prohibition III.G. The discharge of waste at any point, except Discharge Points 002, 003, 005, 06A, 06B, 008, 009, 012A, 012B, 014, 015, and 016, as described in the table on page 1 of this Order, or authorized by any State Water Board or other Regional Water Board permit is prohibited.**

   This prohibition is a general prohibition that allows the Discharger to discharge waste only in accordance with waste discharge requirements. It is based on Sections 301 and 402 of the federal CWA and CWC Section 13263.

8. **Discharge Prohibition III. H. The average daily dry weather flow of waste into the Subregional System wastewater treatment facility in excess of 21.34 mgd, as determined from the lowest consecutive 30-day mean daily flow, is prohibited.**

   The flow limitation of 21.34 mgd (average daily dry weather flow) is retained from Water Quality Order No. 2000-03 and is intended to ensure that wastewater flows do not exceed the Facility's design capacity.

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

   This prohibition is required by the Basin Plan. The Basin Plan prohibits discharges to the Russian River and its tributaries during the period May 15 through September 30 (Chapter 4, North Coastal Basin Discharge Prohibition No. 4). 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 of October 1 through May 14, discharges of recycled water shall not exceed five percent of the flow of the Russian River as measured at Hacienda Bridge (USGS gauge No 11-4670.00)**

    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. The Basin Plan was amended in 1993 to allow the discharge of advanced treated wastewater from the Laguna Regional Treatment and Disposal Facilities to the Russian River at a rate of up to five percent of the flow in the Russian River. This Prohibition retains the language in the previous permit; Water Quality Order No. 2000-03.

B. Technology-Based Effluent Limitations

1. **Scope and Authority.** The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in Section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator. Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR 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 biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH. In addition, 40 CFR 122.45 (f) requires the establishment of mass-based effluent limitations for all pollutants limited in Orders, except, 1) for pH, temperature, radiation, or other pollutants which cannot appropriately be expressed by mass, (2) when applicable standards and limitations are expressed in terms of other units of measure, and (3) when limitations expressed in terms of mass are infeasible because the mass of the pollutant cannot be related to a measure of operation and permit conditions ensure that dilution will not be used to comply with both limitations.

2. **Applicable Technology-Based Effluent Limitations.** The Basin Plan states that discharges "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." This requirement leaves discretion to the Regional Water Board to define AWT via effluent limitations in individual permits.

   a. **Biochemical Oxygen Demand and Suspended Solids.** Thus, for the purpose of regulating municipal waste discharges from the WWTF to the Laguna de Santa Rosa and its tributaries, advanced wastewater treatment is defined as achieving a monthly average concentration for BOD and suspended solids of 10 mg/l, and a weekly average concentration of 15 mg/l, which are technically achievable based on the capability of a tertiary 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.

   b. **Total Coliform Organisms.** The disinfected effluent discharged from the WWTF to the Laguna de Santa Rosa shall not contain concentrations of total coliform bacteria exceeding the following limitations:

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

      ii. The number of coliform bacterial does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period.

      iii. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

Table 6. Summary of Technology-based Effluent Limitations for Treatment Plant Final Effluent

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily
BOD (20°C, 5-day)	mg/L	10	15	---
Dry Weather	lbs/day	1.780	2,670	---
Wet Weather[1]	lbs/day	3,945	8,006	---
Total Suspended Solids	mg/L	10	15	---
Dry Weather	lbs/day	1.780	2,670	---
Wet Weather	lbs/day	3,945	8,006	---
Total Coliform Organisms	MPN/ 100 mL	---	2.2	23
Hydrogen Ion	pH units	Not less than 6 nor greater than 9		

[1] Wet weather conditions are when the average weekly or average monthly influent flow exceeds 21.34 mgd.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

As specified in 40 CFR §122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses for 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 water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. **Beneficial Uses**. The beneficial uses of the Laguna de Santa Rosa and the Russian River include municipal and domestic supply, agricultural supply, industrial service supply, industrial process supply, groundwater recharge, navigation, hydropower generation, water contact recreation, non-contact water recreation, commercial and sport fishing, warm freshwater habitat, cold freshwater habitat, wildlife habitat, preservation of rare, threatened, or endangered species, migration of aquatic organisms, spawning, reproduction, and/or early development, estuarine habitat, aquaculture, water quality enhancement, flood peak attenuation/flood water storage, wetland habitat, and subsistence fishing. Beneficial uses of areal groundwaters include: municipal and domestic water supply, agricultural water supply, industrial service supply and industrial process supply.

b. **Narrative Objectives.** In addition to the specific water quality objectives indicated above, the Basin Plan contains the following narrative objectives that apply to inland surface waters, enclosed bays, and estuaries:

i. <u>Biostimulatory Substances</u>: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

ii. <u>Sediment</u>: The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manners as to cause nuisance or adversely affect beneficial uses.

iii. <u>Dissolved Oxygen</u>: Dissolved oxygen concentrations shall conform to those limits listed in Table 1 (of the Basin Plan). For waters not listed in Table 1 and where dissolved oxygen objectives are not prescribed the dissolved oxygen concentrations shall not be reduced below the following minimum levels at any time.

Waters designated WARM, MAR or SAL….5.0 mg/l

Waters designated COLD…….. 6.0 mg/l
Waters designated SPAWN……7.0 mg/l
Waters designated SPAWN during critical
spawning and egg incubation periods……9.0 mg/l

iv. Bacteria: The bacteriological quality of waters of the North Coast Region shall not be degraded beyond natural background levels. In no case shall coliform concentrations in waters of the North Coast Region exceed the following:

In waters designated for contact recreation (REC-1), the median fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed 50/100 ml, nor shall more than ten percent of total samples during any 30-day period exceed 400/100 ml (State Department of Health Services).

v. Temperature: Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California" including any revisions thereto. A copy of this plan is included verbatim in the Appendix Section of the Basin Plan.

In addition, the following temperature objectives apply to surface waters:

The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.

vi. Toxicity: All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the Regional Water Board.

The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or when necessary for other control water that is consistent with the requirements for "experimental water" as described in Standard Methods for the Examination of Water and Wastewater, 18th Edition (1992). As a minimum, compliance with this objective as stated in the previous sentence shall be evaluated with a 96-hour bioassay.

In addition, effluent limits based upon acute bioassays of effluents will be prescribed. Where appropriate, additional numerical receiving water objectives for specific toxicants will be established as sufficient data become available, and source control of toxic substances will be encouraged.

c. **State Implementation Policy (SIP), CTR and NTR.** The CTR identifies 126 priority pollutants and lists aquatic life freshwater, aquatic life saltwater and human health criteria for most of the 126 priority pollutants and indicates that such criteria will be developed for the remaining criteria at a future date. Aquatic life freshwater and saltwater criteria are further 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 one-hour average numeric effluent limitation and the CCC is used to calculate a chronic or 4-day average numeric effluent limitation.

   Human health criteria are further identified as "water and organisms" and "organisms only." The criteria from the "water and organisms" column of CTR were used for the preliminary reasonable potential analysis because the Basin Plan identifies that the receiving water, the Russian River is a source of municipal and domestic drinking water supply. The human health criteria are used to calculate human health effluent limitations.

d. **Dilution Credits/Mixing Zones.** The CWA directs states to adopt water quality standards to protect the quality of its waters. USEPA's current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 CFR section 122.44 and section 122.45). The USEPA allows states to have broad flexibility in designing its mixing zone policies. Primary policy and guidance on determining mixing zone and dilution credits is provided by the SIP, the USEPA Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-001) (TSD), and the Basin Plan. For NPDES permits in California, the SIP supersedes the USEPA guidance for priority pollutants, to the extent that it addresses a particular procedure. The SIP does not apply to non-priority pollutants, in which case the more stringent of the Basin Plan or USEPA guidance applies. No dilution has been granted in this Order, thus end-of-pipe effluent limitations for all constituents are required.

e. **Translators.** The water quality objectives for most metals are defined as dissolved metal. Whereas effluent limitations for metals, and most water quality data, are expressed as total metal. Metal translators are used to convert dissolved metal to total metal or vice versa. There have been no approved studies to evaluate discharge-specific metal translators for the discharge to the Russian River or its tributaries.

f. **Discharger-Specific WER.** The SIP allows for the development of site-specific objectives (SSOs) to modify applicable priority pollutant criteria or objectives. One method for deriving SSOs is the USEPA's Water Effects Ratio (WER) procedure. As amended on February 24, 2005, the SIP allows for the development of a discharger-specific WER, whereby the WER applies only to the applicable limits in the

discharger's permit. A discharger-specific WER is distinguished from a WER that are developed on a waterbody or watershed basis as part of a water quality standards action resulting in adoption of an SSO. Implementation procedures for the development and use of SSOs are contained in Section 5.2 of the SIP. Additional guidance for development of SSOs are available in the *Draft Compilation of Existing Guidance for the Development of Site-Specific Water Quality Objectives in the State of California*, prepared for the USEPA by the Great Lakes Environmental Center.

On January 6, 2006, the Discharger submitted a *draft Work Plan for a Copper Water Effect Ratio Study for the Laguna Subregional Water Reclamation Facility*. The draft work plan is currently under review. Should the Regional Water Board approve the use of a discharger-specific WER for copper, the permit may be reopened and modified, as appropriate, in consideration of this new information.

3. Determining the Need for WQBELs

a. **Non-Priority Pollutants.**

i. **Nitrate**. The Basin Plan requires that waters designated as domestic or municipal supply (MUN) not contain concentrations of chemical constituents in excess of limits specified in Title 22, Division 4, Chapter 15, Articles 4 and 5.5 of the California Code of Regulations (CCR). Table 3-2 of the Basin Plan contains concentration limits for inorganic, organic and fluoride. The maximum allowable concentration for nitrate is 45 mg/l as NO_3 (10 mg/l as N).

ii. **Biostimulatory Substances**. On June 5 and July 25, 2003, the USEPA modified and approved the list of impaired water bodies, prepared by the State Water Board pursuant to Section 303 (d) of the CWA – water bodies which are not expected to meet applicable water quality standards after implementation of technology-based effluent limitations for point sources. The 303 (d) list includes the Laguna de Santa Rosa within the Middle Russian River Hydrologic Area as impaired by low dissolved oxygen, nitrogen, phosphorous, sedimentation/siltation, and temperature. The CWA requires the Regional Water Board to establish, in accordance with a priority ranking for 303 (d) listed waters, TMDLs for each impairing pollutant – the maximum amount (including a margin of safety) of each pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant's point and nonpoint sources. On October 27, 1994, the Regional Water Board approved a "TMDL" approach for the Laguna de Santa Rosa to satisfy Section 303(d) requirements, but this approach was subsequently found not to contain the minimum elements of a TMDL. For example, follow-up compliance monitoring, a critical element for TMDLs, was not continued.

The effects of the impairing pollutants on the Laguna de Santa Rosa are significant and are increasing with increased watershed urbanization, removal of riparian vegetation, loss of flood retention capacity, and increased discharges of wastewater and urban storm water runoff. As the assimilative capacity of the water body for

biostimulatory substances, primarily nitrogen and phosphorous, has been exceeded, phosphorous is now sequestered in the sediment and is cycled into the biota with any addition of available nitrogen. Excessive nitrogen and phosphorous levels are contributing to secondary water quality impairments, including nuisance plant growth, which adversely impacts REC1 and REC2 beneficial uses and consumes dissolved oxygen. Nuisance plant growth also creates conditions that impede flow, thereby increasing the rate of sedimentation and the potential for local and regional flooding, and provides habitat conducive to mosquito breeding. The potential health consequences of the mosquito-borne West Nile Virus are so severe that, over the next five years, local agencies will spend approximately $1.9 million to eradicate the invasive weed, *Ludwigia,* from the Laguna. In 2005, alone, local agencies removed 5,300 tons of *Ludwigia* from two limited areas of the Laguna.

Although sedimentation within the Laguna is likely contributing to the increased aquatic growth within the Laguna; however, levels of nutrients (nitrogen and phosphorous) within the receiving water are high relative to nutrient levels that are expected in other waterbodies in USEPA ecoregion 6 [2], and are a significant contributor to the deteriorating conditions within the Laguna de Santa Rosa. Wastewater from the Laguna Subregional Wastewater Treatment Facility, along with other anthropomorphic sources of nitrogen and phosphorus including septic systems, runoff from agricultural operations, and urban runoff have been tentatively identified as the primary sources of nutrients in the Laguna.

Discharge monitoring results from Brown Pond, Kelly Pond, Meadow Lane A Pond, Meadow Lane D Ponds, Delta Pond, and the Demonstration Wetlands were reviewed for discharges occurring from January 2003 through March 2006. These results show an average discharge concentration of Total Kjeldahl Nitrogen (TKN) (ammonia-nitrogen plus organic nitrogen) of 1.36 mg/l, and an average concentration of Total Phosphate (TP) of 1.78 mg/l. Table 7 compares effluent data to existing concentrations of nutrients in the Laguna de Santa Rosa and to nutrient levels that are expected in water bodies in USEPA Region 9 ecoregion 6. This comparison provides evidence that the Laguna de Santa Rosa has elevated concentrations of nitrogen and phosphorus in the water column relative to both impaired and minimally impaired water bodies in the region and the discharge from the WWTF contains nutrients that contribute to the concentration of nutrients in the Laguna.

[2] Ecoregions are large-scale landscape units that include relatively homogeneous ecosystems and are distinguishable from other ecoregions. There are 16 Level III ecoregions in USEPA Region 9. The primary distinguishing characteristic of Ecoregion 6 is its Mediterranean climate of hot dry summers and cool, moist winters, and associated vegetative cover comprising mainly chaparral and oak woodlands; grasslands occur in lower elevations and patches of pine are found at higher elevations.

Table 7. Effluent and Water Quality Data Compared to Other Water Bodies in Ecoregion 6

Ammonia	**Number of Samples**	**Average Concentration (mg/L)**
Minimally Impacted	261	0.05
Unimpaired	1,229	0.41
Impaired (nutrient)	907	0.34
Impaired (other)	1,279	0.47
Laguna de Santa Rosa	279	1.16
Subregional Water Reclamation System Effluent	131	0.46
Total Kjeldahl Nitrogen (ammonia + organic N)		
Minimally Impacted	156	0.31
Unimpaired	1,425	1.01
Impaired (nutrient)	868	1.06
Impaired (other)	1,486	0.97
Laguna de Santa Rosa	67	1.09
Subregional Water Reclamation System Effluent	131	1.36
Total Phosphate		
Minimally Impacted	260	0.05
Unimpaired	1,671	0.49
Impaired (nutrient)	1,056	0.60
Impaired (other)	1,793	0.45
Laguna de Santa Rosa	68	1.38
Subregional Water Reclamation System Effluent	131	1.78

Notes:

Water quality data for the Laguna de Santa Rosa is from a compilation of data from the Discharger's SMRs, surface water ambient monitoring (SWAMP) data, and other data provided to the Regional Water Board in electronic format.

Effluent data is from monitoring results from Brown Pond, Kelly Pond, Meadow Lane A Pond, Meadow Lane D Ponds, Delta Pond, and the Demonstration Wetlands was reviewed for discharges occurring from January 2003 through March 2006.

Nutrient data for Ecoregion 6 was made available to the Regional Water Board by Tetra Tech, Inc.

Based on its analysis of effluent and water quality data as well as information on the physical condition of the receiving waterbody, the Regional Water Board has determined that the biostimulatory components of discharges from the Laguna Subregional Wastewater Reclamation Facility have a reasonable potential to contribute to and promote excessive aquatic growth occurring within the Laguna de Santa Rosa and are, therefore, contributing to exceedances of the Basin Plan's narrative water quality objective for biostimulatory substances and the impairment of the Laguna de Santa Rosa. In order to control the level of nutrients in the discharge, comply with the narrative water quality objective, and prevent additional

degradation of beneficial uses this permit establishes interim performance-based effluent limitations for TKN and Total Phosphate.

During this permit term, the Regional Water Board plans to develop and adopt TMDLs for nitrogen and phosphorus which will specify wasteload allocations (WLAs) for point sources and load allocations (LA) for non-point sources, as appropriate. Following the adoption of these TMDLs by the Regional Water Board, this Order will be issued with final WQBELs based on applicable WLAs. Alternatively, in the absence of a TMDL at the end of the compliance schedule authorized by this Order, the final effluent limitation for nitrogen and phosphorus will be zero, or "no net loading."

The "no net loading" approach is based on effective water quality standards in the Basin Plan, including State and federal antidegradation policies (see SWRCB Resolution No. 68-16 and 40 CFR 131.12), and NPDES permitting regulations, including 40 CFR 122.44(d)(1) and 40 CFR 122.4(a). Any loading of a bioaccumulative/persistent pollutant to a receiving water with a beneficial use already impaired by that pollutant has the reasonable potential to cause or contribute to an exceedance of narrative water quality objective(s) in the Basin Plan (see 40 CFR 122.44(d)(1)(i)), and is in violation of State and federal antidegradation policies which require that existing instream beneficial uses and the level of water quality necessary to protect these uses be maintained and protected when a permit is issued by the Regional Water Board. The requirement that existing beneficial uses be protected is not satisfied if water quality objectives are exceeded. Where baseline water quality is less than the quality defined by the water quality objective, the antidegradation standard requires that water quality must be improved to a level that achieves the water quality objective (see page 4, Antidegradation policy implementation for NPDES permitting, SWRCB 90-004, Administrative Procedures Update, May 1990). Finally, 40 CFR 122.4(a) prohibits issuance of an NPDES permit when permit conditions do not provide for compliance with the CWA, or regulations promulgated under the CWA, including water quality standards and NPDES regulations. In the absence of a TMDL which provides that an alternative load can be assimilated by the receiving water, the only effluent limit for the pollutant which will ensure that the discharge does not cause or contribute to an exceedance of water quality standards and does comply with water quality standards and NPDES regulations is a net loading of zero.

A "no net loading" effluent limit may be met by: 1) reducing the effluent concentration below detectable levels through source control and/or treatment; 2) reducing loads through recycling/reclamation or through relocation of the discharge location; and/or 3) reducing loads elsewhere in the watershed by an amount at least equal to the amount discharge (and of equivalent bioavailability) through an approved offset program.

b. **Priority Pollutants.** The SIP Section 1.3 requires the Regional Water Board to use all available, valid, relevant, and representative receiving water and effluent data and

information to conduct a reasonable potential analysis. The Discharger has collected effluent data for priority pollutants for the raw effluent and discharge locations 06A, 06B, 012A, and 012B. The data set on which the reasonable potential analysis is based is included in self-monitoring reports January 1998 through July 2004. Additional effluent and ambient background data for all 126 priority pollutants were submitted by the Discharger in response to an April 27, 2001 technical information request (13267) letter titled "California Water Code Section 13267(b) Order; Requirement for submittal of Technical/Monitoring Report for Monitoring Priority Pollutants Regulated in the California Toxics Rule (CTR)". The Discharger sampled effluent on May 14, 2002 and January 23, 2003. Receiving water samples were collected from Santa Rosa Creek and the Laguna de Santa Rosa on May 13, 2002 and January 22, 2003. All samples were analyzed for all 126 priority pollutants.

Some freshwater water quality criteria for metals are hardness dependent; i.e., as hardness decreases, the toxicity of certain metals increases and the applicable water quality criteria become correspondingly more stringent. For this reasonable potential analysis, Regional Water Board staff has used a receiving water hardness concentration of 53.5 mg/L $CaCO_3$, based on receiving water data submitted by the Discharger. The use of the lowest receiving water hardness concentration provides the most protective approach for determining which parameters to require effluent limitations for the protection of aquatic life in the receiving stream. The range of ambient hardness the permitted receiving waters varied widely, as illustrated in the following table:

Table 8. Receiving Water Hardness for Discharge Points from 1998 to 2003

Discharge Point (ID)	Receiving Water	Hardness (mg/l as $CaCO_3$)			
		Upstream		Downstream	
		min	max	min	max
Alpha Pond (001)	Roseland Creek	133	316	147	214
Brown Pond (003)	Laguna de Santa Rosa	80	249	75	210
Kelly Pond (004)	Duer Creek	53.5	547	55	218
D-Incline Pump (06A)	Laguna de Santa Rosa	76	118	74	133
D Pond 36 (06B)	Laguna de Santa Rosa	66	289	80	239
Delta Pond 48 (12B)	Santa Rosa Creek	58	180	61	154
Laguna Joint Wetlands (016)	Laguna de Santa Rosa	70	269	74	268

Source : Self Monitoring Reports and electronic submittals provided by the Discharger

To conduct the reasonable potential analysis, Regional Water Board staff identified the maximum observed effluent (MEC) and background (B) concentrations for each priority pollutant from effluent and receiving water data provided by the Discharger and compared this data to the most stringent applicable water quality criterion (C) for each pollutant 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 review of other available and relevant information, a permit writer may decide that a WQBEL is required. Such additional information may include, but is not limited to: the facility type, the discharge type, solids loading analyses, lack of dilution, history of compliance problems, potential toxic impact of the discharge, fish tissue residue data, water quality and beneficial uses of the receiving water, CWA 303 (d) listing for the pollutant, and the presence of endangered or threatened species or their critical habitat.

c. **Reasonable Potential Determination**. Based on information submitted as part of the permit application, in studies, and as directed by monitoring and reporting programs, the Regional Water Board finds that the discharges from Monitoring Locations M-001 to M-103 have a reasonable potential to cause or contribute to an in-stream excursion above applicable water quality standards for copper, lead, nickel, cyanide, nitrate, total nitrogen, total phosphate. The RPA concludes that there is no reasonable potential for the remainder of the 126 priority pollutants or pollutants with other water quality objectives.

The following table summarizes the reasonable potential analysis for each priority pollutant that was reported in detectable concentrations in the raw effluent, storage pond effluent or the receiving water between January 1998 and July 2004. 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 Discharger. Appendix F-2 to this Order summarizes the reasonable potential analysis for all of the Discharger's effluent and receiving water monitoring data for priority pollutants.

Table 9. Summary of Reasonable Potential Analysis for Detected Priority Pollutants

CTR No.	Priority Pollutant	Lowest Applicable Water Quality Criteria(C)	Maximum Effluent Conc (MEC)	Maximum Detected Receiving Water Conc.(B)	RPA Result-Need Limit?	Reason	Recommendation
1.	Antimony	14	2	0.4, DNQ	No	MEC<C and B>C	No WQBEL. Routine monitoring
2.	Arsenic	150	4	3.4	No	MEC<C and B>C	No WQBEL. Routine monitoring
4.	Cadmium	1.5	0.3	0.04, ND	No	MEC<C and B>C	No WQBEL. Routine monitoring
5a.	Chromium (Total)	124	21	3.3	No	MEC<C and B>C	No WQBEL. Routine monitoring

CTR No.	Priority Pollutant	Lowest Applicable Water Quality Criteria(C)	Maximum Effluent Conc (MEC)	Maximum Detected Receiving Water Conc.(B)	RPA Result-Need Limit?	Reason	Recommendation
6.	Copper	5.5	18	25.6	Yes	MEC>C and B>C	WQBEL needed. Weekly monitoring
7.	Lead	1.4	5.8	1.8, DNQ	Yes	MEC>C and B>C	WQBEL needed. Weekly monitoring
8.	Mercury	0.050	0.3	0.0012, ND	No	BPJ	No WQBEL. Weekly monitoring
9.	Nickel	30.7	32	9.1	Yes	MEC>C and B<C	WQBEL needed. Weekly monitoring
11.	Silver	1.4	0.5	3.5, DNQ	No	MEC<C and B<C	No WQBEL. Routine monitoring
13.	Zinc	70.5	44	24	No	MEC<C and B<C	No WQBEL. Routine monitoring
14.	Cyanide	5.2	51	2.8, DNQ	Yes	MEC>C	WQBEL needed. Weekly monitoring.
26.	Chloroform	No Criteria	10.3	0.24, DNQ	No	No Criteria, BPJ	No WQBEL. Routine monitoring
27.	Dichlorobromomethane	0.56	1.8	0.1, ND	No	BPJ	No WQBEL. Routine monitoring
37.	1,1,2,2-Tetrachloroethane	0.17	1.2	0.057, ND	No	BPJ	No WQBEL Weekly monitoring
45.	2-Chlorophenol	120	5, ND	0.4, ND	No	BPJ	No WQBEL. Monthly monitoring
51.	4-Nitrophenol	No Criteria	5, ND	0.2, ND	No	No Criteria, BPJ	No WQBEL. Monthly monitoring
52.	3-methyl-4-chlorophenol	No Criteria	5, ND	5, ND	No	No Criteria, BPJ	No WQBEL. Monthly monitoring
53.	Pentachlorophenol	0.28	5, ND	0.4, ND	No	BPJ	No WQBEL. Monthly monitoring
54.	Phenol	21,000	5, ND	0.2, ND	No	MEC<C and B<C	No WQBEL. Monthly monitoring
56.	Acenaphthene	1200	5, ND	0.17, ND	No	MEC<C and B<C	No WQBEL. Monthly monitoring
68.	Bis(2-Ethylhexyl) Phthalate	1.8	570	0.3, ND	No	BPJ	No WQBEL. Weekly monitoring
77.	1,4 Dichlorobenzene	400	1.3	0.081, ND	No	MEC<C and B<C	No WQBEL. Routine monitoring
81.	Di-n-Butyl Phthalate	2,700	5.7	0.4, ND	No	MEC<C and B<C	No WQBEL. Routine monitoring
82.	2,4-Dinitrotoluene	0.11	5, ND	0.3, ND	No	BPJ	No WQBEL. Monthly monitoring
94.	Naphthalene	No Criteria	7.5	0.05, ND	No	No Criteria, BPJ	No WQBEL. Routine monitoring

CTR No.	Priority Pollutant	Lowest Applicable Water Quality Criteria(C)	Maximum Effluent Conc (MEC)	Maximum Detected Receiving Water Conc.(B)	RPA Result-Need Limit?	Reason	Recommendation
97.	N-Nitrosodi-n-Propylamine	0.005	5, ND	0.3, ND	No	BPJ	No WQBEL. Monthly monitoring
100.	Pyrene	960	0.03, ND	0.03, ND	No	MEC<C and B<C	No WQBEL. Routine monitoring
101.	1,2,4-Trichlorobenzene	No Criteria	5, ND	0.3, ND	No	No Criteria, BPJ	No WQBEL. Routine monitoring
104.	β-BHC	0.014	0.07	0.001, ND	No	BPJ	No WQBEL. Weekly monitoring
105.	γ-BHC (Lindane)	0.019	0.04	0.001, ND	No	BPJ	No WQBEL. Weekly monitoring
113.	Endosulfan (beta)	0.056	0.08	0.001, ND	No	BPJ	No WQBEL. Monthly monitoring

Notes:
1. ND = not detected
2. DNQ = detected, but not quantified
3. BPJ = Best Professional Judgment
4. The Discharger reported the following pollutant concentrations in a raw effluent sample from the Laguna Subregional Water Reclamation Facility on October 4, 1999: n-nitrosodi-n-propylamine (88.4 µg/l), pentachlorophenol (264 µg/l), 2-chlorophenol (158 µg/l), Acenaphthene (142 µg/l), 2,4-dinitrotoluene (155 µg/l), pyrene (157 µg/l), 1,2,4-trichlorobenzene (130 µg/l), 4-chloro-3-methylphenol (197 µg/l), 4-nitrophenol (278 µg/l), and phenol (210 µg/l). These results are believed to be erroneous and are not included in the table.
5. The Discharger reported 1,1,2,2-tetrachloroethane at a concentration of 1.2 µg/l in a pond effluent sample from the Laguna Subregional Water Reclamation Facility on February 16, 2000. This result is believed to be erroneous.

d. **Reasonable Potential Analysis**. The following section summarizes additional details regarding the reasonable potential analysis for pollutants for which reasonable potential has been determined and pollutants for which reasonable potential was rejected based on the best professional judgment of the permit writer:

i. **Copper**. The CTR freshwater aquatic life acute and chronic criteria for copper, using the lowest receiving water hardness concentration of 53.5 mg/l, are 7.8 and 5.5 µg/l, respectively. The CTR human health criterion for copper is 1,300 µg/l.

The concentration of total recoverable copper in the treated effluent ranged from < 1.0 µg/l to 14 µg/l, in 31 samples. Twenty-one of the effluent concentrations exceeded the lowest CTR criterion of 5.5 µg/l. Monitoring results from pond discharge locations 06A, 06B, 012A, and 012B contained concentrations of total recoverable copper ranging from < 5 to 18 µg/l in 27 samples. Twenty-three of these results exceeded the lowest CTR Criterion. Therefore, there is reasonable potential for copper and effluent limitations are needed.

ii. **Cyanide.** The CTR freshwater aquatic life acute and chronic criteria for cyanide are 22 µg/l and 5.2 µg/l, respectively. The CTR human health criterion for cyanide is 700 µg/l.

The concentration of total recoverable cyanide in the treated effluent ranged from 1.8 µg/l to 51 µg/l, in 31 samples (with 14 non-detects). Five of the effluent concentrations exceeded the lowest CTR criterion of 5.2 µg/l. Monitoring results from discharge locations 06A, 06B, 012A, and 012B contained concentrations of total recoverable cyanide ranging from < 3 to 12 µg/l in 27 samples. Two of these results exceeded the lowest CTR Criterion. Therefore, there is reasonable potential for cyanide and effluent limitations are needed.

iii. **Lead.** The CTR freshwater aquatic life acute and chronic criteria for lead, using the lowest hardness concentration of 53.5 mg/l, are 36.8 and 1.4 µg/l, respectively. There is no human health criterion for lead.

The concentration of total recoverable lead in the treated effluent ranged from 0.14 to 5.8 µg/l, in 31 samples. Two of the effluent concentrations exceeded the lowest CTR criterion and analysis of monitoring samples prior to May 2002 used a detection limit greater than the lowest CTR criterion. Monitoring results from discharge locations 06A, 06B, 012A, and 012B contained concentrations of total recoverable lead ranging from < 2 to 5.8 µg/l in 27 samples. One of these sample results exceeded the lowest CTR Criterion. Therefore, there is reasonable potential for lead and effluent limitations are needed.

Seven out of eight receiving water samples submitted by the Discharger contained concentrations of total recoverable lead at concentrations ranging from 0.14 to 1.8 µg/l. The single result of 1.8 ug/l, determined from a sample collected on May 15, 2002, exceeds the lowest CTR criterion and contributes to staff's determination of reasonable potential.

iv. **Nickel**. The CTR freshwater aquatic life acute and chronic criteria for nickel, using the lowest hardness concentration of 53.5 mg/l, are 276 µg/l and 30.7 µg/l, respectively. The CTR human health criterion for nickel is 610 µg/l.

Monitoring results submitted by the Discharger indicate that treatment facility effluent contained concentrations nickel ranging from < 2 µg/l to 7.3 µg/l in 31 samples. Monitoring results from discharge locations 06A, 06B, 012A, and 012B contained concentrations of total recoverable nickel ranging from < 5 to 32 µg/l in 27 samples. The two highest results of 32 µg/l and 30 µg/l were obtained from discharge location 012B on December 12, 2002 and January 8, 2003, respectively. In five subsequent monitoring samples collected from storage pond discharges from April 9, 2003 to April 12, 2005, the maximum effluent concentration was 7.2 µg/l. Since the MEC of 32 µg/l exceeds the lowest CTR criteria and the Discharger has provided no information that demonstrates that the reported results were erroneous

or invalid, there is reasonable potential that the discharge will exceed the CTR criterion for nickel and effluent limitations are required.

v. **Mercury.** The CTR human health criterion for mercury is 0.050 µg/l. Currently, there are no freshwater aquatic life criteria for mercury.

Effluent monitoring data for May 14, 2002 and January 23, 2003 submitted by the Discharger contained mercury concentrations ranging from 0.0021 µg/l to 0.00394 µg/l in 4 samples. Mercury concentrations in raw effluent were not detected in 27 effluent samples (with detection limits ranging from 0.05 to 0.1 µg/l) prior to the 2002-2003 monitoring events. Monitoring results for mercury from monitoring locations 06A, 06B, 012A, and 012B were reported as non-detect in 27 samples from January 1998 to January 2004.

The MEC of 0.00394 for total recoverable mercury in raw effluent and storage pond discharges is less than the water quality criterion of 0.050 µg/l. However, conflicting monitoring results from a raw effluent sample were collected on 4/5/99, where a result for total recoverable mercury was reported as less than 0.2 µg/l and dissolved mercury was reported at a concentration of 0.3 µg/l for the same sample. This incongruous result suggests that

Although the dissolved mercury concentration exceeds the CTR Criterion for mercury, Regional Water Board staff has determined that, at this time, there is insufficient effluent monitoring data at or near the water quality criterion to justify a determination of reasonable potential for mercury. Instead, this Order directs the Discharger to conduct weekly monitoring of the raw effluent and the storage pond effluent, when discharging to surface water, to gather sufficient information to conduct a reasonable potential analysis. Should monitoring data indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of the human health criterion for mercury; the permit will be reopened to establish WQBELs for mercury and a pollution prevention plan to reduce the mass emission of mercury to surface waters.

vi. **Beta-BCH and Gamma-BCH.** Beta and gamma- benzene hexachloride (BHC) are isomers of the synthetic chemical now referred to as hexachlorocyclohexane (HCH). The most commonly encountered isomer is gamma-HCH, or lindane, is an organo-chlorinated pesticide listed by the USEPA as a Persistent, Bioaccumulative and Toxic Chemical and is toxic to humans and wildlife. Lindane is also a priority pollutant, a hazardous material, and a Bioaccumulative Chemical of Concern. The CTR criterion for gamma-BCH to protect human health for drinking water sources (consumption of water and aquatic organisms) is 0.019 µg/l. The CTR criterion for beta-BCH is 0.014 µg/l.

Lindane is an ingredient in prescription shampoos to treat head lice. The use of lindane for this purpose was prohibited under state law beginning on January 1, 2002 so it was anticipated that its presence of this priority pollutant in wastewater

would decline after 2002. Effluent monitoring results since January 1998, which indicate only one detected concentration (0.02 µg/l) of lindane on 1/5/98 and one detected concentration of beta-BCH on February 16, 2000, and none thereafter, appear to support this projection. Receiving water samples from the Laguna de Santa Rosa and Santa Rosa Creek were collected on November 11, 2002 and February 20, 2003 and analyzed for gamma-BCH. The results of eight analyses were non-detect at a detection limits ranging from 0.001 to 0.01 ug/l.

This Order directs the Discharger to conduct weekly monitoring of the raw effluent and the storage pond effluent for beta and gamma-BCH, when discharging to surface water, to confirm the absence of these pollutants in the treated discharge. Should monitoring data indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of the human health criterion for beta and/or gamma-BCH, the permit will be reopened to establish WQBELs for the pollutant(s) and a pollution prevention plan to reduce the mass emission of the pollutant(s) to surface waters.

vii. **Dichlorobromomethane (DCBM)**. DCBM is a component of a group of chemicals, commonly known as trihalomethanes (THMs), which are formed during the disinfection process for drinking water and wastewater treatment through the reaction of chlorine and organic and inorganic material. Other THMs include chloroform, bromoform, and chlorodibromomethane. THMs are considered human carcinogens. The CTR criterion for DCBM to protect human health for drinking water sources (consumption of water and aquatic organisms) is 0.56 µg/l.

Effluent monitoring data for January 5, 1998, April 6, 1998, and July 6, 1998 showed DCBM in raw effluent at concentrations of 1 µg/l, 1.1 µg/l and 1.8 µg/l, respectively. However, the Discharger replaced chlorine as its primary disinfectant with ultraviolet disinfection in 1998 and has not reported detectable levels (with a detection limit of 0.5 µg/l) of DCBM or other THMs in raw effluent. Monitoring results from raw effluent samples and storage pond discharges since July 1998 were reported as non-detect with a minimum detection level of 0.5 µg/l.

viii. **Chloroform**. Chloroform is a THM formed during the disinfection process for drinking water and wastewater treatment through the reaction of chlorine and organic and inorganic material. The federal primary maximum contaminant level (MCL) for total THMs is 80 µg/l.

Chloroform was detected in 8 of 47 treated effluent samples in the discharge from Meadow Lane Pond, Delta Ponds, and monitoring location 015 from 1999 to 2004. In the 8 samples where chloroform was detected above the method detection limit, concentrations ranged from 0.4 µg/l to 1.8 µg/l. All other samples showed no detectable concentrations at method detection limits ranging from 0.5 µg/l to 5 µg/l. Because the MEC is less than the MCL for chloroform and the Discharger has not use a significant quantity of chlorine in its treatment process since 1998, the discharge does not have reasonable potential to exceed the MCL for chloroform.

ix. **Bis(2-Ethylhexyl) Phthalate.** Bis(2-ethylhexyl) phthalate belongs to a class of pollutants known as ortho-phthalate esters. Phthalate esters are widely used as plasticizers, primarily in the production of polyvinyl chloride (PVC) resins. Plasticizers are added to synthetic plastic resins to impart flexibility to the ordinarily brittle PVC, improve workability during fabrication and extend or modify properties not present in the original resins. PVC resins are used in a wide diversity of products including cable insulation, flooring, furniture upholstery, wall coverings, car upholstery and seat covers, footwear and food and medical packaging material. Phthalates also are used in cosmetics, industrial oils and insect repellants. The most widely used phthalate plasticizer is bis(2-ethylhexyl) phthalate, also known as di (2-etthylhexyl) phthalate or DEHP. DEHP released to water systems will biodegrade fairly rapidly (half-life 2-3 weeks). It will also strongly adsorb to sediments and bioconcentrate in aquatic organisms. The CTR criterion for DEHP to protect human health for drinking water sources (consumption of water and aquatic organisms) is 1.8 µg/l.

DEHP was detected at concentrations exceeding the CTR Criterion in three monitoring samples collected from wastewater storage pond discharges (monitoring locations 06B and 012B). Sewage sludge from the Santa Rosa Subregional WWTF is also known to contain relatively high concentrations of DEHP, which accumulates on sludge solids because of its hydrophobicity. As a result, it is suspected that the effluent discharge would also contain concentrations of the constituent DEHP at levels that exceed. However, current monitoring data do not indicate the presence of DEHP in the raw treated effluent. The Discharger also has recently conducted a study to determine possible sources of the contaminant. This study indicated that the previously submitted effluent monitoring data at the Laguna Regional WWTP for DEHP may be suspect due to sample contamination during sampling and testing resulting from the use of plastic tubing. Based on this information, Regional Water Board staff believe that there is not sufficient data to make a determination that there is reasonable potential for the Discharger to cause or contribute to an exceedance of the bis(2-ethylhexyl) phthalate criterion in the receiving water. Therefore in accordance with Section 2.2.2.A. of the Policy, no limit for bis(2-ethylhexyl) phthalate is included in the Order.

To confirm the absence of DEHP in treated effluent and further investigate the potential sources of sample contamination, the Discharger is directed to conduct weekly monitoring of the storage pond effluent, when discharging to surface water,. Should monitoring data indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of the human health criterion for bis(2-ethylhexyl) phthalate, the permit will be reopened to establish WQBELs for bis(2-ethylhexyl) phthalate and a pollution prevention plan to reduce the mass emission of bis(2-ethylhexyl) phthalate to surface waters.

xi. **1,1,2-2 tetrachloroethane, n-nitrosodi-N-propylamine (DPN), 2,4-dinitrotoluene, 2-Chlorophenol, 2-chlorophenol, pentachlorophenol, beta-endosulfan.** Monitoring results submitted by the Discharger for February 16, 2000 indicated that the storage pond effluent contained 1,1,2-2 tetrachloroethane at a concentration of 1.2 µg/L. Monitoring results submitted by the Discharger for October 4, 1999 indicated that treatment facility effluent contained the following concentrations: n-nitrosodi-n-propylamine (88.4 µg/l), pentachlorophenol (264 µg/l), 2-chlorophenol (158 µg/l), Acenaphthene (142 µg/l), 2,4-dinitrotoluene (155 µg/l), pyrene (157 µg/l), 1,2,4-trichlorobenzene (130 µg/l), 4-chloro-3-methylphenol (197 µg/l), 4-nitrophenol (278 µg/l), and phenol (210 µg/l). All results of subsequent monitoring from the raw effluent or the storage pond effluent were reported as not detected for these pollutants.

A technical memorandum titled, "Fate of Organic Compounds in the Laguna Subregional Water Reclamation Facility," was prepared by CH2M Hill on behalf of the Discharger and submitted as part of the report of waste discharge to assess whether detections of these pollutants were a result of laboratory error. The evaluation consisted of a literature review of relevant information about the compounds and mathematical monitoring to hypothesize about the fate of these compounds in the treatment plant. The study concluded that the compounds are not in common usage and could not be present in the influent waste stream at a concentration that would produce the reported effluent concentrations.

Based on this study, the results of recent monitoring data, and best professional judgment, Regional Water Board staff has concluded that information is sufficient to support the determination that there is no reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria for these pollutants and WQBELs are not necessary. The Order directs the Discharger to conduct monthly monitoring of the storage pond effluent, when discharging to surface water, to confirm the continued absence of these pollutants from the discharge.

xii. **Nitrate.** Table 3-2 of the Basin Plan limits the concentration in domestic or municipal water supply to 45 mg/l as total nitrate. This limitation is more commonly expressed as 10 mg/l as nitrate-nitrogen. This limit corresponds to the primary drinking water standard established by the California Department of Health Services

Results from storage pond effluent monitoring from January 2003 to March 2006 indicated a maximum effluent concentration of nitrate of 13.7 mg/l as N, in 131 samples. This result exceeds the applicable water quality standard for nitrate. Therefore, there is reasonable potential for nitrate and effluent limitations are needed.

4. WQBEL Calculations.

a. Non-Priority Pollutants

i. Nitrate. Final WQBELs for nitrate have been determined using the methods described in Section 1.4 of the SIP, using the drinking water MCL of 10.0 mg/l (as N) as the applicable water quality criterion. If, as a result of a nutrient TMDL for the Laguna de Santa Rosa, a WLA for nitrate or total nitrogen is numerically lower than 10.0 mg/l (as N), then the final WQBELs for nitrate will be determined by an approved TMDL for the Laguna de Santa Rosa or will be zero (i.e., "no net loading").

In accordance with Section 1.4 of the SIP, when the most stringent water quality objective is a human health objective, the AMEL is set equal to the effluent concentration allowance (ECA), which is equal to the water quality objective when no dilution is allowed.

ii. Biostimulatory Substances.

For this Order, interim limitations were derived for TKN, nitrate and Total Phosphate based on treatment facility performance using the monitoring results of storage pond effluent samples from January 2003 to March 2006. Performance-based effluent limitations were calculated using the methods and concepts described in Appendix E of the TSD (Box E-1 and E-2). For TKN, nitrate and Total Phosphate, the upper 99% percentile limit of a delta lognormal sample distribution was calculated using available data reported as detected and nondetected, and assuming weekly monitoring of the discharge (i.e., n = 4). The upper 99th percentile limit of 3.0 mg/l was then established for TKN as a performance-based AMEL. For nitrate, the upper 99th percentile of 12.9 mg/l was used as the AMEL. Similarly for Total Phosphate, the upper 99th percentile limit of 3.1 mg/l was used as the AMEL. Table 10 provides the calculations performed to determine effluent limitations.

Table 10. WQBELs for TKN and TP

	TKN	Total Phosphate	Nitrate
Number of samples (k)	100	105	105
Number of Detects (k-r)	95	105	105
Number of non-detects (r)	5	0	0
Delta = r/k (δ)	0.05	0	0
Detection Limit (D)	0.2	0.1	0.2
Mean of natural logs (μ_y)	0.291	0.492	2.158
Number of samples per month (n)	4	4	4
σ^2_y	0.320	0.214	0.095
σ_y	0.566	0.462	0.309
Daily Average E(x)	1.501	1.821	9.073
Variance V(x)	0.973	0.789	8.240

	TKN	Total Phosphate	Nitrate
μ_n	0.355	0.570	2.193
σ^2_n	0.102	0.058	0.025
σ_n	0.320	0.240	0.157
Probability	0.99	0.99	0.99
ϕ for z(0.99)	2.326	2.326	2.326
Z factor ($z^* = \phi^{-1}[(0.99-\delta)/(1-\delta)]$)	2.302	2.303	2.303
$X_{.99} = \max[D, \exp(\mu_n + z^*\sigma_n)]$ (AMEL	3.0	3.1	12.9

b. **Priority Pollutants.** Final WQBELs for cyanide has been determined using the methods described in Section 1.4 of the SIP. Since the water quality objectives for copper, lead, and nickel are hardness-dependent and the hardness in the Laguna de Santa Rosa, Colgan Creek and Santa Rosa Creek varies significantly, final effluent limitations for copper, lead, and nickel are determined using formulas that are based on the hardness of the receiving water at the time the discharge is sampled. The calculations for copper, lead, and nickel below use a hardness concentration of 53.5 mg/l to determine the copper effluent limitation for that single hardness value. Calculations for a range of hardness concentrations, ranging from 5 to > 400 mg/l as $CaCO_3$ are included in Attachment E-2 (copper), Attachment E-3 (lead), and Attachment E-4 (nickel).

Step 1: For each water quality criterion/objective, an effluent concentration allowance (ECA) is calculated from the following equation to account for dilution and background levels of each pollutant.

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

C = the applicable water quality criterion (adjusted for receiving water hardness and expressed as total recoverable metal, if necessary)
D = the dilution credit
B = the background concentration

Because no credit is being allowed for dilution, D = 0, and therefore, ECA = C.

Step 2: For each ECA based on aquatic life criterion/objective, the long-term average discharge condition (LTA) is determined by multiplying the ECA times a factor (multiplier), which adjusts the ECA to account for effluent variability. The multiplier varies depending 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 value of the CV. When the data set contains less than 10 sample results (which is the case for the Discharger), or 80 percent or more of the data are 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.

For example, from Table 1 of the SIP, multipliers for calculating LTAs at the 99th percentile occurrence probability for copper are 0.347 (acute multiplier) and 0.556 (chronic multiplier). LTAs are determined as follows.

Table 11. Calculations for Long Term Averages for Copper, Lead, Nickel, and Cyanide

Pollutant	ECA		ECA Multiplier		LTA (µg/L)	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Copper	7.77	5.47	0.347	0.556	2.70	3.04
Lead	36.8	1.43	0.321	0.527	11.82	0.76
Nickel	276.4	30.7	0.434	0.638	119.9	19.6
Cyanide	22.0	5.20	0.124	0.220	2.73	1.15

Step 3: WQBELs, including an average monthly effluent limitation (AMEL) and a maximum daily effluent limitation (MDEL) are calculated using the most limiting (the lowest) LTA. The LTA is multiplied times a factor that accounts for averaging periods and exceedance frequencies of the effluent limitations, and for the AMEL, the effluent monitoring frequency. For example, the CV for copper determined to be 0.546, and the sampling frequency was 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 multiplier for copper is 2.88 and the AMEL multiplier is 1.50. Final WQBELs for copper and the other pollutants with reasonable potential are calculated as follows.

Table 12. Calculations for Final WQBELs for Copper, Lead, Nickel, and Cyanide

Pollutant	LTA	MDEL Multiplier	AMEL Multiplier	MDEL (µg/L)	AMEL (µg/L)
Copper	2.70	2.88	1.50	7.77	4.04
Lead	0.76	3.11	1.55	2.36	1.17
Nickel	19.6	2.31	1.37	45.2	26.8
Cyanide	1.15	8.06	2.67	9.24	3.05

Since the hardness of the receiving waters varies significantly, from 53.5 to 316 mg/l as $CaCO_3$, setting these water quality-based effluents were be more protective than required when the receiving water hardness is higher. Regional Water Board Staff have used best professional judgment to determine that effluent limitations for these pollutants for this Discharger should be based on the receiving water hardness at the time that the discharge samples are collected. Therefore, effluent limitations for copper lead and nickel, based on the receiving water hardness, are included in Attachment E-2, Attachment E-3, and Attachment E-4 of this Order.

Step 4: When the most stringent water quality criterion/objective is a human health criterion/objective, the AMEL is set equal to the ECA, and the MDEL is calculated by multiplying the ECA times the ratio of the MDEL multiplier to the AMEL multiplier. However, for the discharge, no priority pollutants where the lowest applicable water

quality criterion was a human heath criterion was found to have reasonable potential. Therefore, there were no calculated WQBELs for these pollutants.

All WQBELs for the Discharger are summarized in the table below.

Table 13. Summary of Water Quality-based Effluent Limitations for Discharge Points 002, 003, 005, 006A, 006B, 008, 009, 012A, 012B, 014, 015, 016

Parameter	Units	Effluent Limitations [a]	
		Average Monthly	Maximum Daily
Copper	µg/L	*See Attachment E-2*	*See Attachment E-2*
Lead	µg/L	*See Attachment E-3*	*See Attachment E-3*
Nickel	µg/L	*See Attachment E-4*	*See Attachment E-4*
Cyanide	µg/L	3.05	9.23
Nitrate (as N)	mg/L	10.0	---
Total Phosphate	mg/L	3.0	---
Total Kjeldahl Nitrogen	mg/L	2.7	---

Notes:
a. Final effluent limitations for copper, lead and cyanide shall replace the interim limitations on **May 1, 2010**.
b. Final effluent limitations for copper, lead, and nickel are for total recoverable metal fraction and are determined using formulas that are based on the hardness of the receiving water at the time the discharge is sampled.
c. Final effluent limitations for total phosphate and TKN shall replace interim limitations on **November 9, 2011**.

5. Whole Effluent Toxicity (WET)

This effluent limitation is derived from the CWA and the Basin Plan. The Basin Plan states that "All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life." For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the MRP (Attachment E, Section V.).

a. **Acute Aquatic Toxicity.** The Order implements Federal guidelines (Regions 9 & 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/600/4-90/027F), 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*. Based on effluent toxicity monitoring data from January 6, 1998 to April 14, 2003, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Consequently, acute toxicity effluent limitations have been established in this Order.

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. Adequate WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective. Attachment E of this Order requires quarterly chronic WET monitoring for demonstration of compliance with the narrative toxicity objective.

No dilution has been granted for the chronic condition. Therefore, chronic toxicity testing results exceeding 1.0 chronic toxicity unit (TUc) demonstrates the discharge is in violation of the chronic toxicity effluent limitation. If the discharge demonstrates a pattern of toxicity exceeding the effluent limitation, the Discharger 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. Chronic toxicity testing results from pond discharges are summarized below in Table 14.

Table 14. Whole Effluent Chronic Toxicity Testing Results

Location	Date	*Selenastrum capricornutum*		*Ceriodaphnia dubia*		*Pimaphales promelas*			
		Growth		Reproduction		Survival		Growth	
		NOEC	TUc	NOEC	TUc	NOEC	TUc	NOEC	TUc
06A	1/6/98	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06A	4/7/98	100	< 1.0	25	4.0	25	4.0	< 25	---
06A	2/01	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06A	1/7/02	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	1/13/98	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	5/13/98	100	< 1.0	85	1.2	100	< 1.0	100	< 1.0
06B	12/98	70	1.4	100	< 1.0	100	< 1.0	100	< 1.0
06B	1/99	100	< 1.0	100	< 1.0	100	< 1.0	50	2.0
06B	4/99	100	< 1.0	100	< 1.0	25	4.0	< 25	4.0
06B	2/00	50	2.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	2/01	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	11/01	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	1/7/02	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	4/1/02	100	< 1.0	85	1.2	100	< 1.0	100	< 1.0
06B	12/16/02	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	1/6/03	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
06B	1/15/03	---	---	---	---	100	< 1.0	85	1.2
06B	4/14/03	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012A	1/6/98	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012A	10/98	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012A	2/99	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012B	1/13/98	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012B	12/98	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012B	1/99	100	< 1.0	100	< 1.0	100	< 1.0	< 25	---
012B	1/00	< 25	---	< 25	---	100	< 1.0	100	< 1.0
012B	1/01	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012B	12/5/01	100	< 1.0	100	< 1.0	50	2.0	50	2.0
012B	12/12/01	---	---	---	---	100	< 1.0	100	< 1.0
012B	3/11/02	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012B	12/17/02	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012B	1/6/03	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0
012B	1/17/03	100	< 1.0	100	< 1.0	100	< 1.0	100	< 1.0

In addition to WET monitoring, Special Provisions VI.C.2.b. requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger 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.

D. Final Effluent Limitations

1. Summary of Final Effluent Limitations Discharge Point 015

a. **Advanced Wastewater Treatment.** From the record associated with the adoption of the AWT requirement, it is clear that treatment to a "pathogen-free" level was intended. The Resolution (No. 86-148) adopting the AWT requirement and the Basin Plan explain that zero discharge of municipal wastewater is preferable to ensure protection of beneficial uses (particularly municipal/domestic supply and body contact recreation), but that advanced treatment of wastewater is the "minimum acceptable." The Resolution incorporates the recommendation of the DHS that "all municipal wastewater discharged to streams used for domestic water supply be treated to a 'pathogen free' level. 'Pathogen free' effluent is that which has been treated to advanced levels including chemical flocculation, coagulation, sedimentation, filtration, and disinfection."

The DHS recommendation referred to in the Resolution explained that "the discharge [of wastewater] should be strengthened to require a pathogen free effluent as defined in Section 60315, Title 22 Wastewater Reclamation regulations."

The Wastewater Reclamation Criteria in effect at the time stated:

"Section 60315. Nonrestricted Recreational Impoundment.

Reclaimed water used as a source of supply in a nonrestricted recreational impoundment shall be at all times an adequately disinfected, oxidized, coagulated, clarified, filtered wastewater. The wastewater shall be considered adequately disinfected if at some location in the treatment process the median number of coliform organisms does not exceed 2.2 per 100 mL and the number of coliform organisms does not exceed 23 per 100 mL in more than one sample within any 30-day period. The median value shall be determined from the bacteriological results of the last 7 days for which analyses have been completed."

In sum, the Basin Plan amendment was intended to protect beneficial uses of the Russian River and tributaries, primarily domestic water supply and contact recreation. The adopting Resolution makes it clear that the amendment was aimed to eliminate pathogens (which pose a significant threat to domestic and recreation uses) from wastewater discharges. Even at that time, Title 22 of the CCR contained the definition

of pathogen-free treatment relied on by the resolution. By requiring that the standards be defined in individual permits, the Basin Plan contemplated they would be periodically refined during permit renewals. Accordingly, the use of Title 22 as it exists today is an appropriate means to define AWT wastewater quality for the protection of beneficial uses in the Russian River and tributaries

b. Biochemical Oxygen Demand and Suspended Solids.

i. Concentration-based Limitations. For the purpose of regulating municipal waste discharges from the Santa Rosa Subregional Water Reclamation Facility to the Laguna de Santa Rosa and its tributaries, advanced wastewater treatment is defined as achieving a monthly average concentration for BOD and suspended solids of 10 mg/l and a weekly average concentration of 15 mg/l. Monthly average and weekly average concentration-based limitations are retained from the previous Order. These effluent limitations are consistent with a "pathogen free" discharge, as explained Section IV.D.1.a and are technically achievable based on the capability of a tertiary system.

The daily maximum concentration-based effluent limitations for BOD and suspended solids have been omitted in the renewed Order. This permit change is governed by 40 CFR 122.44(*l*)(1), which provides that relaxations in effluent limitations are permitted where the circumstances justifying permit modification under 40 CFR 122.62 are present. Among the several enumerated grounds is that a permit may be renewed, reissued, or modified to contain a less stringent effluent limitation if new information has become available that was not previously available that justifies the application of a less stringent effluent limitation. The maximum daily concentration limitation presents a technology requirement and is neither applicable nor required for secondary treatment under 40 CFR 133. Accordingly, this limitation is omitted from this permit because the secondary treatment limitations promulgated subsequent to the issuance of the original permit present new information not available at that time that justifies the change. Concentration-based effluent limitations required under 40 CFR 133 remain in effect.

ii. Mass-based Limitations. Mass effluent limitations for BOD and suspended solids are retained from the previous Order and are required under 40 CFR 122.45(f).

The mass-based effluent limitations for BOD and suspended solids included in this Order have been modified to be numerically higher than those included in the Discharger's previous Permit, This permit change is governed by 40 CFR 122.44(*l*)(1), which provides that relaxations in effluent limitations are permitted where the circumstances justifying permit modification under 40 CFR 122.62 are present. Among the several enumerated grounds is that, as provided in Section 122.62(a)(15), a modification is needed to "correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining

permit conditions." Pursuant to 40 CFR 122.45(b), effluent limitations for POTWs are derived for the design flow of the WWTF. Mass-based effluent limitations in the previous Permit were calculated based on average dry weather design flow of the WWTF, but did not take into account peak wet weather flows. This Order correctly calculates mass-based effluent limitations applicable during periods of wet weather flow based on wet weather design flows. Mass-based effluent limitations are to be calculated in accordance with the following:

1) During wet weather conditions when the average weekly influent flow exceeds 21.34 mgd, the weekly mass-based effluent limitations for BOD and suspended solids are calculated based on the weekly wet weather design flow using the following formula: 8.34 x Q x C, where Q is the peak weekly design flow of 64 mgd, C is the weekly concentration-based effluent limitation, and 8.34 is a conversion factor.

2) During wet weather conditions when the average monthly influent flow exceeds 21.34 mgd, the monthly mass-based effluent limitations for BOD and suspended solids are calculated based on the monthly wet weather design flow using the following formula: 8.34 x Q x C, where Q is the peak monthly design flow of 47.3 mgd, C is the monthly concentration-based effluent limitation, and 8.34 is a conversion factor.

iii. Percent Removal. In describing the minimum level of effluent quality attainable by secondary treatment, federal regulations (40 CFR 133.102) state that the 30-day average percent removal shall not be less than 85 percent. If 85 percent removal of BOD and suspended solids must be achieved by a secondary treatment plant, it must also be achieved by a tertiary (i.e., treatment beyond secondary level) treatment plant. This Order contains a limitation requiring an average of 85 percent removal of BOD and suspended solids over each calendar month.

c. Total Coliform Organisms. Consistent with Section D.1.a, above, advanced treated wastewater shall be considered adequately disinfected if it is "pathogen free." To demonstrate that the discharge is "pathogen free," the discharge must be of a quality that meets the definition of disinfected tertiary recycled water in Section 60301.230 Title 22 CCR.

d. Hydrogen Ion (pH). Effluent limitations for hydrogen ion (pH) are retained from the previous Order and are minimum treatment standards for municipal dischargers as defined in 40 CFR 133.102.

2. **Summary of Final Effluent Limitations Discharge Points 002, 003, 005, 06A, 06B, 008, 009, 012A, 012B, 014, 015, 016**

a. Copper. Final effluent limitations for copper are based on the hardness of the upstream monitoring location at the time of discharge. Attachment E-2

b. Cyanide. This Order establishes a final AMEL of 3.05 µg/l and a final MDEL of 9.23 µg/l for cyanide. Final effluent limitations for cyanide were calculated in accordance with section 1.4 of the SIP.

c. Lead. Final effluent limitations for lead are based on the hardness of the upstream monitoring location at the time of discharge. Attachment E-3

d. Nickel. Final effluent limitations for nickel are based on the hardness of the upstream monitoring location at the time of discharge. Attachment E-4

e. Nitrate. Final effluent limitations for nitrate will be derived from the Waste Load Allocation determined by the nutrient TMDL for the Laguna de Santa Rosa. If a nutrient TMDL is not completed by **November 9, 2011**, this Order establishes a final AMEL of 10.0 µg/l for nitrate. The final effluent limitation for nitrate was calculated in accordance with section 1.4 of the SIP. If, as a result of a nutrient TMDL for the Laguna de Santa Rosa, a WLA for nitrate or total nitrogen is numerically lower than 10.0 mg/l (as N), then the final WQBELs for nitrate will be determined by an approved TMDL for the Laguna de Santa Rosa or will be zero (i.e., "no net loading").

f. Total Kjeldahl Nitrogen (TKN). Final effluent limitations for TKN, or, alternatively, Total Nitrogen, will be derived from the Waste Load Allocation determined by the nutrient TMDL for the Laguna de Santa Rosa. If a nutrient TMDL is not completed by **November 9, 2011**, this Order establishes a final WQBEL of zero, or "no net loading."

g. Total Phosphate. Final effluent limitations for Total Phosphate will be derived from the Waste Load Allocation determined by the nutrient TMDL for the Laguna de Santa Rosa. If a nutrient TMDL is not completed by **November 9, 2011**, this Order establishes a final WQBEL of zero, or no net loading.

Table 15. Summary of Final Technology-based Effluent Limitations Discharge Point 015

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
BOD (20°C, 5-day)	mg/L	10	15	---	---	---	Basin Plan
Dry Weather	lbs/day	1,780	2,670	---	---	---	40 CFR 122.45(f)
Wet Weather	lbs/day	3,945	8,006	---	---	---	40 CFR 122.45(f)
Total Suspended Solids	mg/L	10	15	---	---	---	Basin Plan
Dry Weather	lbs/day	1,780	2,670	---	---	---	40 CFR 122.45(f)
Wet Weather	lbs/day	3,945	8,006	---	---	---	40 CFR 122.45(f)
Total Coliform Organisms	MPN/ 100 mL	23	2.2	---	---	240	Title 22, CCR
Hydrogen Ion	pH units	---	---	---	6	9	40 CFR 125.3(a)(1)
Percent Removal	Percent	85	---	---	---	---	40 CFR 125.3(a)(1)

Table 16. Summary of Final Water Quality-based Effluent Limitations Discharge Points 002, 003, 005, 006A, 006B, 008, 009, 012A, 012B, 014, 015, 016

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Copper	µg/L	*Attachment E-2*	---	*Attachment E-2*	---	---	40 CFR 122.45(d)(1)(i)
Lead	µg/L	*Attachment E-3*	---	*Attachment E-3*	---	---	40 CFR 122.45(d)(1)(i)
Nickel	µg/L	*Attachment E-4*	---	*Attachment E-4*	---	---	40 CFR 122.45(d)(1)(i)
Cyanide	µg/L	3.05	---	9.23	---	---	40 CFR 122.45(d)(1)(i)
Nitrate (as N)	Final WQBELs for nitrate will be the WLA determined by an approved TMDL for the Laguna de Santa Rosa or zero (i.e., "no net loading"). If a nutrient TMDL is not completed, the final WQBELs will be 10 mg/l as a monthly average.						40 CFR 122.44(d) and the Basin Plan
Total Phosphate Total Kjeldahl Nitrogen	Final WQBELs for Total Phosphate and Total Kjeldahl Nitrogen will be the WLAs determined by an approved TMDL for the Laguna de Santa Rosa or zero (i.e., "no net loading").						40 CFR 122.44(d)

E. Interim Effluent Limitations

The USEPA adopted the NTR and the CTR, which contains water quality standards applicable to this discharge. The SIP contains guidance on implementation of the NTR and CTR. The SIP, section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Water Board shall establish interim requirements and dates for their achievement in the NPDES permit. The interim limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent; include interim compliance dates separated by no more than one year, and; be included in the Provisions.

1. **Infeasibility Studies.** The Discharger submitted an Infeasibility Study for the Subregional Water Reclamation System on July 6, 2005 in response to a letter of intent from the Regional Water Board dated February 2, 2005, in which WQBELs were proposed for priority copper, lead, nickel, cyanide, beta endosulfan, gamma-BCH (lindane), and mercury. The study concluded that it is infeasible for the City to meet the proposed final effluent limitations and requested that the Regional Water Board establish interim effluent limitations for these pollutants in the Discharger's renewed NPDES permit. The Discharger's conclusions are based on a comparison of effluent monitoring data from the Laguna treatment facility to the proposed final effluent limitations for beta endosulfan, gamma-BCH (lindane), and mercury indicated in the letter of intent and final effluent limitations for copper, lead, and nickel based on a receiving water hardness of 53.5 mg/l as $CaCO_3$. The establishment of a compliance schedule and interim limitations is authorized under Sections 2.1 and 2.2 of the SIP upon receipt of additional information documenting possible source control efforts, pollutant minimization actions, and facility improvements.

   Regional Water Board staff have reviewed the Infeasibility Study and recommend approval of the Discharger's request interim requirements, including effluent limitations, for copper, lead, cyanide. The SIP requires the numeric interim effluent limitation to be based on either current treatment facility performance, or on the previous Order's limitation, whichever is more stringent. For this Order, interim limitations were derived for copper, lead, and cyanide based on treatment facility performance using the monitoring results of effluent samples from 1998 through 2004. Based on information provided in the infeasibility report and best professional judgment, the determination of reasonable potential and the proposed WQBELs for beta endosulfan, gamma-BCH (lindane), and mercury were withdrawn, as explained in Section IV.C.3.d.

On July 10, 2006, the Discharger submitted an Infeasibility Study and proposed compliance schedule for nitrate. The study concluded that it is infeasible for the City to immediately meet the proposed final effluent limitations and requested that the Regional Water Board establish interim effluent limitations for these pollutants and a time schedule to meet the final effluent limitations for nitrate in the Discharger's renewed NPDES permit. The conclusion is based on a comparison of effluent monitoring data from permitted discharge locations from January 2000 to April 2006 and the proposed final limits. A compliance schedule is allowed because the nitrate water quality objective in the Basin Plan is newly interpreted as an effluent limitation rather than a receiving water limitation. The Discharger requested a five year time schedule to complete studies necessary to achieve compliance with final nitrate effluent limitations and demonstrated that this is the shortest feasible period of time for completing such studies based on an economic and financial feasibility analysis.

2. **Copper.** The Discharger is unable to immediately comply with the final limitations. Based on a review of results of samples collected from effluent storage ponds from 1998 to 2005, the discharge would have exceeded the final AMEL (based on hardness at the time of discharge) for 24 monthly samples and the final MDEL for 3 monthly samples. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion.

   Interim performance-based effluent limitations were calculated using the methods and concepts described in Appendix E of the TSD. For copper, the upper 99th percentile limit of a delta lognormal sample distribution was calculated using available data reported as detected and nondetected and assuming weekly monitoring of the discharge. The upper 99th percentile limit of 16.3 µg/l was then established as an interim performance-based average monthly limitation. Other interim requirements and the time schedule to achieve final effluent limitations for copper are specified in Section VI.C.3.

3. **Cyanide.** The Discharger is unable to immediately comply with the final effluent limitations. The upper 99th percentile limit of a delta lognormal sample distribution of effluent data was calculated using the methods and concepts described in Appendix E of the TSD. The upper limit was then compared to the proposed final effluent limits for cyanide to determine whether the Discharger could reasonably be expected to immediately comply with the proposed final limitation. In addition, in the Report of Waste Discharge, the Discharger hypothesized that the presence of cyanide in the treatment facility's effluent might be a result of degradation of thiocyanate by chlorination and ultraviolet light irradiation to yield cyanide. To support this

theory, the Discharger cited a recent study conducted by the Water Environment Research Foundation, "Cyanide Formation and Fate in Complex Effluents and its Relation to Water Quality Criteria" that found that thiocyanate may contribute to the production of cyanide at wastewater treatment facilities. Therefore based on the Discharger's inability to consistently meet the final limits based on previous treatment facility performance and on uncertainty surrounding the impact of the formation of thiocyanate on the concentration of cyanide in the discharge, the Regional Water Board has concluded that it is infeasible for the Discharger to immediately comply with the proposed final limitations for cyanide.

The upper 99th percentile limit of a delta lognormal sample distribution of effluent data was calculated using the methods and concepts described in Appendix E of the TSD. Interim performance-based effluent limitations were then established by using the upper 99th percentile limit of 14.3µg/l as an interim performance-based average monthly limitation. Other interim requirements and the time schedule to achieve final effluent limitations for cyanide are specified in Section VI.C.4.

4. **Lead.** Regional Water staff reviewed of the results of samples collected from treated effluent and effluent storage ponds from 1998 to 2005. Because hardness data corresponding to effluent sample collection and a high percentage of sample results are reported as non-detected at a detection limit greater than the projected AMEL, it is unclear whether the Discharger can immediately comply with proposed WQBELs based on existing information. However, Regional Water Board staff simulated a compliance evaluation using the maximum effluent concentration (MEC) of 5.8 µg/l and receiving water hardness at the time copper samples were collected. The results of the simulation indicate that, had the proposed hardness-based effluent limitations been in place and assuming the MEC occurred every day of sampling, the discharge would have violated the hardness-based AMEL in 98 out of 104 samples. The MDEL would have been exceeded in 3 out of 104 samples. Based on this assessment, Regional Water Board staff concludes that it may be infeasible for the Discharger to immediately comply with the proposed final limitations for lead.

   Interim performance-based effluent limitations were calculated using the methods and concepts described in Appendix E of the TSD. For lead, the upper 99th percentile limit of a delta lognormal sample distribution was calculated using available data reported as detected and nondetected and assuming weekly monitoring of the discharge. The upper 99th percentile limit of 5.6 µg/l was then established as an interim performance-based average monthly limitation.

5. **Nickel.** The upper 99% percentile limit of a delta lognormal sample distribution of effluent data was calculated using the methods and concepts described in Appendix E of the TSD. In a simulation, the upper limit was then compared to theoretical effluent limits for nickel had the proposed hardness-based effluent limitations been in place to determine whether the Discharger could reasonably be expected to immediately comply with the proposed final limitation. Regional Water Board staff have determined that based on the calculated upper 99th percentile limit of 14.3 µg/l, the Discharger will be able to immediately comply with the final effluent limitations. Accordingly, interim performance-based effluent limitations have not been established in this Order for nickel.

6. **Total Kjeldahl Nitrogen**. Concentration-based interim limitations for TKN are based on treatment facility performance using the monitoring results of storage pond effluent samples from January 2003 to May 2006. A description of the calculations for performance-based effluent limitations for TKN is contained in Section IV.C.4.a.ii of this Fact Sheet. The performance-based interim AMEL for TKN is 3.0 mg/l.

7. **Total Phosphate**. Concentration-based interim limitations for TKN are based on treatment facility performance using the monitoring results of storage pond effluent samples from January 2003 to May 2006. A description of the calculations for performance-based effluent limitations for TKN is contained in Section IV.C.4.a.ii of this Fact Sheet. The performance-based interim AMEL for Total Phosphate is 3.1 mg/l.

8. **Nitrate**. Concentration-based interim limitations for nitrate are based on existing treatment performance using effluent sample data from January 2003 to May 2006. Treatment plant performance was determined as the upper 99th percentile limit of a delta lognormal sample distribution of effluent data. A description of the calculations for performance-based effluent limitations for nitrate is contained in Section IV.C.4.a.ii of this Fact Sheet. The performance-based interim AMEL for nitrate is 12.9 mg/l.

9. **Total Nitrogen and Total Phosphate.** This Order establishes a seasonal mass-based interim limitation of 270,336 pounds per season for Total Nitrogen and a seasonal mass-based limitation of 48,142 pounds per season for Total Phosphate. These interim effluent limitations are calculated using available discharge monitoring data from storage ponds from November 2003, when the discharge of treated wastewater to the Geysers Steamfields was initiated, to May 2006. This period of time best characterizes the current discharge regime for the purpose of determining existing level of performance and interim performance-based limitations for Total Nitrogen and Total Phosphate.

Table 17 provides a summary of the monthly mass emission rates for Total Nitrogen and Total Phosphate for the months of reported discharge since November 2003. This summary forms the basis for the calculation of the current level of mass emission for the discharge season. The calculated seasonal mass emission rate, indicated in Table 18, is the sum of the maximum observed mass emission for each month in Table 17.

Table 17. Mass Emission Rates for Total Nitrogen and Total Phosphate

Month/Year	Location	Total Discharge Flow Mgal/ month	Total Nitrogen		Total Phosphate	
			Avg. Concentration mg/L	Mass Load lbs/month	Avg. Concentration mg/L	Mass Load lbs/month
Nov 2003	Kelly Pond	3.4	5.0	142	2.0	57
	LagunaWetlands	5.1	11.2	476	2.8	119
			Σ	618	Σ	176
Dec 2003	Kelly Pond	15	6.8	834	2.2	267
	D-Pond 36”	575	9.1	43,425	2.2	10,641
	LagunaWetlands	23	8.9	1,663	1.9	357
			Σ	45,921	Σ	11,264
Jan 2004	Kelly Pond	14	4.9	569	1.6	190
	D-Pond 36”	445	9.6	35,578	1.4	5,199
	LagunaWetlands	22	11.6	2,148	1.7	310
			Σ	38,295	Σ	5,699
Feb 2004	Kelly Pond	13	8.6	897	1.8	190
	D-Pond 36”	323	11.0	29,514	1.9	5,023
	LagunaWetlands	20	10.3	1,735	1.8	296
			Σ	32,147	Σ	5,510
March 2004	Kelly Pond	18	7.3	1,123	1.8	270
	D-Pond 36”	45	11.7	4,333	1.9	688
			Σ	5,457	Σ	958
Jan 2005	Kelly Pond	16	5.8	746	1.6	211
	D-Pond 36”	237	9.5	18,735	2.8	5,476
			Σ	19,480	Σ	5,687
Feb 2005	Kelly Pond	14	8.7	1,042	2.0	240
Mar 2005	Kelly Pond	19	7.4	1,191	1.8	285
	D-Pond 36”	370	9.7	30,026	2.1	6,549
			Σ	31,218	Σ	6,834
Apr 2005	D-Pond 36”	84	11.2	7,856	2.2	1,543
	LagunaWetlands	0.3	10.5	26	1.5	3.8
			Σ	7,882	Σ	1,547
May 2005	D-Pond 36”	162	10.3	13,933	2.3	3,111
Jan 2006	A-Pond	73	7.2	4,335	0.9	546
	D-Pond Incline	222	9.3	17,188	1.1	1,979
	D-Pond 36”	530	8.8	38,905	1.2	5,305
	Delta Pond 48”	313	7.6	19,800	1.2	3,082

Month/Year	Location	Total Discharge Flow Mgal/ month	Total Nitrogen		Total Phosphate	
			Avg. Concentration mg/L	Mass Load lbs/month	Avg. Concentration mg/L	Mass Load lbs/month
			Σ	94,161	Σ	14,023
Mar 2006	Delta Pond 48"	430	10.3	36,776	1.7	6,099
Apr 2006	Delta Pond 48"	484	10.9	43,797	1.7	6,660
	Brown Pond	68	5.3	2,984	1.0	563
			Σ	46,780	Σ	7,223
May 2006	Delta Pond 48"	6.8	11.2	635	1.8	102

Table 18. Monthly Maximum Mass Emission Rates

lbs/month	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Total lbs/season**
Total N	618	45,921	94,161	32,147	36,776	46,780	13,933	270,336
Total P	176	11,264	14,023	5,510	6,099	7,223	3,111	48,142

F. Land Discharge Specifications

This section of the standardized Order form is not applicable to the Santa Rosa Subregional Water Reclamation System.

G. Reclamation Specifications

1. **Filtration Rate.** This provision requires that wastewater be filtered at a rate that does not exceed 5 gallons per minute per square foot of filter surface area, and is 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 demonstrate that recycled water has been coagulated and adequately filtered for removal of wastewater pathogen and for conditioning of water prior to ultraviolet light disinfection processes. Properly designed and operated effluent filters will meet this standard.

2. **Turbidity.** This provision 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, and is 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. The point of compliance for the turbidity requirements is a point following the effluent filters and before discharge to the disinfection system.

3. **Reclamation Capacity.** This Order requires that the Discharger maintain, at a minimum, a total reclamation capacity of 4,015 million gallons for Geysers recharge, and maintain the capability to irrigate 2,590 million gallons per year. This provision implements the Regional Water Board's intent for continued application of the Interim Action Plan (1986-1990) for the Santa Rosa Area, which was included in the Basin Plan in 1987 through Regional Water Board Resolution No. 87-58. This Provision is retained from the previous Order.

4. **Reclamation Operation**. This Order requires that the Discharger operate its recycled water storage and disposal according to the *Geysers Discharge Management Plan*. This provision implements the Regional Water Board's intent for continued application of the Interim Action Plan (1986-1990) for the Santa Rosa Area, which was included in the Basin Plan in 1987 through Regional Water Board Resolution No. 87-58. This Provision is retained from the previous Order.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

1. CWA section 303(a-c) requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The 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, and agricultural supply.

2. Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, bacteria and radioactivity. The chemical constituent objective states groundwater shall not contain chemical constituents in excess of the limits specified in Code of California Regulations, Title 22, Division

4, Chapter 14, Article 4, Section 64435, Tables 2 and 3, and Section 64444.5 (Table 5) and listed in Table 3-2 of the Basin Plan. Numerical objectives for certain constituents for individual groundwaters are contained in Table 3-1 of the Basin Plan. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The bacteria objective prohibits coliform organisms at or above 1.1 MPN/100 ml.

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

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

40 CFR 122.48 requires all NPDES permits to specify recording and reporting of monitoring results. CWC Sections 13267 and 13383 authorize the regional water boards to require technical and monitoring reports. The MRP, Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

Influent wastewater monitoring for the WWTF is required in this Order. NPDES regulations at 40 CFR 133 define secondary treatment to include 85 percent removal of BOD_5 and TSS during treatment. Monitoring of influent for these pollutant parameters, in addition to effluent, is required to monitor compliance with this standard of performance. Influent monitoring requirements are contained in Attachment E, Section III.A, of the MRP.

B. Effluent Monitoring

Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. In addition, routine monitoring of the effluent and the receiving water for priority pollutants is required to periodically assess the reasonable potential of the discharge to cause or contribute to an exceedance of CTR criteria. The frequency of routine monitoring for priority pollutants is determined using best professional judgment, with consideration given to the nature of the individual pollutant, the past record of detections in the effluent, and likelihood of the presence of the pollutant in the discharge. Effluent monitoring requirements are contained in Attachment E, Section IV of the MRP.

C. Whole Effluent Toxicity Testing Requirements

1. Acute Toxicity

a. **Rationale.** Monthly 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity (Effluent Limitations IV.A.1.e).

b. **Test Frequency** - The USEPA recommends monthly WET testing for facilities listed as "major facilities" and quarterly testing for "minor facilities." (*Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*, USEPA, 1996) If WET limits are required, federal regulations (40 CFR 122.44(i)(2) requires a minimum frequency of annual. For small municipalities, not designated as "major facilities," the USEPA recommends at least one suite of tests to be conducted during the lifetime of the permit and prior to reissuance in order to assess reasonable potential.

This Order specifies monthly routine monitoring for acute toxicity because the facility is listed as a NPDES major facility, and the effluent has exhibited acute toxicity on at least three occasions since 1998.

c. **Sample Location** – Representative effluent samples shall be collected at Discharge Points 002, 003, 005, 06A, 06B, 008, 009, 012A, 012B, 014, 015, and 016, when discharging to surface water.

d. **Sample Type** – This Order specifies a 96-hour static renewal or static non-renewal test as described in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (USEPA Report No. EPA 600/4-90-027F, 4th edition or subsequent editions. Upon request, other methods may be approved by the Regional Water Board Executive Officer.

e. **Test Species** – This Order requires the Discharger to conduct acute toxicity tests with the water flea, *Ceriodaphnia dubia*, and the rainbow trout, *Oncorhychus mykiss*, for at least two suites of tests. For the first two suites of acute toxicity tests, the Discharger will determine the most sensitive aquatic species and continue to monitor with the most sensitive species. At least once every five years, the Discharger will re-screen to re-confirm the most sensitive species for the acute toxicity test.

f. **Test Method** – The presence of acute toxicity shall be estimated as specified in effluent limitation IV.C.c and shall be consistent with *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (USEPA Report No. EPA

600/4-90-027F, 4th edition or subsequent editions), or other methods approved by the Executive Officer.

g. **Dilution Water** – Acute toxicity tests shall be conducted using undiluted effluent.

h. **Accelerated Monitoring** - The provision requires accelerated acute toxicity testing when a regular acute toxicity test result exceeds the single sample effluent limitation. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Under this provision, the Discharger is required to conduct at least two additional samples, one within 14 days, and one within 21 days of receiving the initial sample result. If any of the additional samples do not comply with the three sample median minimum limitation (90 percent survival) using that sample result and the two previous sample results, the Discharger shall initiate a TRE. If any test of a sample is ruled invalid, the Discharger will re-sample within 7 days following notification of test invalidation.

2. Chronic Toxicity

a. **Rationale.** Quarterly chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

b. **Test Frequency** - The USEPA recommends monthly WET testing for facilities listed as "major facilities" and quarterly testing for "minor facilities." (*Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*, USEPA, 1996) If WET limits are required, federal regulations (40 CFR 122.44(i)(2) requires a minimum frequency of annual. For small municipalities, not designated as "major facilities," the USEPA recommends at least one suite of tests to be conducted during the lifetime of the permit and prior to reissuance in order to assess reasonable potential.

This Order specifies quarterly routine monitoring for chronic toxicity because the facility is listed as a NPDES major facility, and the effluent has exhibited chronic toxicity on at least six occasions since 1998.

c. **Sample Location** - Representative effluent samples shall be collected at Discharge Points 002, 003, 005, 06A, 06B, 008, 009, 012A, 012B, 014, 015, and 016, when discharging to surface water.

d. **Sample Type** – This Order specifies a 96-hour static renewal or static non-renewal test as described in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October 2002.

e. **Test Species** – This Order the Discharger to conduct short-term tests with the water flea, *Ceriodaphnia dubia* (survival and reproduction test), the fathead minnow, *Pimephales promelas* (larval survival and growth test), and the green alga, *Selenastrum capricornutum* (growth test). Initially, the Discharger is required to determine the most sensitive test species and monitor the discharge for chronic toxicity using that species for no more than five years, whereupon, the Discharger will repeat the screening procedure to confirm the most sensitive species. If reasonable potential to exceed the narrative water quality objective is found to exist, the Permit may be reopened to include a chronic toxicity limitation, as appropriate. The Basin Plan does not allow a mixing zone for this discharge; therefore, reasonable potential will be based on results of chronic toxicity tests from samples collected at the end of the pipe.

f. **Test Method** – The presence of chronic toxicity shall be estimated as specified in and shall be consistent with *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October, 2002.

g. **Dilution water** - Control and dilution water should be receiving water at a location immediately upstream and outside the influent of the outfall. Laboratory water may be substituted for receiving water, as described in the manual, upon approval by the Regional Water Board Executive Officer.

h. **Accelerated Monitoring** - The provision requires accelerated WET testing when a regular WET test result exceeds the effluent limitation or monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

   The provision requires accelerated monitoring consisting of four chronic toxicity tests every two weeks using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics*

Control, EPA/505/2-90-001, March 1991 (TSD). The TSD at page 118 states, "EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Regional Water Board Executive Officer may require that the Discharger initiate a TRE.

i. **Monitoring Trigger.** A numeric toxicity monitoring trigger of > 1.0 TUc (where TUc = 100/NOEC) is applied in the provision, because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 100% effluent.

D. Receiving Water Monitoring

1. **Surface Water.** Receiving water monitoring is required to demonstrate compliance with the Receiving Water Limitations. Compliance with receiving water limitations will be demonstrated by grab and/or continuous monitoring samples or measurements taken upstream and at the point of discharge in the Laguna de Santa Rosa, Santa Rosa Creek, Colgan Creek, or the Laguna constructed wetlands, when discharging to surface water. For the purpose determining compliance with receiving water limitations, the point of discharge is defined as the location at which the treated effluent enters the receiving water body. Monitoring samples or measurements shall be obtained at the point of discharge before the monitored flow is diluted by any other waste stream, body of water, or substance and prior to initial or secondary mixing with ambient receiving waters. The upstream monitoring samples or measurements shall be representative of upstream conditions and shall be obtained at a location as close to the point of discharge as practicable.

   The Regional Water Board allowed the Discharger the option to submit an alternative receiving water monitoring program within 180 days of the permit adoption date that could contain receiving water monitoring locations different than those prescribed above. The program must be acceptable to the Executive Officer and demonstrate compliance with the Order to the satisfaction of the Executive Officer. If an acceptable alternative program proposal is not timely received and approved by the Executive, the downstream receiving water monitoring locations specified in the MRP, and described in the previous paragraph, shall become effective immediately. In

the interim, the Discharger shall comply with the interim receiving water monitoring requirements using receiving water monitoring locations specified in Attachment E-5 of the MRP.

2. **Groundwater.** Groundwater monitoring of irrigated land is required to demonstrate compliance with the Groundwater Limitations. The Discharger is required to submit a groundwater monitoring program within 180 days of the effective date of this Order.

E. Other Monitoring Requirements

1. **Water Reclamation System (Tertiary Filters).** Monitoring of the surface loading rate and effluent turbidity of the tertiary filters is required to demonstrate compliance with Sections 60301.230 and 60301.320 of Title 22 CCR requirements for filtered and disinfected tertiary recycled water.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** In accordance with 40 CFR section 122.41and 122.42, the Federal Standard Provisions provided in Attachment D of this Order apply to this discharge.

2. **Regional Water Board Standard Provisions.** In addition to the Federal Standard Provisions (Attachment D), the Discharger must comply with the Regional Water Board Standard Provisions provided in Standard Provisions VI.A.2.

B. Special Provisions

1. Reopener Provisions

a. **Standards Revisions (Special Provisions VI.C.1.a).** Conditions that necessitate a major modification of a permit are described in 40 CFR section 122.62, which include the following:

i. When standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision. Therefore, if revisions of applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such revised standards.

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

b. **Reasonable Potential (Special Provisions 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 Discharger 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 Provisions VI.C.1.c).** This Order requires the Discharger 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. **Biostimulatory Substances (Special Provisions VI.C.1.d).** If a TMDL program is adopted, this Order may be reopened and the effluent limitations for TKN and Total Phosphate modified. If the Regional Water Board determines that an offset program or other program to minimize the impact of biostimulatory substances is feasible for dischargers subject to a NPDES permit, then this Order may be reopened to reevaluate the effluent limitations for TKN and Total Phosphate and the need for a program for the Discharger.

e. **Filter Loading Rate (Special Provisions VI.C.1.e)**. The Discharger is participating in a study being conducted by the California Department of Health Services (DHS) regarding filter loading rates for filtered wastewater. This Order may be reopened and modified to incorporate a revised filter loading rate in the event that DHS revises Title 22 regulations to require a different filter loading rate as a result of the study.

f. **Special Studies (Special Provisions VI.C.1.f)**. The Discharger is studying the feasibility of the use of water effect ratios and mixing zones to meet water quality objectives and effluent limitations for toxic pollutants. If these or other future water quality studies provide new information and a basis for determining that a permit condition or

conditions should be modified, the Regional Water Board may reopen this Order and make appropriate modifications to this Order.

g. **Alternative Final Limitations for Biostimulants (Special Provisions VI.C.1.g).** The Order establishes final water quality effluent limitations for biostimulants that will be derived from the waste load allocation determined by the nutrient TMDL for the Laguna de Santa Rosa. If a nutrient TMDL is not completed by November 9, 2011, this Order establishes a final WQBEL of no net loading. A "no net loading" effluent limit may be met by: 1) reducing the effluent concentration below detectable levels through source control and/or treatment; 2) reducing loads through recycling/reclamation; and/or 3) reducing loads elsewhere in the watershed by an amount at least equal to the amount discharged (and of equivalent bioavailability) through an approved offset program.

This reopener provides that if the Discharger completes a special study justifying alternative final numerical limitations for biostimulants that demonstrates that the discharge, if alternative limitations are allowed, will not cause, or have the potential to cause or contribute to an excursion of applicable water quality objectives for biostimulants in the Laguna de Santa Rosa or its tributaries, the Regional Water Board may reopen this Order and make modifications to the alternative final limit, in accordance with 40 CFR 122.62.

2. Special Studies and Additional Monitoring Requirements

a. **Toxicity Reduction Evaluations (Special Provisions 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, Special Provisions VI.C.2.a. requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The TRE is initiated by evidence of a pattern of toxicity demonstrated through the additional effluent monitoring provided as a result of an accelerated monitoring program.

TRE Guidance. The Discharger is required to prepare a TRE Work Plan in accordance with USEPA guidance. Numerous guidance documents are available, as identified below:

1. *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants,* (EPA/833B-99/002), August 1999.

2. *Generalized Methodology for Conducting Industrial TREs,* (EPA/600/2-88/070), April 1989.

3. *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures,* Second Edition, EPA 600/6-91/005F, February 1991.

4. *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA 600/6-91/005F, May 1992.

5. *Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting acute and Chronic Toxicity,* Second Edition, EPA 600/R-92/080, September 1993.

6. *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/081, September 1993.

7. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, EPA-821-R-02-012, October 2002.

8. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, EPA-821-R-02-013, October 2002.

9. *Technical Support Document for Water Quality-based Toxics Control,* EPA/505/2-90-001, March 1991

3. Best Management Practices and Pollution Prevention

a. **Pollution Minimization Plan.** Provision VI.C.3 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 effluent at a concentration greater than an applicable effluent limitation.

4. Compliance Schedules

a. Copper

The Discharger currently conducts a comprehensive monitoring program to comply with the existing copper limitation. Monitoring samples are collected monthly from each storage pond when discharging from that pond. In addition, the Discharger monitors the treatment plant influent and effluent copper concentrations on a quarterly basis. The Discharger also implements a rigorous pretreatment program to monitor and control influent copper loading from industrial sources.

The final effluent limitations for copper in this Order are based on a mathematical formula that will effectively establish a more stringent limitation than in the previous Order. To comply with the more stringent copper limitations, the Discharger has committed to implementing addition measures as interim requirements (Table 19), in addition to meeting performance-based interim limitations.

The intent of the compliance schedule is to further evaluate potential reductions in effluent copper concentrations through source control. If this approach does not yield significant copper reductions, then the Discharger will evaluate the feasibility of treatment plant upgrades to remove copper from the treated effluent.

Table 19. Copper Compliance Schedule

Task	Compliance Date
Discharger shall complete an evaluation to determine potential sources of copper	June 1, 2007
Discharger shall complete an evaluation of local limits for copper and, if appropriate, revise local limits, implemented pursuant to its Pretreatment program, based on identified sources	December 1, 2007
Discharger shall update its source control program, if necessary, to reflect any revision local limits. This step will include providing a period of time to allow industrial users to come into compliance with their new limits.	June 1, 2008
Discharger shall evaluate compliance with new local limits and evaluate whether further copper reductions are necessary	May 31, 2009
Discharger shall, if necessary, complete an	December 1, 2009

Task	Compliance Date
engineering treatment feasibility studies examining the feasibility, costs and benefits of different treatment options that may be required to remove copper.	
Discharger shall comply with the final effluent limitations for copper.	May 1, 2010

The Discharger is also developing a discharger-specific Water Effects Ratio (WER) that would adjust the CTR water quality criterion for copper to a criterion appropriate for the Laguna de Santa Rosa and other receiving waters. If the discharger-specific WER is approved by the Regional Water Board and the site-specific criterion is higher than the CTR criterion such that it can be determined that the discharge does not have reasonable potential to cause and exceedance of the site-specific criterion, then WQBELs for copper would be amended accordingly.

b. **Lead**

The Discharger currently monitors the lead concentration in treatment plant influent and effluent and, when discharging, its storage pond discharge. The Discharger also implements a pretreatment source control program for lead to monitor and control influent loading from industrial sources.

This Order establishes new WQBELs for lead. The Discharger has sufficiently demonstrated that it cannot immediately meet these final effluent limitations. To comply with the new lead effluent limitations, the Discharger has committed to implementing addition measures as interim requirements (Table 20), in addition to meeting performance-based interim limitations.

The intent of the compliance schedule is to further evaluate potential reductions in effluent lead concentrations through the new identification of possible sources of lead. If this approach does not yield significant lead reductions, then the Discharger will evaluate the feasibility of treatment plant upgrades to remove lead from the treated effluent.

Table 20. Lead Compliance Schedule

Task	Compliance Date
Discharger shall complete an evaluation to determine potential sources of lead	June 1, 2007
Discharger shall complete an evaluation of	December 1, 2007

Task	Compliance Date
local limits for lead and, if appropriate, revise local limits, implemented pursuant to its Pretreatment program, based on identified sources	
Discharger shall update its source control program, if necessary, to reflect any revision local limits. This step will include providing a period of time to allow industrial users to come into compliance with their new limits.	June 1, 2008
Discharger shall evaluate compliance with new local limits and evaluate whether further lead reductions are necessary	May 31, 2009
Discharger shall, if necessary, complete an engineering treatment feasibility studies examining the feasibility, costs and benefits of different treatment options that may be required to remove lead.	December 1, 2009
Discharger shall comply with the final effluent limitations for lead.	May 1, 2010

c. **Cyanide**

The Discharger currently monitors the cyanide concentration in treatment plant influent and effluent and, when discharging, its storage pond discharge. The Discharger also implements a rigorous pretreatment program to monitor and control influent loading of metals and other industrial and commercial pollutants, including cyanide, from industrial sources.

This Order establishes new WQBELs for cyanide. The Discharger has sufficiently demonstrated that it cannot immediately meet these final effluent limitations. To comply with the new cyanide effluent limitations, the Discharger has committed to implementing addition measures as interim requirements (Table 21), in addition to meeting performance-based interim limitations.

The intent of the compliance schedule is to assess existing and potential sources of cyanide in the treatment plant influent and to further evaluate the possibility that cyanide concentrations detected in the effluent are produced as a result of chemical reactions during treatment. Once all sources of cyanide are identified, the Discharger will implement additional source control activities to monitor and control cyanide, and, if necessary,

thiocyanate in the treatment plant influent. More detail about the activities included in the compliance schedule are contained in *Infeasibility Study (for Anticipated Limits for Priority Pollutants)*, submitted by the Discharger on July 6, 2005.

Table 21. Cyanide Compliance Schedule

Task	Compliance Date
Discharger shall complete an evaluation of analytical methodology for cyanide.	November 1, 2007
Discharger shall complete an evaluation of the effect of thiocyanate in its influent and its contribution to total cyanide in its effluent.	November 1, 2007
Discharger shall complete an evaluation to determine potential industrial users of thiocyanate.	November 1, 2008
Discharger shall, if necessary, develop and implement a source control program to control thiocyanate in its influent.	November 1, 2009
Discharger shall comply with the final effluent limitations for cyanide.	May 1, 2010

d. **Nitrate**

The Discharger currently monitors the nitrate concentration in treatment plant influent and final effluent and, when discharging, its storage pond discharge. The Discharger has undertaken significant steps to reduce nitrogen concentrations in its effluent and to reduce nutrient loading to the Laguna de Santa Rosa. Activities currently underway or completed include improvements to activated sludge process to achieve partial denitrification, increased water recycling, diversion of effluent to the Geysers Steamfields, and development and implementation of programs involving source control, water conservation, and stormwater.

This Order establishes a new WQBEL for nitrate, based on the drinking water standard of 45 mg/l (or 10 mg/l as N). The Discharger has sufficiently demonstrated that it cannot immediately meet these final effluent limitations. To comply with the new nitrate effluent limitations, the Discharger has committed to implementing addition measures as interim requirements (Table 22), in addition to meeting performance-based interim limitations. The tasks in the compliance schedule for nitrate also incorporate measures to meet potential, numerically lower final limitations for biostimulatory substances, a pollutant group that includes nitrate. Final effluent limitations for nitrate will be determined by the

waste load allocation derived from the nutrient TMDL for the Laguna de Santa Rosa , which will be based on biostimulatory WLA or the established drinking water standard whichever is numerically lower, or zero (i.e., "no net loading".)

Table 22. Nitrate Compliance Schedule

Task	Compliance Date
Discharger shall submit a written progress report summarizing 1) the status of the preliminary treatment plant improvement evaluations, the treatment plant optimization evaluation, and the mixing zone evaluation, and 2) the status of source control efforts to reduce nitrate loading in the Laguna de Santa Rosa.	May 20, 2007
Discharger shall submit a report describing the status of source control efforts to reduce nitrate loading in the Laguna de Santa Rosa, and 2) the findings of the treatment plant improvement and optimization evaluations and the preliminary mixing zone evaluation, and 3) any additional efforts to meet final limitations.	February 20, 2008
Annually, the Discharger shall submit a written progress report discussing its progress in complying with final effluent limitations.	September 20, 2008 September 20, 2009 September 20, 2010 September 20, 2011

e. **Biostimulatory Substances**

The Discharger currently monitors the nitrate concentration in treatment plant influent and final effluent and, when discharging, its storage pond discharge. The Discharger has undertaken significant steps to reduce nitrogen concentrations in its effluent and to reduce nutrient loading to the Laguna de Santa Rosa. Activities currently underway or completed include improvements to activated sludge process to achieve partial denitrification, increased water recycling, diversion of effluent to the Geysers Steamfields, and development and implementation of programs involving source control, water conservation, and stormwater.

This Order establishes new WQBELs for biostimulatory substances, expressed in the Order as Total Kjeldahl Nitrogen and Total Phosphate. The Discharger has sufficiently demonstrated that it cannot immediately

meet these final effluent limitations. To comply with the new effluent limitations, the Discharger has committed to implementing additional measures as interim requirements (Table 23), in addition to meeting performance-based interim limitations that are calculated to prevent further degradation of the receiving waters as a result of the discharge.

The intent of the proposed compliance schedule for biostimulatory substances is to require the Discharger to document incremental progress toward meeting final effluent limitations for biostimulatory substances.

Table 23. Compliance Schedule for Biostimulatory Substances

Task	Compliance Date
Annually, the Discharger shall submit a written progress report discussing its progress in complying with final effluent limitations and documenting measurable reduction in nutrient loading to the Laguna de Santa Rosa.	September 20, 2007 September 20, 2008 September 20, 2009 September 20, 2010 September 20, 2011

5. Construction, Operation, and Maintenance Specifications

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.a.i. of the permit, is an integral part of a well-operated and maintained facility.

6. Special Provisions for Municipal Facilities (POTWs Only)

The Regional Water Board includes standard provisions in all NPDES permits for municipal wastewater treatment facilities regarding wastewater collection systems, sanitary sewer overflows, source control, sludge handling and disposal, operator certification, and adequate capacity. These provisions assure efficient and satisfactory operation of municipal wastewater collection and treatment systems.

a. **Wastewater Collection System**

i. Statewide General WDRs for Sanitary Sewer Systems

The Discharger is required to enroll under Statewide General WDRs for Sanitary Sewer Systems (State Water Board Order No. 2006-0003-DWQ) by November 2, 2006. Once enrolled, the

Discharger will be required under terms of the General Order to develop and implement a Sewer System Management Plan.

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(l)(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

Order No. 2006-0003-DWQ includes a Reporting Program that requires the Discharger, beginning May 2, 2007, to report SSOs to an online SSO database administered through the California Integrated Water Quality System (CIWQS) and telefax reporting when the online SSO database is not available. The goal of these provisions is to ensure appropriate and timely response by the Discharger to sanitary sewer overflows to protect public health and water quality.

The Order also includes reporting provisions (Provision VI.C.6.(a)(ii) and Attachment D subsections 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.

The Order establishes oral reporting limits for SSOs. SSOs less than 100 gallons are not required to be reported orally, while SSOs greater than or equal to 100 gallons must be reported orally to the Regional Water Board. Inevitably, minor amounts of untreated or partially treated wastewater may escape during carefully executed routine operation and maintenance activities. This Order establishes a reasonable minimum volume threshold for oral notifications. It has been the experience of Regional Water Board staff that SSOs to land that are less than 100 gallons are not likely to have a material effect on the environment or public health. Larger volumes in excess of 100 gallons may indicate a lack of proper operation and maintenance and due care, and pose more of a threat to the environment or public health. All SSOs, regardless of volume, must be electronically reported pursuant to State Water Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems.

b. **Pretreatment of Industrial Waste.** Section 402(b)(8) of the CWA requires that POTWs receiving pollutants from significant industrial sources subject to section 307(b) standards establish an industrial pretreatment program to ensure compliance with these standards. The implementing regulations at 40 CFR 403.8(a) state, "any POTW (or combination of POTWs operated by the same authority) with a total design flow greater than 5 million gallons per day (mgd) and receiving from industrial users pollutants which pass through or interfere with the operation of the POTW or are otherwise subject to pretreatment standards will be required to establish a POTW pretreatment program unless the NPDES State exercises its option to assume local responsibilities as provided in 403.10(e)." The Santa Rosa Subregional Water Reclamation Facility is subject to pretreatment standards as described in section 307(b) of the CWA and 40 CFR 403.8(a).

c. **Sludge Requirements.** 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, Division 2, of the CCR. The Discharger has indicated that that all screenings, sludges, and solids removed from the liquid waste stream, excluding biosolids that are beneficially reused through land application and/or composting, are disposed of at a municipal solid waste landfill in accordance with all applicable regulations.

   The discharge of biosolids through land application is not regulated under this Order. Instead, the Discharger is required to obtain coverage under the State Water Board Order No. 2000-10-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.

d. **Discharge Notification.** This Provision requires the Discharger to notify the Regional Water Board orally in the event that discharge of treated effluent to surface waters is expected to occur when the flow in the Russian River has not reached 1,000 cubic feet per second. Although it is anticipated that the Discharger will discharge to surface waters during these critical low flow periods only under unusual circumstances, notification provided to the Regional Water Board will allow the Regional Water Board an opportunity to monitor the impact of the discharge to ensure that water quality objectives are achieved and beneficial uses are protected.

e. **Operator Certification.** This provision requires the Facility to be operated by supervisors and operators who are certified as required by Section 3680, Title 23, CCR.

f. **Adequate Capacity.** The goal of this provision is to ensure appropriate and timely planning by the Discharger to ensure adequate capacity for the protection of public health and water quality.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board) is considering the issuance of waste discharge requirements that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Santa Rosa Subregional Water Reclamation System. 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 Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the publication in the Press Democrat on April 21, 2006 and through posting on the Regional Water Board's Internet site at http://www.waterboards.ca.gov/northcoast/agenda/pending.html beginning on April 24, 2006. The initial public comment period ended on May 24, 2006. Comments received by May 24, 2006 resulted in substantial changes to the proposed Order. The public comment period reopened on July 17, 2006.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments shall 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.

In order to receive a full evaluation and response from staff and to be considered by the Regional Water Board, written comments on the substantial changes must be received at the Regional Water Board offices by 5:00 p.m. on August 15, 2006.

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:	September 19-20, 2006
Time:	1:30 p.m. on September 19, or as soon as possible thereafter as noticed in the final agenda
Location:	Regional Water Board Office 5550 Skylane Blvd., 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 aggrieved person may petition the State Water Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be 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 Charles Reed at (707) 576-2752.

ATTACHMENT F-1 – BIBLIOGRAPHY

1. California Department of Health Services (DHS), *Engineering Report for Master Recycling Permit Application*, submitted

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5. City of Santa Rosa, *Geysers Discharge Management Plan*, submitted October 6, 2003.

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7. City of Santa Rosa, *Biosolids Land Application Permit Report of Waste Discharge*, submitted September 15, 2004.

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12. City of Santa Rosa, *Infeasibility Study (for Anticipated Limits for Priority Pollutants)*, submitted July 6, 2005.

13. City of Santa Rosa, *Draft Work Plan for a Discharger-specific Copper Water Effect Ratio Study for the Laguna Subregional Water Reclamation Facility*, January 6, 2006.

14. City of Santa Rosa, *Delineation of Waters at Discharge Locations*, submitted March 14, 2005.

15. City of Santa Rosa, Infeasibility Study and Compliance Schedule for Nitrate, draft submitted July 10, 2006.

16. Great Lakes Environmental Center (GLEC), *Draft Compilation of Existing Guidance for the Development of Site-Specific Water Quality Objectives in the State of California*, June 30, 2003.

17. Helsel, D.R. *Nondetects and Data Analysis: statistics for censored environmental data.* Wiley & Sons, 2005.

18. State Water Resources Control Board, *Functional Equivalent Document (FED), Amendments to the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, February 24, 2005.

19. State Water Resources Control Board, California Environmental Protection Agency, *Policy for the Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California*, March 2, 2000 (Revised February 24, 2005)

20. USEPA, *Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001 (TSD)*, March 1991

21. USEPA, *Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Testing Programs*, May 31, 1996

22. USEPA, *USEPA NPDES Permit Writers' Manual*, EPA/833-B-96-003, December 1996.

23. USEPA, *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136),* EPA/821-B-00-004, July 2000.

24. USEPA, *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California (California Toxics Rule)*, 40 CFR Part 131, Federal Register/Volume 65, No. 97, May 18, 2000

25. USEPA, *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System Program*, June 30 2000.

26. Wickham, D., and Robert Rawson, *Phosphate Loading and Eutrophication in the Laguna de Santa Rosa,* January 2000.

ATTACHMENT F-2 Reasonable Potential Analysis– Summary Table

CTR #	Constituent	CTR WQ Objectives (µg/l)		Raw WWTF Effluent		Discharge Locations 06A, 06B, 012A, and 012B		Maximum Background or Minimum DL (µg/l)	RPA Results WQBEL needed?
		Aquatic Life	Human Health	No. of Detects / Total	MEC or Minimum DL (µg/l)	No. of Detects / Total	MEC or Minimum DL (µg/l)		
1.	Antimony	--	14	2/31	0.4	0/27	2	0.4	NO
2.	Arsenic	150	--	4/31	3	11/27	4	3.4	NO
3.	Beryllium	NONE		0/31	0.06	0/27	0.2	0.06	NO
4.	Cadmium	1.5	--	1/31	0.06	0/27	0.3	0.04	NO
5a.	Chromium (Total)	124	--	3/31	12	15/27	21	3.3	NO
5b.	Chromium (VI)	11.4	--	0/20	2	---	---	2	NO
6.	Copper	5.5	1,300	21/31	14	24/27	18	25.6[3]	YES
7.	Lead	1.4	--	4/31	5.8	4/27	5.8	1.8	YES
8.	Mercury	--	0.05	4/31	0.3	0/27	0.05	0.01	NO, BPJ
9.	Nickel	30.7	610	20/31	7.3	25/27	32	9.1	YES
10.	Selenium	5	--	0/31	0.5	0/27	5	0.5	NO
11.	Silver	1.4	--	2/31	0.07	0/27	0.5	0.02	NO
12.	Thallium	--	1.7	0/31	0.03	0/27	2	0.06	NO
13.	Zinc	70.5	--	30/31	35	27/27	44	24	NO
14.	Cyanide	5.2	700	14/31	51	6/27	12	2.8	YES
15.	Asbestos	--	7,000 mf/l	0/4	ND	ns	ns	0.2 mf/l	NO
16.	2, 3, 7, 8-TCDD (Dioxin)	--	0.013 pg/l	0/35	0.268 pg/l	0/21	637 pg/l	0.637 pg/l	NO
17.	Acrolein	--	320	0/31	0.36	0/23	1	0.36	NO
18.	Acrylonitrile	--	0.059	0/31	0.14	0/23	1	0.14	NO
19.	Benzene	--	1.2	0/31	0.08	0/23	0.5	0.08	NO
20.	Bromoform	--	4.3	0/31	0.099	0/23	0.5	0.099	NO

[3] Excluding a likely outlier result of 66 ug/l for a copper sample on 4/5/00.

CTR #	Constituent	CTR WQ Objectives (µg/l)		Raw WWTF Effluent		Discharge Locations 06A, 06B, 012A, and 012B		Maximum Background (µg/l)	RPA Results WQBEL needed?
		Aquatic Life	Human Health	No. of Detects / Total	MEC or Minimum DL (µg/l)	No. of Detects / Total	MEC or Minimum DL (µg/l)		
21.	Carbon Tetrachloride	--	0.25	0/31	0.19	0/23	0.5	0.19	NO
22.	Chlorobenzene	--	680	0/31	0.075	0/23	0.5	0.075	NO
23.	Chlorodibromomethane	--	0.401	0/31	0.11	0/23	0.5	0.11	NO
24.	Chloroethane	NONE		0/31	0.29	0/23	0.5	0.29	NO
25.	2-Chloroethylvinyl Ether	NONE		0/29	0.31	0/23	0.5	1	NO
26.	Chloroform	NONE		11/31	10.3	0/23	0.5	0.24	NO
27.	Dichlorobromomethane	--	0.56	3/31	1.8	0/23	0.5	0.1	NO, BPJ
28.	1,1-Dichloroethane	NONE		0/31	0.14	0/23	0.5	0.14	NO
29.	1,2-Dichloroethane	--	0.38	0/31	0.18	0/23	0.5	0.21	NO
30.	1,1-Dichloroethylene	--	0.057	0/28	0.19	ns	---	0.19	NO
31.	1,2-Dichloropropane	--	0.52	0/31	0.13	0/23	0.5	0.13	NO
32.	1,3–Dichloropropylene	--	10	0/31	0.12	ns	---	0.12	NO
33.	Ethylbenzene	--	3,100	0/31	0.11	0/23	0.5	0.2	NO
34.	Methyl Bromide	--	48	0/28	0.2	0/23	0.5	0.2	NO
35.	Methyl Chloride	NONE		0/28	0.36	0/29	0.5	0.14	NO
36.	Methylene Chloride	--	4.7	0/31	0.16	0/23	0.5	0.16	NO
37.	1,1,2,2-Tetrachloroethane	--	0.17	0/31	0.057	0/23	0.5	0.057	NO
38.	Tetrachloroethylene	--	0.8	0/31	0.21	0/23	0.5	0.21	NO
39.	Toluene	--	6800	0/31	0.11	0/23	0.5	0.36	NO
40.	1,2-Trans-Dichloroethylene	--	700	0/31	0.16	0/23	0.5	0.16	NO
41.	1,1,1-Trichloroethane	NONE		0/31	0.13	0/23	0.5	0.13	NO
42.	1,1,2-Trichloroethane	--	0.6	0/31	0.12	0/23	0.5	0.12	NO
43.	Trichloroethylene	--	2.7	0/31	0.13	0/23	0.5	0.13	NO
44.	Vinyl Chloride	--	2	0/31	0.17	0/23	0.5	0.17	NO
45.	2-Chlorophenol	--	120	0/32	0.4	0/27	5	0.4	NO

CTR #	Constituent	CTR WQ Objectives (µg/l)		Raw WWTF Effluent		Discharge Locations 06A, 06B, 012A, and 012B		Maximum Background (µg/l)	RPA Results WQBEL needed?
		Aquatic Life	Human Health	No. of Detects Total	MEC or Minimum DL (µg/l)	No. of Detects Total	MEC or Minimum DL (µg/l)		
46.	2,4 Dichlorophenol	--	93	0/36	0.3	0/27	5	0.3	NO
47.	2,4-Dimethylphenol	--	540	0/32	0.3	0/27	5	0.3	NO
48.	2-Methyl-4,6-Dinitrophenol	--	13.4	0/32	0.4	0/27	10	0.4	NO
49.	2,4-Dinitrophenol	--	70	0/28	0.3	0/27	5	0.3	NO
50.	2-Nitrophenol	NONE		0/32	0.3	0/27	5	0.3	NO
51.	4-Nitrophenol	NONE		0/32	0.2	0/27	5	0.2	NO
52.	3-methyl-4-chlorophenol	NONE		0/28	1	0/27	5	1	NO
53.	Pentachlorophenol	15	0.28	0/32	0.4	0/27	5	0.4	NO
54.	Phenol	--	21000	0/32	0.2	0/27	5	0.2	NO
55.	2,4,6 Trichlorophenol	--	2.1	0/32	0.2	0/26	5	0.2	NO
56.	Acenaphthene	--	1200	0/32	0.17	0/27	5	0.17	NO
57.	Acenaphthylene	NONE		0/32	0.03	0/27	5	0.03	NO
58.	Anthracene	--	9600	0/32	0.16	0/27	5	0.16	NO
59.	Benzidine	--	0.00012	0/32	0.3	0/27	20	0.3	NO
60.	Benzo(a)Anthracene	--	0.0044	0/32	0.12	0/27	5	0.12	NO
61.	Benzo(a)Pyrene	--	0.0044	0/32	0.09	0/27	5	0.09	NO
62.	Benzo(b)Fluoranthene	--	0.0044	0/32	0.11	0/27	5	0.11	NO
63.	Benzo(ghi)Perylene	NONE		0/32	0.06	0/27	5	0.06	NO
64.	Benzo(k)Fluoranthene	--	0.0044	0/32	0.16	0/27	5	0.16	NO
65.	Bis(2-Chloroethoxy) Methane	NONE		0/32	0.3	0/27	5	0.3	NO
66.	Bis(2-Chloroethyl) Ether	--	0.031	0/32	0.3	0/27	5	0.3	NO
67.	Bis(2-Chloroisopropyl) Ether	--	1400	0/32	1	0/27	5	1	NO
68.	Bis(2-Ethylhexyl) Phthalate	--	1.8	0/32	0.3	3/27	570	0.3	NO, BPJ
69.	4-Bromophenyl Phenyl Ether	NONE		0/28	0.4	0/27	5	0.5	NO
70.	Butylbenzyl Phthalate	--	3000	0/32	0.4	0/27	5	0.4	NO

CTR #	Constituent	CTR WQ Objectives (µg/l)		Raw WWTF Effluent		Discharge Locations 06A, 06B, 012A, and 012B		Maximum Background (µg/l)	RPA Results WQBEL needed?
		Aquatic Life	Human Health	No. of Detects Total	MEC or Minimum DL (µg/l)	No. of Detects Total	MEC or Minimum DL (µg/l)		
71.	2-Chloronaphthalene	--	1700	0/28	0.30	ns	---	0.30	NO
72.	4-Chlorophenyl Phenyl Ether	NONE		0/32	0.4	0/27	5	0.4	NO
73.	Chrysene	--	0.0044	0/32	0.14	0/27	5	0.14	NO
74.	Dibenzo(a,h) Anthracene	--	0.0044	0/32	0.04	0/27	5	0.04	NO
75.	1,2 Dichlorobenzene	--	2700	0/31	0.11	0/23	5	0.11	NO
76.	1,3 Dichlorobenzene	--	400	0/31	0.11	0/23	5	0.11	NO
77.	1,4 Dichlorobenzene	--	400	9/31	1.3	0/23	5	0.081	NO
78.	3,3'-Dichlorobenzidine	--	0.04	0/32	0.4	0/27	5	0.4	NO
79.	Diethyl Phthalate	--	23000	0/32	0.4	0/27	5	0.4	NO
80.	Dimethyl Phthalate	--	313000	0/32	0.4	0/27	5	0.4	NO
81.	Di-n-Butyl Phthalate	--	2700	0/32	0.4	1/27	5.7	0.4	NO, BPJ
82.	2,4-Dinitrotoluene	--	0.11	0/32	0.3	0/27	5	0.3	NO
83.	2,6-Dinitrotoluene	NONE		0/32	0.3	0/23	5	0.3	NO
84.	Di-n-Octyl Phthalate	NONE		0/32	0.4	0/27	5	0.4	NO
85.	1,2-Diphenylhydrazine	--	0.04	0/25	0.6	0/27	5	0.3	NO
86.	Fluoranthene	--	300	0/32	0.03	0/27	5	0.03	NO
87.	Fluorene	--	1300	0/32	0.02	0/27	5	0.02	NO
88.	Hexachlorobenzene	--	0.00075	0/32	0.4	0/27	5	0.4	NO
89.	Hexachlorobutadiene	--	0.44	0/32	0.2	0/27	5	0.2	NO
90.	Hexachlorocyclopentadiene	--	240	0/32	0.1	0/27	5	0.1	NO
91.	Hexachloroethane	--	1.9	0/32	0.2	0/27	5	0.2	NO
92.	Indeno(1,2,3-cd)Pyrene	--	0.0044	0/32	0.04	0/27	5	0.04	NO
93.	Isophorone	--	8.4	0/32	0.3	0/27	5	0.3	NO
94.	Naphthalene	NONE		1/32	7.5	0/27	5	0.05	NO,BPJ
95.	Nitrobenzene	--	17	0/32	0.3	0/27	5	0.3	NO

CTR #	Constituent	CTR WQ Objectives (µg/l)		Raw WWTF Effluent		Discharge Locations 06A, 06B, 012A, and 012B		Maximum Background (µg/l)	RPA Results WQBEL needed?
		Aquatic Life	Human Health	No. of Detects Total	MEC or Minimum DL (µg/l)	No. of Detects Total	MEC or Minimum DL (µg/l)		
96.	N-Nitrosodimethylamine	--	0.00069	0/32	0.4	0/27	5	0.4	NO
97.	N-Nitrosodi-n-Propylamine	--	0.005	0/32	0.3	0/27	5	0.3	NO
98.	N-Nitrosodiphenylamine	--	5.0	0/32	0.4	0/27	5	0.4	NO
99.	Phenanthrene	NONE		0/32	0.03	0/27	5	0.03	NO
100.	Pyrene	--	960	0/32	0.03	0/27	5	0.03	NO
101.	1,2,4-Trichlorobenzene	NONE		0/32	0.3	0/27	5	0.3	NO
102.	Aldrin	3	0.00013	0/32	0.003	0/18	0.04	0.003	NO
103.	α-BHC	--	0.0039	0/32	0.002	0/18	0.03	0.002	NO
104.	β-BHC	--	0.014	0/32	0.001	0/18	0.05	0.001	NO
105.	γ-BHC (Lindane)	0.95	0.019	1/32	0.02	0/18	0.04	0.001	NO, BPJ
106.	δ-BHC	NONE		0/32	0.001	0/18	0.05	0.001	NO
107.	Chlordane	0.0043	0.00057	0/32	0.005	0/18	0.1	0.005	NO
108.	4,4'-DDT	0.001	0.00059	0/32	0.001	0/18	0.05	0.001	NO
109.	4,4'-DDE	--	0.00059	0/32	0.001	0/18	0.04	0.001	NO
110.	4,4'-DDD	--	0.00083	0/32	0.001	0/18	0.05	0.001	NO
111.	Dieldrin	--	0.00014	0/32	0.002	0/18	0.02	0.002	NO
112.	Endosulfan (alpha)	0.056	110	0/32	0.003	0/18	0.02	0.003	NO
113.	Endosulfan (beta)	0.056	110	1/32	0.08	0/18	0.02	0.001	NO, BPJ
114.	Endosulfan Sulfate	--	110	0/32	0.001	0/18	0.05	0.001	NO
115.	Endrin	0.036	0.76	0/32	0.002	0/18	0.05	0.002	NO
116.	Endrin Aldehyde	--	0.76	0/32	0.002	0/18	0.1	0.002	NO
117.	Heptachlor	0.0038	0.00021	0/32	0.003	0/18	0.03	0.003	NO
118.	Heptachlor Epoxide	0.0038	0.00010	0/32	0.002	0/18	0.04	0.002	NO
119-125	PCBs	0.014	0.00017	0/32	0.1	0/18	0.1	0.1	NO
126.	Toxaphene	0.0002	0.00073	0/32	0.2	0/18	1	0.21	NO