CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

1685 "E" Street, Suite 100, Fresno, CA 93706-2007
Phone (559) 445-5116 • Fax (559) 445-5910
http://www.waterboards.ca.gov/centralvalley

ORDER R5-2013-XXXX
NPDES NO. CA0081795

WASTE DISCHARGE REQUIREMENTS FOR THE UNITED STATES DEPARTMENT OF THE INTERIOR, NATIONAL PARK SERVICE, YOSEMITE NATIONAL PARK WAWONA WASTEWATER TREATMENT FACILITY MARIPOSA COUNTY

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

Table 1. Discharger Information

Discharger	United States Department of the Interior, National Park Service, Yosemite National Park
Name of Facility	Wawona Wastewater Treatment Facility
Facility Address	4004 Chilnualna Falls Road
	Wawona, CA 95389
	Mariposa County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a minor discharge.	

The discharge by the United States Department of the Interior, National Park Service, Yosemite National Park from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Disinfected Tertiary-Treated Domestic Wastewater	37° 32' 18" N	119° 39' 33" W	South Fork Merced River
002	Disinfected Tertiary-Treated Domestic Wastewater	37° 32' 15" N	119° 39' 33" W	Wawona Golf Course

Table 3. Administrative Information

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

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

_____
PAMELA C. CREEDON, Executive Officer

Table of Contents

I. Facility Information 4
II. Findings 4
III. Discharge Prohibitions 10
IV. Effluent Limitations and Discharge Specifications 11
A. Effluent Limitations – Discharge Point No. 001 11
B. Land Discharge Specifications – Not Applicable 12
C. Recycled Water Specifications – Discharge Point No. 002 12
D. Influent Flow Limitation 14
V. Receiving Water Limitations 14
A. Surface Water Limitations 14
B. Groundwater Limitations 17
VI. Provisions 17
A. Standard Provisions 17
B. Monitoring and Reporting Program Requirements 21
C. Special Provisions 21
1. Reopener Provisions 21
2. Special Studies, Technical Reports, and Additional Monitoring Requirements 23
3. Best Management Practices and Pollution Prevention 25
4. Construction, Operation, and Maintenance Specifications 25
5. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable 28
6. Other Special Provisions – Not Applicable 28
7. Compliance Schedules – Not Applicable 28
VII. Compliance Determination 28

List of Tables

Table 1. Discharger Information 1
Table 2. Discharge Locations 1
Table 3. Administrative Information 1
Table 4. Facility Information 4
Table 5. Basin Plan Beneficial Uses 6
Table 6. Effluent Limitations 11
Table 7. Recycled Water Specifications 14
Table 8. Influent Flow Limitation 14

List of Attachments

Attachment A – Definitions A-1
Attachment B – Map B-1
Attachment C – Flow Schematic C-1
Attachment D – Standard Provisions D-1
Attachment E – Monitoring and Reporting Program E-1
Attachment F – Fact Sheet F-1
Attachment G – Summary of Reasonable Potential Analysis for Constituents of Concern G-1
Attachment H – Calculation of WQBELs H-1
Attachment I – Effluent and Receiving Water Characterization Study I-1
Attachment J – Recycled Water Signage J-1

I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	United States Department of the Interior, National Park Service, Yosemite National Park
Name of Facility	Wawona Wastewater Treatment Facility
Facility Address	4004 Chilnualna Falls Road
	Wawona, CA 95389
	Mariposa County
Facility Contact, Title, and Phone	Paul J. Laymon, Facility Manager, Branch of Utilities, (209) 379-1077
Mailing Address	P.O. Box 700-W, El Portal, CA 95318
Type of Facility	Domestic Wastewater Treatment Plant
Facility Design Flow	0.105 million gallons per day (MGD)

II. FINDINGS

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

A. Background. United States Department of the Interior, National Park Service, Yosemite National Park (hereinafter Discharger) was authorized to discharge pursuant to Order R5-2005-0155 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0081795. The Discharger submitted a Report of Waste Discharge, dated 19 April 2010, and applied for a NPDES permit renewal to discharge up to 0.288 MGD of treated wastewater from the Wawona Wastewater Treatment Facility, hereinafter Facility, to South Fork Merced River. The application was deemed complete on 26 March 2012.

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

B. Facility Description. The Discharger owns and operates a domestic wastewater treatment plant. The treatment system consists of a headworks with two grinders, an equalization tank, an activated sludge treatment system, coagulant and polymer injections, rapid mixing, flocculation, final sedimentation, and sand filtration. Phosphorus is removed by adding aluminum sulfate in the final treatment units. Effluent is chlorinated and pH-balanced before storage in two above-ground storage tanks, which provide a total capacity of 5 million gallons. The storage tanks also provide chlorine contact time. Wastewater is dechlorinated after the storage tanks only when discharging to South Fork Merced River. Disinfected, tertiary treated wastewater from the storage tanks is recycled on the Wawona Golf Course at Discharge Point No. 002. When wastewater flows exceed the land disposal and storage capacity of the Facility, wastewater is discharged from Discharge Point No. 001 (see table on cover page) to

South Fork Merced River, which is tributary to Merced River, a water of the United States, within the Merced River Hydrologic Unit, South Fork Merced River Hydrologic Area (537.40). Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

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

D. **Background and Rationale for Requirements.** The Central Valley Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E and G through J are also incorporated into this Order.

E. **California Environmental Quality Act (CEQA).** Under Water Code section 13389, this action to adopt a NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.

F. **Technology-based Effluent Limitations.** Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (40 CFR 122.44), require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet.

G. **Water Quality-based Effluent Limitations (WQBELs).** Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as technology equivalence requirements, which are necessary to achieve water quality standards. The Central Valley Water Board has considered the factors listed in Water Code section 13241 in establishing these requirements. The rationale for these requirements, which consist of tertiary treatment or equivalent requirements, is discussed in the Fact Sheet.

40 CFR 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been

established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

H. Water Quality Control Plans. The Central Valley Water Board adopted a *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised October 2011 (hereinafter Basin Plan), that designates beneficial uses in Section II, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Table II-1 of the Basin Plan identifies beneficial uses of certain specific water bodies. Merced River, to which South Fork Merced River is tributary, is listed in Table II-1. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to South Fork Merced River are listed in Table 5, below.

Groundwater underlying the Facility and the discharge points is in the Merced River Detailed Analysis Unit (DAU) No. 197. The beneficial uses of groundwater for this DAU are designated in the Basin Plan and listed in Table 5, below.

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	South Fork Merced River	Municipal and domestic supply (MUN); Agricultural supply, including irrigation (AGR); Hydropower generation (POW); Water contact recreation, including canoeing and rafting (REC-1); Non-contact water recreation (REC-2); Warm freshwater habitat (WARM); Cold freshwater habitat (COLD); and Wildlife habitat (WILD)
002	Groundwater	Municipal and domestic supply (MUN); Agricultural supply, including irrigation and stock watering (AGR); Industrial service supply (IND); and Industrial process supply (PRO)

Requirements of this Order specifically implement the Basin Plan.

I. National Toxics Rule (NTR) and California Toxics Rule (CTR). USEPA adopted the NTR on 22 December 1992 and later amended it on 4 May 1995 and 9 November 1999. About 40 criteria in the NTR applied in California. On 18 May 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain water quality criteria for priority pollutants.

J. State Implementation Policy. On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on 28 April 2000 with respect to the priority pollutant criteria promulgated for California by USEPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plan. The SIP became effective on 18 May 2000 with respect to the priority pollutant criteria promulgated by USEPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005 that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

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

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

Where a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric effluent limitations for that constituent or parameter, interim milestones and compliance reporting within 14 days after each interim milestone. The Order may also include interim requirements to control the pollutant, such as pollutant minimization and source control measures. This Order does not include compliance schedules or interim effluent limitations.

L. Alaska Rule. On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes. (40 CFR 131.21 and 65 FR 24641 (27 April 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after 30 May 2000, must be approved by USEPA before being used for CWA

purposes. The final rule also provides that standards already in effect and submitted to USEPA by 30 May 2000 may be used for CWA purposes, whether or not approved by USEPA.

M. Stringency of Requirements for Individual Pollutants. This Order contains both a technology-based effluent limitation and WQBELs for individual pollutants. The technology-based effluent limitation consists of restrictions on flow. The WQBELs consist of restrictions on ammonia (as N), 5-day biochemical oxygen demand (BOD_5), chlorine residual, copper, dichlorobromomethane, nitrite plus nitrate (as N), pH, phosphorus, total coliform, total suspended solids (TSS), BOD_5 and TSS percent removal, zinc, and acute whole effluent toxicity. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "*applicable water quality standard[s] for purposes of the [Clean Water] Act*" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the CWA and the applicable water quality standards for purposes of the CWA.

N. Antidegradation Policy. 40 CFR 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Central Valley Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. As discussed in detail in the Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 CFR 131.12 and Resolution No. 68-16.

O. Anti-Backsliding Requirements. Sections 303(d)(4) and 402(o)(2) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions. Some effluent limitations in this Order are less stringent than those in Order R5-2005-0155. As discussed in detail in the Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

P. Endangered Species Act. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limitations, receiving water limitations, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

Q. Monitoring and Reporting. 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. The Monitoring and Reporting Program is provided in Attachment E.

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

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

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

S. Provisions and Requirements Implementing State Law. The provisions/requirements in sections IV.C, V.B, and VI.A.2.o of this Order are included to

implement State law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

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

U. Consideration of Public Comment. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED, that Order R5-2005-0155 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater at a location or in a manner different from that described in the Findings is prohibited.

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

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

D. The Discharger shall not allow pollutant-free wastewater to be discharged into the treatment or disposal system in amounts that significantly diminish the system's capability to comply with this Order. Pollutant-free wastewater means rainfall, groundwater, cooling waters, and condensates that are essentially free of pollutants.

E. Discharge to South Fork Merced River is prohibited unless the ratio of river flow to wastewater discharge is 150:1 or greater.

F. Discharge to South Fork Merced River is prohibited during the 6 months between 1 June and 30 November.

G. Discharge of waste classified as 'hazardous', as defined in Title 23, California Code of Regulations (CCR), Section 2521(a), et seq., is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point No. 001

1. Final Effluent Limitations – Discharge Point No. 001

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-002 as described in the Monitoring and Reporting Program, unless otherwise noted:

a. The effluent limitations specified in Table 6:

Table 6. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--
	lbs/day[1]	8.7	13	17	--	--
pH[2]	standard units	--	--	--	6.5	8.5
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day[1]	8.7	13	17	--	--
Priority Pollutants						
Copper, Total Recoverable	µg/L	3.9	--	5.3	--	--
Dichlorobromomethane	µg/L	0.56	--	1.1	--	--
Zinc, Total Recoverable	µg/L	27	--	54	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	1.1	--	2.1	--	--
	lbs/day[1]	0.96	--	1.8	--	--
Nitrite plus Nitrate (as N)	mg/L	~~42~~52	--	--	--	--
Phosphorus, Total (as P)	mg/L	0.50	0.75	1.0		
	lbs/day[1]	0.44	0.66	0.87		

[1] Based on a design flow of 0.105 MGD.
[2] Compliance with effluent limitations for pH shall be determined at Monitoring Location EFF-001.

b. Percent Removal. The average monthly percent removal of BOD_5 and TSS shall not be less than 90 percent.

c. Acute Whole Effluent Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

i. Minimum for any one bioassay---------- 70%
ii. Median for any three consecutive bioassays ---------- 90%

d. **Total Residual Chlorine.** Effluent total residual chlorine at Monitoring Location EFF-001 shall not exceed:

   i. 0.011 mg/L, as a 4-day average; and
   ii. 0.019 mg/L, as a 1-hour average.

e. **Total Coliform.** Effluent total coliform shall not exceed:

   i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median;
   ii. 23 MPN/100 mL, more than once in any 30-day period; and
   iii. 240 MPN/100 mL, at any time.

f. **Maximum Daily Discharge Flow.** The maximum daily discharge flow at Monitoring Location EFF-001 shall not exceed 0.288 MGD.

2. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Not Applicable

C. Recycled Water Specifications – Discharge Point No. 002

1. Use of recycled water shall comply with the terms and conditions of the most current Title 22 regulations.

2. Use of recycled water shall be limited to the Wawona Golf Course (hereafter reclamation area).

3. Recycled water used for irrigation shall be managed to prevent breeding of mosquitoes. More specifically:

   a. All applied recycled water must infiltrate completely within 24 hours.

   b. Ditches not serving as wildlife habitat should be maintained free of emergent, marginal, and floating vegetation.

   c. Low pressure and unpressurized pipelines and ditches accessible to mosquitoes shall not be used to store reclaimed water.

4. No irrigation with recycled water shall take place within 50 feet of any domestic water supply well.

5. No impoundment of recycled water shall occur within 100 feet of any domestic water supply well.

6. Any irrigation runoff shall be confined to the reclamation area.

7. Spray, mist, or runoff shall not enter dwellings, designated outdoor eating areas, or food handling facilities.

8. Drinking water fountains shall be protected against contact with recycled water spray, mist, or runoff.

9. All use areas where recycled water is used that are accessible to the public shall be posted with signs that are visible to the public, in a size no less than 4 inches high by 8 inches wide, that include the following wording: "RECYCLED WATER – DO NOT DRINK". Each sign shall display an international symbol similar to that shown in Attachment J.

10. Except as allowed under Section 7604 of Title 17, CCR, no physical connection shall be made or allowed to exist between any recycled water system and any separate system conveying potable water.

11. The portions of the recycled water piping system that are in areas subject to access by the general public shall not include any hose bibs. Only quick couplers that differ from those used on the potable water system shall be used on the portions of the recycled water piping system in areas subject to public access.

12. Irrigation of the reclamation area shall occur between 9:00 pm and 6:00 am, as weather permits. Hand watering of the golf course, with a hose, using recycled water in conjunction with typical irrigation and irrigation system testing activities may be permitted during the day, provided that applications are supervised by appropriate golf course personnel and all golfers, pedestrians, and other members of the general public are precluded from entering irrigated areas until all applied recycled water has infiltrated the soil. Hand watering does not include watering of golf course areas by manually operating the irrigation system. Watering using such practices is prohibited.

13. Workers shall be informed of the potential health hazards involved with contact or ingestion of recycled water, and shall be educated regarding proper hygienic procedures to ensure personal and public safety.

14. Application of recycled water to the reclamation area shall not exceed what is reasonably necessary for the grass, soil, climate, and management system (i.e., generally accepted agronomic rates).

15. Recycled water controllers, valves, etc. shall be affixed with recycled water warning signs, and the quick couplers and sprinkler heads shall be of a type, or secured in a manner that permits operation by authorized personnel only.

16. The Discharger shall maintain compliance with the following recycled water specifications at Discharge Point No. 002, with compliance measured at Monitoring Location REC-001 as described in the Monitoring and Reporting Program, unless otherwise noted:

a. The recycled water specifications in Table 7:

Table 7. Recycled Water Specifications

Parameter	Units	Recycled Water Specifications				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--
	lbs/day[1]	8.7	13	17	--	--
pH[2]	standard units	--	--	--	6.5	8.5
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day[1]	8.7	13	17	--	--
Non-Conventional Pollutants						
Phosphorus, Total (as P)	mg/L	0.50	0.75	1.0	--	--
	lbs/day[1]	0.44	0.66	0.87	--	--

[1] Based on a design flow of 0.105 MGD.
[2] Compliance shall be determined at Monitoring Location REC-002, as described in the Monitoring and Reporting Program.

b. Percent Removal. The average monthly percent removal of BOD_5 and TSS shall not be less than 90 percent.

c. Total Coliform. Effluent total coliform shall not exceed:

i. 2.2 most probable number (MPN) per 100 mL, as a 7-day median;
ii. 23 MPN/100 mL, more than once in any 30-day period; and
iii. 240 MPN/100 mL, at any time.

D. Influent Flow Limitation

1. The Discharger shall maintain compliance with the following influent limitation, with compliance measured at Monitoring Location INF-001, as described in the Monitoring and Reporting Program:

Table 8. Influent Flow Limitation

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	0.105	--	--	--	--

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in South Fork Merced River:

1. Bacteria. The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of

200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.

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

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

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

5. **Dissolved Oxygen:**

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

   b. The 95 percentile dissolved oxygen concentration to fall below 75 percent of saturation; nor

   c. The dissolved oxygen concentration to be reduced below 7.0 mg/L at any time.

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

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

8. **pH.** The pH to be depressed below 6.5 nor raised above 8.5.

9. **Pesticides:**

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

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

   c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by USEPA or the Executive Officer;

   d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR 131.12.);

   e. Pesticide concentrations to exceed the lowest levels technically and economically achievable;

f. Pesticides to be present in concentration in excess of the maximum contaminant levels (MCLs) set forth in Title 22, CCR, division 4, chapter 15; nor

g. Thiobencarb to be present in excess of 1.0 µg/L.

10. Radioactivity:

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

b. Radionuclides to be present in excess of the MCLs specified in Title 22, CCR, Table 64442 of Section 64442 and Table 64443 of Section 64443.

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

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

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

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

15. Temperature. The natural temperature to be increased by more than 5°F. Compliance to be determined based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002.

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

17. Turbidity. Turbidity to:

a. Exceed 2 Nephelometric Turbidity Units (NTU) where natural turbidity is less than 1 NTU;

b. Increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;

c. Increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;

d. Increase more than 10 NTUs where natural turbidity is between 50 and 100 NTUs; nor

e. Increase more than 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations

Neither the Facility nor the recycling of wastewater shall cause underlying groundwater to contain waste constituents in concentrations greater than background water quality unaffected by waste sources.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions (federal NPDES standard conditions from 40 CFR Part 122) included in Attachment D of this Order.

2. The Discharger shall comply with the following provisions:

a. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, CCR, division 3, chapter 26.

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

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

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

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

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

The causes for modification include:

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

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

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

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

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

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

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

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

ii. Controls any pollutant limited in the Order.

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

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

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

g. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by USEPA under section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.

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

i. Safeguard to electric power failure:

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

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

iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Central Valley Water Board not approve the existing safeguards, the Discharger shall, within 90 days of having been advised in writing by the Central Valley Water Board that the existing safeguards are inadequate, provide to the Central Valley Water Board and USEPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Central Valley Water Board, become a condition of this Order.

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

The technical report shall:

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

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

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

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

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

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

m. The Central Valley Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13268, 13350, 13385, 13386, and 13387.

n. For publicly owned treatment works, prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a permanent decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (Water Code section 1211).

o. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, instantaneous minimum effluent limitation, instantaneous maximum effluent limitation, maximum daily effluent limitation,

1-hour average effluent limitation, acute toxicity effluent limitation, or receiving water limitation contained in this Order, the Discharger shall notify the Central Valley Water Board by telephone at (559) 445-5116 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 5 days, unless the Central Valley Water Board waives confirmation. The written notification shall include the information required by the Standard Provision contained in Attachment D, section V.E.1. [40 CFR 122.41(l)(6)(i)].

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

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

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

B. Monitoring and Reporting Program Requirements

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

C. Special Provisions

1. Reopener Provisions

a. Conditions that necessitate a major modification of a permit are described in 40 CFR 122.62, including, but not limited to:

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

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

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

c. Whole Effluent Toxicity. As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a numeric chronic toxicity limitation, new acute toxicity effluent limitations, and/or effluent limitations for a specific toxicant identified in the TRE. Additionally, if the State Water Board revises the SIP's toxicity control provisions that would require the establishment of numeric chronic toxicity effluent limitations, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on the new provisions.

d. Water Effects Ratios (WER) and Metal Translators. A default WER of 1.0 has been used in this Order for calculating CTR criteria and effluent limitations for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for copper and zinc. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

e. Drinking Water Policy. The Central Valley Water Board is developing a Drinking Water Policy. This Order may be reopened to incorporate monitoring of drinking water constituents to implement the Drinking Water Policy.

f. Dilution/Mixing Zone Study. In order to allow dilution credits for the calculation of WQBELs for CTR constituents, the Discharger must submit an approved Dilution/Mixing Zone Study, in accordance with a work plan submitted to and approved by the Central Valley Water Board, which meets all of the requirements of Section 1.4.2.2 of the SIP. Should the Discharger submit an approved Dilution/Mixing Zone Study that meets the requirements of Section 1.4.2.2 of the SIP, including sufficient data demonstrating that assimilative capacity is available and that granting the mixing zone would not adversely impact biologically sensitive aquatic life resources or critical habitats, or produce undesirable or nuisance conditions, the Central Valley Water Board may reopen this Order to include effluent limitations based on an appropriate dilution factor for CTR constituents.

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

a. Chronic Whole Effluent Toxicity. For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic whole effluent toxicity (WET) testing, as specified in the Monitoring and Reporting Program (Attachment E, section V). Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity. If the discharge exhibits toxicity, as described in subsection ii below, the Discharger is required to initiate a TRE in accordance with an approved TRE work plan, and take actions to mitigate the impact of the discharge and prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This Provision includes requirements for the Discharger to develop and submit a TRE work plan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. Initial Investigative TRE Work Plan. By **<90 days from the effective date of this Order>**, the Discharger shall submit to the Central Valley Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer. This should be a one to two page document including, at a minimum:

(a) A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of effluent toxicity, effluent variability, and treatment system efficiency;

(b) A description of the Discharger's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in operation of the Facility; and

(c) A discussion of who will conduct the Toxicity Identification Evaluation (TIE), if necessary (e.g., an in-house expert or outside contractor).

ii. Accelerated Monitoring and TRE Initiation. When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. The Discharger shall initiate a TRE to address effluent toxicity if any WET testing results exceed the numeric toxicity monitoring trigger during accelerated monitoring.

iii. Numeric Toxicity Monitoring Trigger. The numeric toxicity monitoring trigger to initiate a TRE is > **1 TU_C** (where TU_C = 100/NOEC)(NOEC = No Observed Effect Concentration). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE when the effluent exhibits toxicity.

iv. Accelerated Monitoring Specifications. If the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity testing, the Discharger shall initiate accelerated monitoring within 14 days of notification by the laboratory of the exceedance. Accelerated monitoring shall consist of four (4) chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. The following protocol shall be used for accelerated monitoring and TRE initiation:

(a) If the results of four (4) consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is evidence of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

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

(c) If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and begin a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. **Within thirty (30) days** of notification by the laboratory of any test result exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Central Valley Water Board including, at minimum:

(1) Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;

(2) Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and

(3) A schedule for these actions.

Within sixty (60) days of notification by the laboratory of the test results, the Discharger shall submit to the Central Valley Water Board a TRE Work Plan for approval by the Executive Officer. The TRE Work Plan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE Work Plan must be developed in accordance with USEPA guidance.[1]

[1] See the Fact Sheet (Attachment F, section VII.B.2.a.) for a list of USEPA guidance documents that must be considered in development of the TRE work plan.

3. Best Management Practices and Pollution Prevention

a. Salinity Evaluation and Minimization Plan. The Discharger shall prepare and implement a salinity evaluation and minimization plan to identify and address sources of salinity from the Facility, including any chemicals used for drinking water and wastewater treatment and the contribution of salinity from sewer users with private groundwater wells. The plan shall be completed and submitted to the Central Valley Water Board by **<9 months from the adoption date of this Order>** for the approval by the Executive Officer.

4. Construction, Operation, and Maintenance Specifications

a. Turbidity Operational Requirements

i. When coagulation is used, the Discharger shall operate the treatment system to ensure that the turbidity measured at INT-002, as described in the MRP (Attachment E), shall not exceed:

(a) 2 NTU, as a 24-hour average;
(b) 5 NTU, more than 5 percent of the time within a 24-hour period; and
(c) 10 NTU, at any time.

ii. When coagulation is <u>not</u> used, the Discharger shall operate the treatment system to ensure:

(a) The turbidity of the influent to the filtration unit measured at INT-001 (see MRP, Attachment E) shall not exceed 5 NTU for more than 15 minutes and never exceed 10 NTU; and
(b) The effluent turbidity measured at INT-002 (see MRP, Attachment E) shall not exceed 2 NTU at any time.

b. Filtration Rate. The maximum filtration rate shall not exceed 5 gallons per minute per square foot of surface area, as measured at Monitoring Location INT-001.

c. Treatment Plant Operating Requirements

i. The treatment facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

ii. The Discharger shall maximize reclamation of wastewater so that discharges to South Fork Merced River occur only when irrigation of the golf course is not necessary (snow or saturated soil conditions) and storage capacity has been reached.

iii. Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the Department of Public Health (DPH; formerly the Department

of Health Services) reclamation criteria, Title 22, CCR, division 4, chapter 3, (Title 22), or equivalent.

iv. The chlorine disinfection process following filtration shall provide a CT (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow.

d. Sludge/Biosolids Treatment or Discharge Specifications. Sludge in this document means the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes. Solid waste refers to grit and screening material generated during preliminary treatment. Residual sludge means sludge that will not be subject to further treatment at the wastewater treatment plant. Biosolids refer to sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agricultural, silvicultural, horticultural, and land reclamation activities as specified under 40 CFR Part 503.

i. Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, division 2, subdivision 1, section 20005, et seq. Removal for further treatment, storage, disposal, or reuse at sites (e.g., landfill, composting sites, soil amendment sites) that are operated in accordance with valid waste discharge requirements issued by the State Water Board or a Regional Water Board will satisfy these specifications.

ii. Sludge and solid waste shall be removed from screens, sumps, ponds, clarifiers, etc. as needed to ensure optimal Facility performance.

iii. The treatment of sludge and the dewatering of residual sludge and/or biosolids generated at the Facility shall be confined to the Facility property and conducted in a manner that precludes infiltration of waste constituents into soils in a mass or concentration that will violate Groundwater Limitation V.B. of this Order. In addition, the storage of residual sludge, solid waste, and biosolids on Facility property shall be temporary and controlled, and contained in a manner that minimizes leachate formation and precludes infiltration of waste constituents into soils in a mass or concentration that will violate Groundwater Limitation V.B. of this Order.

iv. The use, disposal, storage, and transportation of biosolids shall comply with existing federal and state laws and regulations, including permitting requirements and technical standards included in 40 CFR Part 503. If the State Water Board and the Central Valley Water Board are given the authority to implement regulations contained in 40 CFR Part 503, this Order may be reopened to incorporate appropriate time schedules and technical standards.

The Discharger must comply with the standards and time schedules contained in 40 CFR Part 503 whether or not they have been incorporated into this Order.

v. The Discharger shall comply with Section IX.A. Biosolids of the Monitoring and Reporting Program, Attachment E.

vi. Any proposed change in biosolids use or disposal practice from a previously approved practice shall be reported to the Executive Officer and USEPA Regional Administrator **at least 90 days** in advance of the change.

vii. By **<180 days from the permit effective date>**, the Discharger shall review and update its existing biosolids use or disposal plan, and submit it to the Central Valley Water Board. The updated plan shall describe at a minimum:

(a) Sources and amounts of sludge/biosolids generated annually.

(b) Location(s) of on-site storage and description of the containment area and containment features. The description shall include the Discharger's means of complying with Provisions V.B. and VI.C.4.d.

(c) Plans for ultimate disposal. For landfill disposal, include the Regional Water Board's waste discharge requirements order number that regulates that particular landfill; the present classification of the landfill; and the name and location of the landfill.

e. Collection System. On 2 May 2006, the State Water Board adopted Order 2006-0003-DWQ, Statewide General Waste Discharge Requirements (WDRs) for Sanitary Sewer Systems. The Discharger shall be subject to the requirements of Order 2006-0003-DWQ and any future revisions thereto. Order 2006-0003-DWQ requires that all public agencies that currently own or operate sanitary sewer systems apply for coverage under the general WDRs. The Discharger has applied for and has been approved for coverage under Order 2006-0003-DWQ for operation of its wastewater collection system.

Regardless of the coverage obtained under Order 2006-0003-DWQ, the Discharger's collection system is part of the treatment system that is subject to this Order. As such, pursuant to federal regulations, the Discharger must properly operate and maintain its collection system [40 CFR 122.41(e)], report any non-compliance [40 CFR 122.41(l)(6) and (7)], and mitigate any discharge from the collection system in violation of this Order [40 CFR 122.41(d)].

f. This Order, and the Monitoring and Reporting Program which is a part of this Order, requires that certain parameters be monitored on a continuous basis. The Facility is not staffed on a full time basis. Violations of this Order or system upsets can go undetected during this period. The Discharger shall establish an electronic system for operator notification for continuous recording device alarms. For existing continuous monitoring systems, the electronic notification system

shall be installed **within 6 months** of adoption of this Order. For systems installed following Order adoption, the notification system shall be installed simultaneously.

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

6. **Other Special Provisions – Not Applicable**

7. **Compliance Schedules – Not Applicable**

VII. COMPLIANCE DETERMINATION

A. **BOD_5 and TSS Effluent Limitations (Sections IV.A.1.a., IV.A.1.b., IV.C.16.a., and IV.C.16.b.).** Compliance with the final effluent limitations for BOD_5 and TSS required in Limitations and Discharge Requirements section IV.A.1.a. and Recycled Water Specifications section IV.C.16.a. shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Limitations and Discharge Requirements section IV.A.1.b. and Recycled Water Specifications section IV.C.16.b. for percent removal shall be calculated using the arithmetic mean of BOD_5 and TSS in effluent samples collected over a monthly period as a percentage of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.

B. **Total Coliform Effluent Limitations (Sections IV.A.1.e. and IV.C.16.c.).** For each day that an effluent sample is collected and analyzed for total coliform, the 7-day median shall be determined by calculating the median concentration of total coliform bacteria in the effluent utilizing the bacteriological results of the last 7 days. For example, if a sample is collected on a Wednesday, the result from that sampling event and all results from the previous 6 days (i.e., Tuesday, Monday, Sunday, Saturday, Friday, and Thursday) are used to calculate the 7-day median. If the 7-day median of total coliform exceeds a most probable number (MPN) of 2.2 per 100 milliliters, the Discharger will be considered out of compliance.

C. **Priority Pollutant Effluent Limitations.** Compliance with effluent limitations for priority pollutants shall be determined in accordance with Section 2.4.5 of the SIP, as follows:

1. The Discharger shall be deemed out of compliance with an effluent limitation if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

2. The Discharger shall be required to conduct a Pollutant Minimization Program (PMP) in accordance with section 2.4.5.1 of the SIP when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:

   a. A sample result is reported as detected, but not quantified (DNQ) and the effluent limitation is less than the RL; or

   b. A sample result is reported as non-detect (ND) and the effluent limitation is less than the method detection limit (MDL).

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

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

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

4. If a sample result, or the arithmetic mean or median of multiple sample results, is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation <u>and</u> the discharger conducts a PMP (as described in section 2.4.5.1 of the SIP), the Discharger shall <u>not</u> be deemed out of compliance.

D. Mass Effluent Limitations. The mass effluent limitations contained Limitations and Discharge Requirements section IV.A.1.a. and Recycled Water Specifications section IV.C.16.a. are based on the permitted average flow and calculated as follows:

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

ATTACHMENT A – DEFINITIONS

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

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

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

Best Practicable Treatment or Control (BPTC)
BPTC is a requirement of State Water Resources Control Board Resolution No. 68-16 – "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (referred to as the "Antidegradation Policy"). BPTC is the treatment or control of a discharge necessary to assure that "*(a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained*." Pollution is defined in California Water Code section 13050(l). In general, an exceedance of a water quality objective in the Basin Plan constitutes "pollution".

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

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

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

Daily Discharge
Daily discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of 1 day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

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

Detected, but Not Quantified (DNQ)
DNQ are those sample results less than the Reporting Level (RL), but greater than or equal to the laboratory's MDL.

Dilution Credit
Dilution credit is the amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined through conducting a mixing zone study or modeling of the discharge and receiving water.

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

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

Estimated Chemical Concentration
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the Minimum Level (ML) value. Same as Detected, but not Quantified.

Estuaries
Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters include, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code

section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

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

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

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

LC50
The concentration of effluent that is lethal to 50% of the exposed test organisms, measured in a dilution series ranging from 100% effluent to 0% effluent.

Lowest Observed Effect Concentration (LOEC)
The lowest concentration of an effluent at which adverse effects are observed on an aquatic test organism.

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

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

Method Detection Limit (MDL)
MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR Part 136, Appendix B.

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

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

No Observed Effect Concentration (NOEC)
The highest concentration of toxicant to which organisms are exposed in a full life-cycle or partial life-cycle (short-term) test, that causes no observable adverse effects on the test organisms (i.e., the highest concentration of toxicant in which the values for the observed responses are not statistically significantly different from the controls).

Not Detected (ND)
Sample results which are less than the laboratory's MDL.

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

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

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

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

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

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

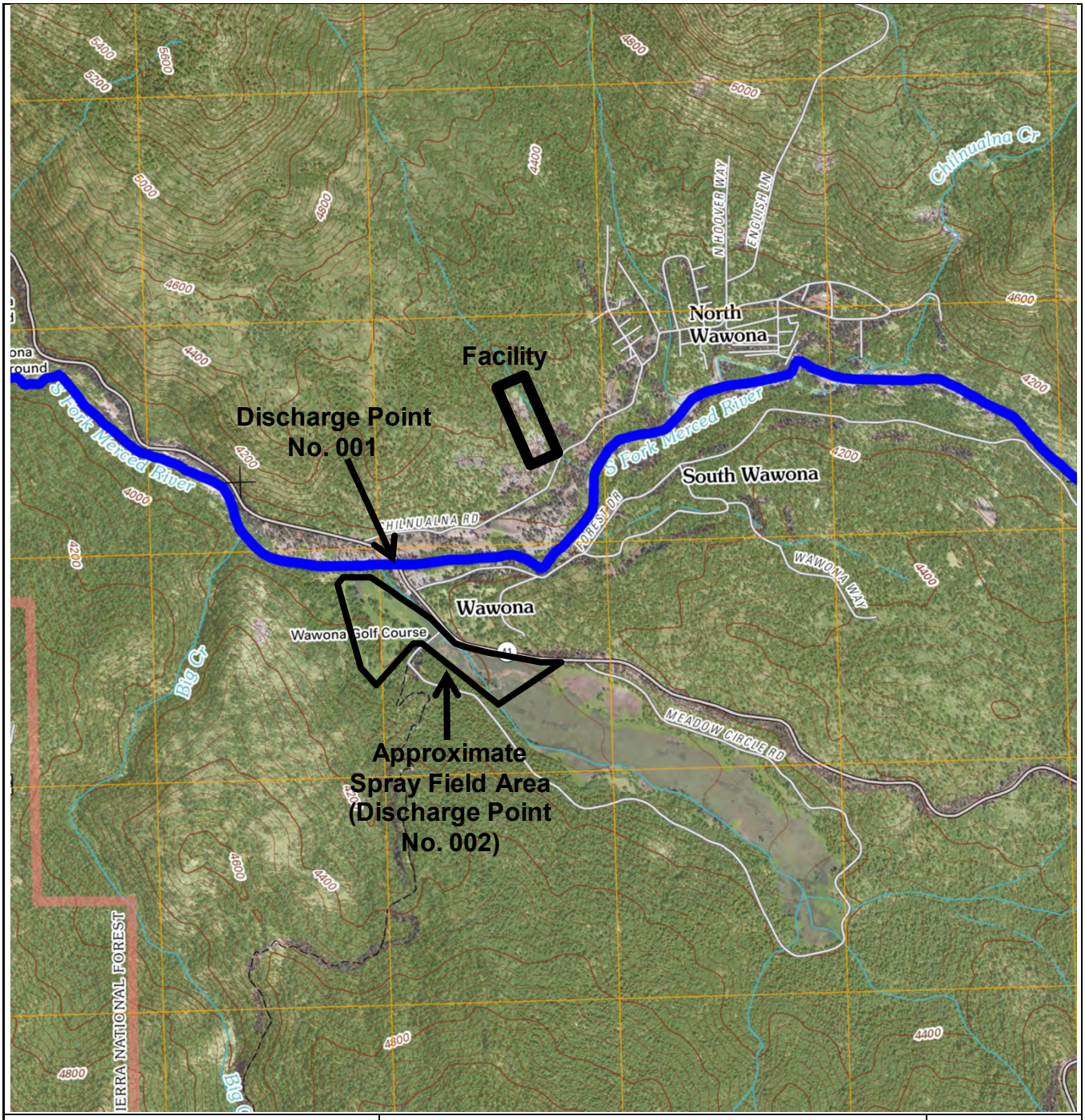
Standard Deviation (σ)
Standard Deviation is a measure of variability that is calculated as follows:

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

where:
x is the observed value;
μ is the arithmetic mean of the observed values; and
n is the number of samples.

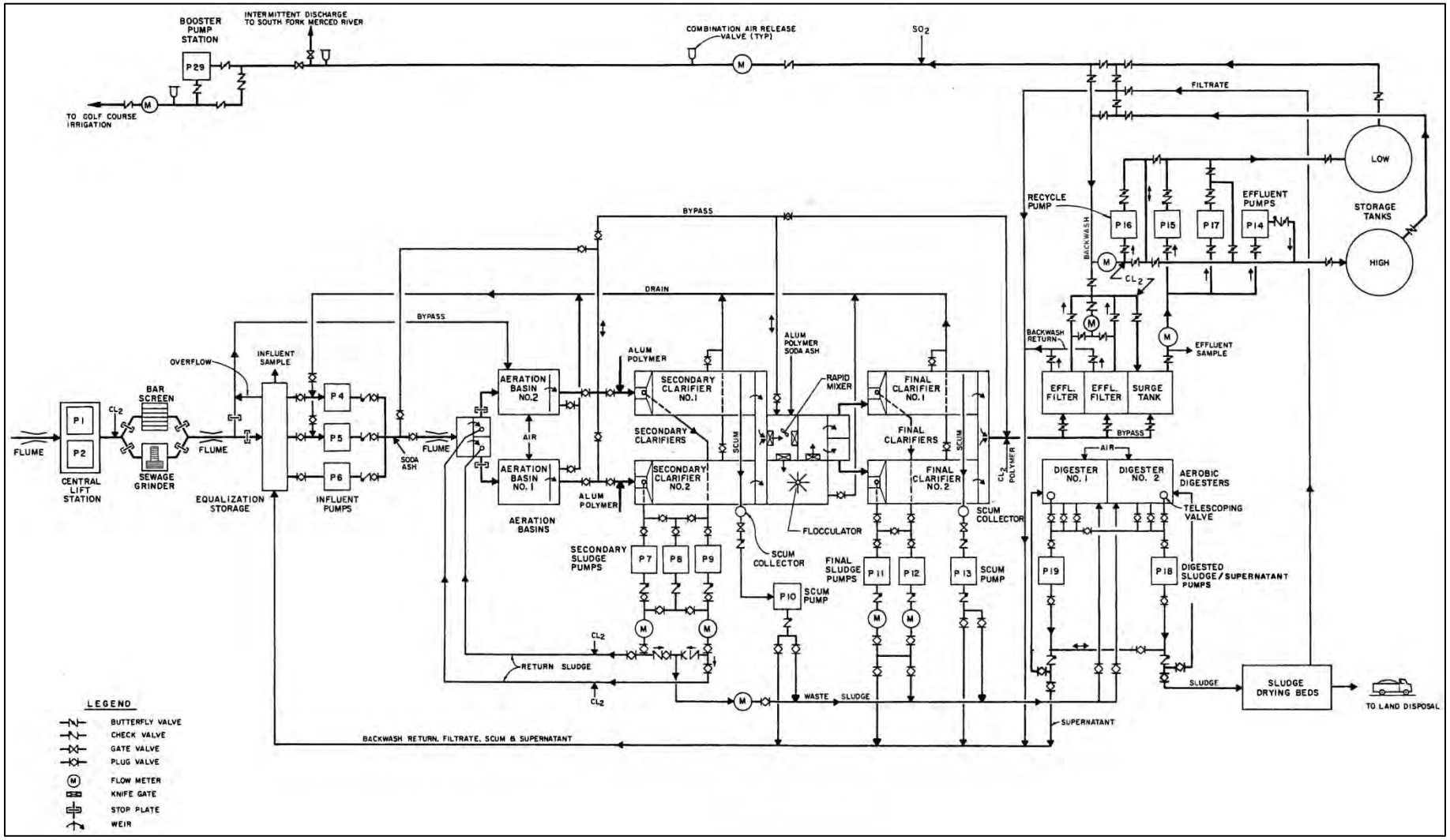
Toxicity Reduction Evaluation (TRE)
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first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

ATTACHMENT B – MAP



Drawing Reference: WAWONA U.S.G.S. TOPOGRAPHIC MAP 7.5 MINUTE QUADRANGLE 2012 Not to scale	SITE LOCATION MAP USDOI, NATIONAL PARK SERVICE, YOSEMITE NATIONAL PARK WAWONA WASTEWATER TREATMENT FACILITY	N W E S

ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

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

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

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

The Discharger shall allow the Central Valley Regional Water Quality Control Board (Central Valley Water Board), State Water Resources Control Board (State Water Board), United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 CFR 122.41(i); Water Code section 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 CFR 122.41(i)(1));

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

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

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

G. Bypass

1. Definitions

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

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

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

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

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

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

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

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

5. Notice

a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 CFR 122.41(m)(3)(i))

b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions – Reporting V.E below (24-hour notice). (40 CFR 122.41(m)(3)(ii))

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was

caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR 122.41(n)(2))

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

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

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

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

This Order is not transferable to any person except after notice to the Central Valley Water Board. The Central Valley Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 CFR 122.41(l)(3) and 122.61)

III. STANDARD PROVISIONS – MONITORING

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

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

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board Executive Officer at any time. (40 CFR 122.41(j)(2))

B. Records of monitoring information shall include:

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

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

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

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

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

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

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

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

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

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

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

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

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

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

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

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard

Provisions – Reporting V.B.3 above must be submitted to the Central Valley Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR 122.22(c))

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

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

C. Monitoring Reports

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

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

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

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The Discharger shall notify the California Emergency Management Agency (formerly the Office of Emergency Services) of any noncompliance that may endanger health or the environment within two (2) hours from the time the Discharger becomes

aware of the circumstances. The Discharger shall notify the Central Valley Water Board of the noncompliance by telephone or fax within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided to the Central Valley Water Board within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR 122.41(l)(6)(i))

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

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

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

3. The Central Valley Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR 122.41(l)(6)(iii))

F. Planned Changes

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

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

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

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR 122.41(l)(1)(iii))

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Central Valley Water Board as soon as they know or have reason to believe (40 CFR 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 CFR 122.42(a)(1)):

a. 100 micrograms per liter (µg/L) (40 CFR 122.42(a)(1)(i));

b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 CFR 122.42(a)(1)(ii));

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

d. The level established by the Central Valley Water Board in accordance with 40 CFR 122.44(f). (40 CFR 122.42(a)(1)(iv))

2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 CFR 122.42(a)(2)):

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

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

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

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

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Table of Contents

I. General Monitoring Provisions E-2
II. Monitoring Locations E-3
III. Influent Monitoring Requirements E-4
  A. Monitoring Location INF-001 ..... E-4
IV. Effluent Monitoring Requirements E-4
  A. Monitoring Location EFF-001 ..... E-4
  B. Monitoring Location EFF-002 ..... E-5
V. Whole Effluent Toxicity Testing Requirements E-6
VI. Land Discharge Monitoring Requirements – Not Applicable E-9
VII. Recycled Water Monitoring Requirements E-9
  A. Monitoring Location REC-001 ..... E-9
  B. Monitoring Location REC-002 ..... E-10
VIII. Receiving Water Monitoring Requirements – Surface Water E-11
  A. Monitoring Locations RSW-001 and RSW-002 ..... E-11
IX. Other Monitoring Requirements E-12
  A. Biosolids E-12
  B. Municipal Water Supply E-13
  C. Filtration System Monitoring E-13
  D. Disinfection System Monitoring E-14
X. Reporting Requirements E-14
  A. General Monitoring and Reporting Requirements E-14
  B. Self-Monitoring Reports (SMRs) E-15
  C. Discharge Monitoring Reports (DMRs) – Not Applicable E-19
  D. Other Reports E-19

List of Tables

Table E-1. Monitoring Station Locations E-3
Table E-2. Influent Monitoring E-4
Table E-3. Effluent Monitoring – Monitoring Location EFF-001 ..... E-5
Table E-4. Effluent Monitoring – Monitoring Location EFF-002 ..... E-5
Table E-5. Chronic Toxicity Testing Dilution Series E-8
Table E-6. Recycled Water Monitoring Requirements – Monitoring Location REC-001 ..... E-9
Table E-7. Recycled Water Monitoring Requirements – Monitoring Location REC-002 ..... E-11
Table E-8a. Receiving Water Monitoring Requirements at RSW-001 ..... E-11
Table E-8b. Receiving Water Monitoring Requirements at RSW-001 and RSW-002 ..... E-12
Table E-9. Municipal Water Supply Monitoring Requirements E-13
Table E-10. Filtration System Monitoring at INT-001 ..... E-13
Table E-11. Filtration System Monitoring at INT-002 ..... E-14
Table E-12. Disinfection System Monitoring E-14
Table E-13. Monitoring Periods and Reporting Schedule E-15

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Title 40 of the Code of Federal Regulations (CFR), section 122.48 (40 CFR 122.48) requires that all NPDES permits specify monitoring and reporting requirements. California Water Code (Water Code) sections 13267 and 13383 also authorize the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) to require technical and monitoring reports. This Monitoring and Reporting Program establishes monitoring and reporting requirements, which implement the federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of the Central Valley Water Board.

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

C. Chemical, bacteriological, and bioassay analyses of any material required by this Order shall be conducted by a laboratory certified for such analyses by the California Department of Public Health (DPH). Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Central Valley Water Board. In the event a certified laboratory is not available to the Discharger for any onsite field measurements such as pH, dissolved oxygen, turbidity, temperature, and residual chlorine, such analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program for any onsite field measurements such as pH, dissolved oxygen, turbidity, temperature, and residual chlorine must be kept onsite in the treatment facility laboratory and shall be available for inspection by Central Valley Water Board staff, State Water Resources Control Board (State Water Board) staff, United States Environmental Protection Agency (USEPA) staff, and/or their authorized representatives. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Central Valley Water Board.

D. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their

continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

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

G. The Discharger shall conduct analysis on any sample provided by USEPA as part of the Discharge Monitoring Quality Assurance (DMQA) program. The results of any such analysis shall be submitted to USEPA's DMQA manager.

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

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

II. MONITORING LOCATIONS

The Discharger shall monitor the following locations to demonstrate compliance with the effluent limitations, recycled water specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	Facility influent, prior to any treatment or any Facility return flows
001	EFF-001	After treatment and storage units, at the last connection prior to discharge to South Fork Merced River.
001	EFF-002	Outlet of the surge tank prior to discharge to the storage tanks during periods of discharge to South Fork Merced River.
002	REC-001	Outlet of the surge tank prior to discharge to the storage tanks during periods of discharge to the Wawona Golf Course.
002	REC-002	Required monitoring for recycled water discharged to the Wawona Golf Course. At the golf course booster pump station, after all treatment and storage units, at the last connection prior to discharge to the golf course.
--	RSW-001	South Fork Merced River, approximately 250 feet upstream from the location of Discharge Point No. 001
--	RSW-002	South Fork Merced River, approximately 50 feet downstream from the location of Discharge Point No. 001
--	BIO-001	A location where a representative sample of the biosolids can be obtained
--	SPL-001	A location where a representative sample of the municipal water supply can be obtained

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INT-001	A location where a representative sample of the influent to the filtration system can be obtained
--	INT-002	A location where a representative sample of the effluent from the filtration system prior to disinfection can be obtained
--	INT-003	A location where a representative sample of the effluent from the disinfection system can be obtained. Sampling of the effluent in the storage tanks may be used to satisfy monitoring requirements for this location.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

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

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-hr Composite[1]	1/Week	[2]
Total Suspended Solids	mg/L	24-hr Composite[1]	1/Week	[2]
Non-Conventional Pollutants				
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Quarter	[2,3]
Total Dissolved Solids	mg/L	Grab	1/Quarter	[2]

[1] 24-hour flow proportional composite.
[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; or by methods approved by the Central Valley Water Board or the State Water Board.
[3] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor effluent from the storage tanks to South Fork Merced River at Monitoring Location EFF-001, as follows, during periods of discharge to South Fork Merced River. If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed in Table E-3 after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in Table E-3.

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

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
pH	standard units	Grab	1/Day[1,2]	[3,5]
Non-Conventional Pollutants				
Chlorine, Total Residual	mg/L	Grab	1/Day	[3,4,5]
Dissolved Oxygen	mg/L	Grab	1/Day	[3,5]
Temperature	°C/°F	Grab	1/Day[1]	[3,5]
Turbidity	NTU	Grab	1/Day	[3,5]

[1] pH and temperature shall be recorded at the time of ammonia sample collection at Monitoring Location EFF-002.
[2] pH samples shall be collected immediately downstream of the dechlorination unit(s).
[3] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[4] Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L.
[5] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

B. Monitoring Location EFF-002

1. The Discharger shall monitor effluent from the surge tanks to the storage tanks at Monitoring Location EFF-002 as follows during periods of discharge to South Fork Merced River. If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed in Table E-4, except Priority Pollutants and Other Constituents of Concern, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in Table E-4.

Table E-4. Effluent Monitoring – Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-hr Composite[1]	2/Week	[2]
	lbs/day	Calculate	2/Week	--
pH	standard units	Grab	1/Day	[2,6]
Total Suspended Solids	mg/L	24-hr Composite[1]	2/Week	[2]
	lbs/day	Calculate	2/Week	--
Priority Pollutants				
Copper, Total Recoverable	µg/L	24-hr Composite[1]	1/Month	[2,3]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dichlorobromomethane	µg/L	Grab	1/Month	[2,3]
Zinc, Total Recoverable	µg/L	24-hr Composite[1]	1/Month	[2,3]
Priority Pollutants	vary	See Att. I	See Att. I	[2,7]
Non-Conventional Pollutants				
Ammonia Nitrogen, Total (as N)	mg/L	24-hr Composite[1]	1/Week[4]	[2]
	lbs/day	Calculate	1/Week	--
Chlorine, Total Residual	mg/L	Grab	1/Day	[2,5,6]
Electrical Conductivity @ 25°C	µmhos/cm	24-hr Composite[1]	1/Week	[2,6]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month	[2]
Nitrite plus Nitrate (as N)	mg/L	24-hr Composite[1]	1/Month	[2]
Nitrite Nitrogen, Total (as N)	mg/L	24-hr Composite[1]	1/Month	[2]
Phosphorus, Total (as P)	mg/L	24-hr Composite[1]	2/Month	[2]
	lbs/day	Calculate	2/Month	--
Total Coliform	MPN/100 mL	Grab	1/Day	[2]

[1] 24-hour flow proportional composite.

[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

[3] The reporting level shall be any of the minimum levels listed in Appendix 4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP) that are below the effluent limitations specified in Section IV.A.1.a., Table 6 of this Order. If the lowest minimum level published in Appendix 4 of the SIP is not less than the effluent limitation, the reporting level shall be the lowest minimum level specified in Appendix 4 of the SIP.

[4] pH and temperature shall be recorded at Monitoring Location EFF-001 at the time of ammonia sample collection.

[5] Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L.

[6] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

[7] Reporting levels shall be equal to the reporting levels specified in Attachment I of this Order. If more than one analytical test method is listed for a given parameter in Attachment I, the Discharger must select from the listed methods and corresponding reporting level.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing. The Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the following acute toxicity testing requirements:

1. *Monitoring Frequency* – The Discharger shall perform **annual (1/year)** acute toxicity testing, concurrent with effluent ammonia sampling.

2. *Sample Type* – The samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001.

3. *Test Species* – Test species shall be rainbow trout (*Oncorhynchus mykiss*).

4. *Test Type and Duration* – Test type shall be static renewal, and the test duration shall be 96 hours.

5. *Dilutions* – The acute toxicity testing shall be performed using undiluted effluent.

6. *Test Method* – The acute toxicity testing samples shall be analyzed using *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. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

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

B. Chronic Toxicity Testing. The Discharger shall conduct three species chronic toxicity testing to determine whether the effluent is contributing chronic toxicity to the receiving water. The Discharger shall meet the following chronic toxicity testing requirements:

1. *Monitoring Frequency* – The Discharger shall perform three species chronic toxicity testing **once during the permit term (1/Permit Term)** during the first discharge to South Fork Merced River.

2. *Sample Types* – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at Monitoring Location EFF-001. The receiving water control shall be a grab sample obtained from Monitoring Location RSW-001, as identified in this Monitoring and Reporting Program.

3. *Sample Volumes* – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.

4. *Test Species* – Chronic toxicity testing measures sublethal (e.g., reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:

   - The cladoceran, 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).

5. *Test Methods* – The presence of chronic toxicity shall be estimated as specified 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 (Method Manual).

6. *Reference Toxicant* – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.

7. *Dilutions* – For regular and accelerated chronic toxicity monitoring, it is not necessary to perform the test using a dilution series. The test may be performed using 100% effluent and two controls. For Toxicity Reduction Evaluation (TRE) monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-5, below, unless use of an alternative diluent is detailed in the submitted TRE Action Plan, or when the receiving water is toxic.

Table E-5. Chronic Toxicity Testing Dilution Series

Sample	Dilutions (%)					Controls	
	100	75	50	25	12.5	Receiving Water	Laboratory Water
% Effluent	100	75	50	25	12.5	0	0
% Receiving Water	0	25	50	75	87.5	100	0
% Laboratory Water	0	0	0	0	0	0	100

8. *Test Failure* – The Discharger must re-sample and re-test as soon as possible, but no later than fourteen (14) days after receiving notification of a test failure. A test failure is defined as follows:

   a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the Method Manual, and its subsequent amendments or revisions; or

   b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in Table 6 on page 52 of the Method Manual. A retest is only required in this case if the test results do not exceed the monitoring trigger specified in Special Provision VI.C.2.a.iii. of the Order.

C. WET Testing Notification Requirements. The Discharger shall notify the Central Valley Water Board **within 24 hours** after the receipt of test results exceeding the monitoring trigger during regular or accelerated monitoring, or an exceedance of an acute toxicity effluent limitation.

D. WET Testing Reporting Requirements. All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

1. **Chronic WET Reporting.** Regular chronic toxicity monitoring results shall be reported to the Central Valley Water Board **within 30 days** following completion of the test, and shall contain, at minimum:

   a. The dates of sample collection and initiation of each toxicity test; and

   b. The results compared to the numeric toxicity monitoring trigger.

   Additionally, the monthly Discharger self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or TRE.

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted **within 30 days** following completion of the test and reported as percent survival.

3. **TRE Reporting.** Reports for TREs shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Work Plan, or as amended by the Discharger's TRE Action Plan.

4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:

   a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.

   b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.

   c. Any information on deviations or problems encountered and how they were dealt with.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECYCLED WATER MONITORING REQUIREMENTS

A. Monitoring Location REC-001

1. The Discharger shall monitor effluent from the surge tanks to the storage tanks at Monitoring Location REC-001 as follows during periods of discharge to the reclamation area (Discharge Point No. 002).

Table E-6. Recycled Water Monitoring Requirements – Monitoring Location REC-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Meter	Continuous	--

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Conventional Pollutants				
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-hr Composite[1]	2/Week	[2]
	lbs/day	Calculate	2/Week	--
pH	standard units	Grab	1/Day	[2,7]
Total Suspended Solids	mg/L	24-hr Composite[1]	2/Week	[2]
	lbs/day	Calculate	2/Week	--
Priority Pollutants				
Priority Pollutants	vary	See Att. I	See Att. I	[2,3]
Non-Conventional Pollutants				
Aluminum, Total Recoverable	µg/L	24-hr Composite[1]	1/Quarter[4]	[2,5]
Ammonia Nitrogen, Total (as N)	mg/L	24-hr Composite[1]	1/Month	[2]
Chlorine, Total Residual	mg/L	Grab	1/Day	[2,7,8]
Electrical Conductivity @ 25°C	µmhos/cm	24-hr Composite[1]	1/Week	[2,7]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month	[2]
Nitrite plus Nitrate (as N)	mg/L	24-hr Composite[1]	1/Month	[2]
Phosphorus, Total (as P)	mg/L	24-hr Composite[1]	2/Month	[2]
	lbs/day	Calculate	2/Month	--
Standard Minerals[6]	mg/L	Grab	1/Year	[2]
Temperature	°C/°F	Grab	1/Day	[2,7]
Total Coliform	MPN/100 mL	Grab	1/Day	[2]
Total Kjeldahl Nitrogen (as N)	mg/L	24-hr Composite[1]	1/Month	[2]

[1] 24-hour flow proportional composite.

[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

[3] For priority pollutant constituents the reporting level shall be consistent with Sections 2.4.2 and 2.4.3 of the State Implementation Policy. See Attachment I, Table I-1.

[4] Monitoring shall be conducted quarterly for the first 2 years following the effective date of the permit.

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

[6] Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).

[7] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

[8] Total chlorine residual must be monitored with a method sensitive to and accurate at a detection level of 0.01 mg/L.

B. Monitoring Location REC-002

1. The Discharger shall monitor effluent at Monitoring Location REC-002 as follows during periods of discharge to the reclamation area (Discharge Point No. 002).

Table E-7. Recycled Water Monitoring Requirements – Monitoring Location REC-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	standard units	Grab	1/Month	[1, 2]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[2] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

A. Monitoring Locations RSW-001 and RSW-002

1. The Discharger shall monitor South Fork Merced River at Monitoring Location RSW-001 as follows, **regardless of whether there is a discharge to South Fork Merced River** and only between 1 December and 31 May. Monitoring shall be conducted ~~between 1 December and 31 May~~ for the first two years following the effective date of the permit, and may be discontinued thereafter, except as noted for flow, hardness, and priority pollutants.

Table E-8a. Receiving Water Monitoring Requirements at RSW-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Estimate	1/Day[1]	--
Conventional Pollutants				
pH	standard units	Grab	1/Month	[2,3]
Priority Pollutants				
Priority Pollutants	vary	See Att. I	See Att. I	[2,4]
Non-Conventional Pollutants				
Aluminum, Total Recoverable	µg/L	Grab	1/Month	[2,6]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month	[2,3]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month[1,5]	[2]
Temperature	°C/°F	Grab	1/Month	[2,3]

[1] The Discharger shall monitor for the duration of the permit, only between 1 December and 31 May.
[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[3] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.
[4] For priority pollutant constituents the reporting level shall be consistent with Sections 2.4.2 and 2.4.3 of the State Implementation Policy. See Attachment I, Table I-1.
[5] Monitoring shall be conducted monthly for the first ~~two~~ year~~s~~ following the effective date of the permit and **quarterly (1/quarter)** thereafter.
[6] Monitoring for aluminum can be conducted using either total or acid-soluble (inductively coupled plasma/atomic emission spectrometry or inductively coupled plasma/mass spectrometry) analysis methods, as supported by USEPA's Ambient Water Quality Criteria for Aluminum document (EPA 440/5-86-008), or

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

other standard methods that exclude aluminum silicate particles as approved by the Executive Officer.

2. The Discharger shall monitor South Fork Merced River at Monitoring Locations RSW-001 and RSW-002 as follows, during periods of discharge to South Fork Merced River:

Table E-8b. Receiving Water Monitoring Requirements at RSW-001 and RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Estimate	1/Day[1]	--
Conventional Pollutants				
pH	standard units	Grab	1/Week	[2,3]
Non-Conventional Pollutants				
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week	[2,3]
Dissolved Oxygen	mg/L	Grab	1/Week	[2,3]
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month[1]	[2]
Temperature	°C/°F	Grab	1/Week	[2,3]
Total Coliform	MPN/100 mL	Grab	2/Week	[2]
Turbidity	NTU	Grab	1/Week	[2,3]

[1] Monitoring required at Monitoring Location RSW-001 only.
[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[3] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

3. In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Monitoring Locations RSW-001 and RSW-002. Attention shall be given to the presence or absence of:

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

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

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

a. A composite sample of sludge shall be collected **annually (1/year)** at Monitoring Location BIO-001 in accordance with USEPA's *POTW Sludge Sampling and*

Analysis Guidance Document, August 1989, and tested for the metals listed in Title 22.

b. Sampling records shall be retained for a minimum of 5 years. A log shall be maintained of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary.

B. Municipal Water Supply

1. Monitoring Location SPL-001

The Discharger shall monitor the municipal water supply at Monitoring Location SPL-001 as follows. Publicly available data may be used in lieu of the monitoring established in Table E-9 below to demonstrate the average quality of the water supply.

Table E-9. Municipal Water Supply Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Dissolved Solids[1]	mg/L	Grab	1/Year	[2]
Electrical Conductivity @ 25°C[1]	µmhos/cm	Grab	1/Year	[2,3]

[1] If the water supply is from more than one source, the total dissolved solids and electrical conductivity shall be reported as a weighted average and include copies of supporting calculations.
[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[3] A hand-held field meter may be used, provided the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Monitoring and Reporting Program shall be maintained at the Facility.

C. Filtration System Monitoring

1. Monitoring Location INT-001

The Discharger shall monitor the influent to the filtration system at Monitoring Location INT-001 as follows.

Table E-10. Filtration System Monitoring at INT-001

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Filtration Rate	[4]	Meter	1/Day	--
Turbidity[5]	NTU	Meter	Continuous[1,2]	[3]

[1] For continuous analyzers, the Discharger shall report documented routine meter maintenance activities including date, time of day, and duration in which the analyzer(s) is not in operation.
[2] If turbidity exceeds 5 NTU for more than 15 minutes when not coagulating, the Discharger shall add chemicals or divert the wastewater. If turbidity exceeds 10 NTU when not coagulating and the wastewater is not diverted, the Discharger shall collect a sample as soon as practicable for total coliform at Monitoring Location EFF-002 (if discharging to South Fork Merced River) or Monitoring Location REC-001 (if discharging to the reclamation area) and report the duration of the turbidity exceedance.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

[3] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.
[4] Units are gallons per minute per square foot of surface area (gpm/ft^2).
[5] **Turbidity monitoring is only required when the Discharger is not using coagulation.**

2. Monitoring Location INT-002

a. The Discharger shall monitor the effluent from the filtration system prior to disinfection at Monitoring Location INT-002, as follows:

Table E-11. Filtration System Monitoring at INT-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Turbidity	NTU	Meter	Continuous[1,2]	[3]

[1] For continuous analyzers, the Discharger shall report documented routine meter maintenance activities including date, time of day, and duration in which the analyzer(s) is not in operation.
[2] If turbidity exceeds 10 NTU when coagulation is used or 2 NTU when coagulation is not used, and the wastewater is not diverted, the Discharger shall collect a sample as soon as practicable for total coliform at Monitoring Location EFF-002 (if discharging to South Fork Merced River) or Monitoring Location REC-001 (if discharging to the reclamation area) and report the duration of the turbidity exceedance.
[3] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136 or by methods approved by the Central Valley Water Board or the State Water Board.

b. The Discharger shall indicate in its monthly self-monitoring reports which days it used coagulation.

D. Disinfection System Monitoring

1. Monitoring Location INT-003

The Discharger shall monitor effluent from the disinfection system at Monitoring Location INT-003 as follows.

Table E-12. Disinfection System Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Chlorine Contact Time	mg-min/L	Calculate	1/Day	--

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

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

3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Central Valley Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Central Valley Water Board by letter when it returns to compliance with the compliance time schedule.

4. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "*Emergency Planning and Community Right to Know Act*" of 1986.

B. Self-Monitoring Reports (SMRs)

1. The Discharger shall continue to submit electronic self-monitoring reports (eSMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://ciwqs.waterboards.ca.gov/). The Discharger shall maintain sufficient staffing and resources to ensure it submits eSMRs during the effective duration of this Order. This includes provision of training and supervision of individuals (e.g., Discharger personnel or consultant) on how to prepare and submit eSMRs. The CIWQS web site will provide additional directions for eSMR submittal in the event there will be service interruption.

2. If the Discharger monitors any pollutant more frequently than required by this Order, the results of the additional monitoring shall be included in the calculations and reporting of the data submitted in the eSMR, including any accompanying laboratory sheets.

3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-13. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	First day of the calendar month following the permit effective date or on the permit effective date if that date is the first day of the month	Continuous	Submit with monthly eSMR

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
1/Day	First day of the calendar month following the permit effective date or on the permit effective date if that date is the first day of the month	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling	Submit with monthly eSMR
2/Week 1/Week	First Sunday of the calendar month following the permit effective date or on the permit effective date if that date is the first Sunday of the month	Sunday through Saturday	Submit with monthly eSMR
2/Month	First day of the calendar month following the permit effective date or on the permit effective date if that date is the first day of the month	First day of calendar month through last day of calendar month	Submit with monthly eSMR
1/Month	First day of the calendar month following the permit effective date or on the permit effective date if that date is the first day of the month	First day of calendar month through last day of calendar month	First day of the second month following month of sampling
1/Quarter	Closest of 1 January, 1 April, 1 July, or 1 October following (or on) permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February
1/Quarter (hardness at RSW-001)	**<1 December, ~~third~~ second year of permit>**	1 December through 28/29 February 1 March through 31 May	Submit with the monthly eSMR in which sample was taken (e.g., if a sample is taken in March, the result must be included in the March eSMR [due1 May])
1/Year	1 January following (or on) permit effective date	1 January through 31 December	Submit with the monthly eSMR in which sample was taken (e.g., if a sample is taken in March, the result must be included in the March eSMR [due1 May])
1/Year (Acute Toxicity)	1 January following (or on) permit effective date	1 January through 31 December	Submit results within 30 days following completion of test
1/Year (Annual Report)	1 January following (or on) permit effective date	1 January through 31 December	1 February of following year
1/Permit Term (Chronic Toxicity)	First day of first discharge to South Fork Merced River	**<Permit Term>**	Submit results within 30 days following completion of test

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
1/Permit Term (Priority Pollutants)	Either first day of first discharge to South Fork Merced River or, if no discharges to South Fork Merced River occur, ~~beginning **<third year>**~~between **<first half of fourth year of permit term>**	Either first day of first discharge to South Fork Merced River or, if no discharges to South Fork Merced River occur, ~~beginning **<third year>**~~between **<first half of fourth year of permit term>**	Submit with the monthly eSMR in which sample was taken (e.g., if a sample is taken in March, the result must be included in the March eSMR [due1 May])

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

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

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

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

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

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

   d. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve. The Discharger's on-site and/or contract laboratories may, as allowed by the rules governing alteration to ML values in section 2.4.3 of the SIP, employ a calibration standard lower than the ML value in Appendix 4 of the SIP.

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

those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

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

6. Reporting Requirements. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible.

a. The data shall be summarized to clearly illustrate whether the Facility is operating in compliance with interim and/or final effluent limitations or with other waste discharge requirements (e.g., recycled water specifications, receiving water limitations, special provisions, etc.).

b. Reports must clearly show when discharging to Discharge Point Nos. 001 and 002 or other permitted discharge locations. Reports must show the date that the discharge started and stopped at each location.

c. The highest daily maximum for the month and monthly and weekly averages shall be determined and recorded as needed to demonstrate compliance.

7. Calculation Requirements. The following shall be calculated and reported in the eSMRs:

a. Mass Loading Limitations. For BOD_5, TSS, ammonia, and phosphorus, the Discharger shall calculate and report the mass loading (lbs/day) in the eSMRs. The mass loading shall be calculated as follows:

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

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

b. Removal Efficiency (BOD_5 and TSS). The Discharger shall calculate and report the percent removal of BOD_5 and TSS in the SMRs. The percent removal shall be calculated as specified in Section VII.A. of the Limitations and Discharge Requirements.

c. **Total Coliform Effluent Limitations.** The Discharger shall calculate and report the 7-day median of total coliform for the effluent. The 7-day median of total coliform shall be calculated as specified in Section VII.B. of the Limitations and Discharge Requirements.

d. **Dissolved Oxygen Receiving Water Limitations.** The Discharger shall calculate and report monthly in the self-monitoring report: i) the dissolved oxygen concentration, ii) the percent of saturation in the main water mass, and iii) the 95th percentile dissolved oxygen concentration.

e. **Turbidity Receiving Water Limitations.** The Discharger shall calculate and report the turbidity increase in the receiving water applicable to the natural turbidity condition specified in Section V.A.17.a-e. of the Limitations and Discharge Requirements.

f. **Temperature Receiving Water Limitations.** The Discharger shall calculate and report the temperature increase in the receiving water based on the difference in temperature at Monitoring Locations RSW-001 and RSW-002.

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

a. When CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment under the Attachments tab. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS.

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

c. The Discharger shall attach or enter a cover letter with each eSMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation. Violations must also be entered into the CIWQS web site under the Violations tab for the reporting period in which the violation occurred.

d. eSMRs must be submitted to the Central Valley Water Board, signed and certified as required by the Standard Provisions (Attachment D), through the CIWQS web site.

C. Discharge Monitoring Reports (DMRs) – Not Applicable

D. Other Reports

1. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan required by Special Provisions VI.C of this Order. The Discharger shall submit reports with the first

monthly SMR scheduled to be submitted on or immediately following the report due date.

2. **Reporting Levels Report.** By **<60 days from permit adoption>**, the Discharger shall submit a report outlining Reporting Levels (RLs), method detection limits, and analytical methods for approval. The Discharger shall comply with the monitoring and reporting requirements for CTR constituents as outlined in sections 2.3 and 2.4 of the SIP. The maximum required RLs for priority pollutant constituents shall be based on the Minimum Levels (MLs) contained in Appendix 4 of the SIP, determined in accordance with Section 2.4.2 and Section 2.4.3 of the SIP. In accordance with Section 2.4.2 of the SIP, when there is more than one ML value for a given substance, the Central Valley Water Board shall include as RLs, in the permit, all ML values, and their associated analytical methods, listed in Appendix 4 that are below the calculated effluent limitation. The Discharger may select any one of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the Central Valley Water Board shall select as the RL, the lowest ML value, and its associated analytical method, listed in Appendix 4 of the SIP for inclusion in the permit. Table I-1 (Attachment I) provides required RLs in accordance with the SIP.

3. **Effluent and Receiving Water Characterization Study.** An effluent and receiving water monitoring study is required to ensure adequate information is available for the next permit renewal. Once during the term of the permit during the first discharge to South Fork Merced River, the Discharger shall conduct monitoring of the effluent at Monitoring Location EFF-002 and of the receiving water at Monitoring Location RSW-001 for all priority pollutants and other constituents of concern as described in Attachment I. If no discharges to South Fork Merced River occur during the first ~~2~~ 3 years of the permit term, the Discharger shall conduct monitoring of the effluent at Monitoring Location REC-001 and of the receiving water at Monitoring Location RSW-001 for all priority pollutants and other constituents of concern as described in Attachment I. The study shall be completed in conformance with the following schedule:

Task	Compliance Date
i. Submit Work Plan and Time Schedule	**<6 months from adoption of this Order>**
ii. Conduct monitoring	During the first discharge to the South Fork of the Merced River or during ~~third~~ fourth year of permit term (if no discharges to the South Fork of the Merced River occur during the first ~~2~~ 3 years of the permit term)
iii. Submit monitoring results	With the monthly eSMR in which the sample was taken (e.g., if a sample is taken in March, the result must be included in the March eSMR [due 1 May])

4. **Annual Operations Report.** By **1 February** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

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

b. The names and telephone numbers of persons to contact regarding the Facility for emergency and routine situations.

c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the Facility as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

e. The Discharger may also be requested to submit an annual report to the Central Valley Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

ATTACHMENT F – FACT SHEET

Table of Contents

I. Permit Information F-3
II. Facility Description F-4
A. Description of Wastewater and Biosolids Treatment or Controls F-4
B. Discharge Points and Receiving Waters F-5
C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data F-5
D. Compliance Summary F-6
E. Planned Changes F-7
III. Applicable Plans, Policies, and Regulations F-7
A. Legal Authorities F-7
B. California Environmental Quality Act (CEQA) F-7
C. State and Federal Regulations, Policies, and Plans F-7
D. Impaired Water Bodies on CWA 303(d) List F-8
E. Other Plans, Policies, and Regulations F-9
IV. Rationale For Effluent Limitations and Discharge Specifications F-9
A. Discharge Prohibitions F-11
B. Technology-Based Effluent Limitations F-12
1. Scope and Authority F-12
2. Applicable Technology-Based Effluent Limitations F-12
C. Water Quality-Based Effluent Limitations (WQBELs) F-13
1. Scope and Authority F-13
2. Applicable Beneficial Uses and Water Quality Criteria and Objectives F-14
3. Determining the Need for WQBELs F-27
4. WQBELs Calculations F-48
5. Whole Effluent Toxicity (WET) F-50
D. Final Effluent Limitations F-52
1. Mass-based Effluent Limitations F-52
2. Averaging Periods for Effluent Limitations F-52
3. Satisfaction of Anti-Backsliding Requirements F-53
4. Satisfaction of Antidegradation Policy F-55
5. Stringency of Requirements for Individual Pollutants F-56
E. Interim Effluent Limitations – Not Applicable F-57
F. Land Discharge Specifications – Not Applicable F-57
G. Recycled Water Specifications F-57
V. Rationale for Receiving Water Limitations F-58
A. Surface Water F-59
B. Groundwater F-61
VI. Rationale for Monitoring and Reporting Requirements F-62
A. Influent Monitoring F-62
B. Effluent Monitoring F-62
C. Whole Effluent Toxicity Testing Requirements F-65
D. Receiving Water Monitoring F-65
1. Surface Water F-65

2. Groundwater – Not Applicable F-66
E. Other Monitoring Requirements F-66
1. Recycled Water Monitoring F-66
2. Biosolids Monitoring F-66
3. Water Supply Monitoring F-66
4. Filtration System Monitoring F-66
5. Disinfection System Monitoring F-67
6. Effluent and Receiving Water Characterization Study F-67
VII. Rationale for Provisions F-67
A. Standard Provisions F-67
B. Special Provisions F-67
1. Reopener Provisions F-67
2. Special Studies and Additional Monitoring Requirements F-68
3. Best Management Practices and Pollution Prevention F-72
4. Construction, Operation, and Maintenance Specifications F-72
5. Special Provisions for Municipal Facilities (POTWs Only) – Not Applicable F-73
6. Other Special Provisions – Not Applicable F-73
7. Compliance Schedules – Not Applicable F-73
VIII. Public Participation F-74
A. Notification of Interested Parties F-74
B. Written Comments F-74
C. Public Hearing F-74
D. Waste Discharge Requirements Petitions F-75
E. Information and Copying F-75
F. Register of Interested Persons F-75
G. Additional Information F-75

List of Tables

Table F-1. Facility Information F-3
Table F-2. Historic Effluent Limitations and Monitoring Data F-5
Table F-3a. Summary of Technology-based Influent Limitation F-13
Table F-3b. Summary of Technology-based Effluent Limitation Discharge Point No. 001 ..... F-13
Table F-4. Basin Plan Beneficial Uses F-14
Table F-5. Dilution Credits Associated with Performance-based Effluent Limitations F-18
Table F-6. Copper ECA Evaluation F-25
Table F-7. Lead ECA Evaluation F-26
Table F-8. Summary of ECA Evaluations for CTR Hardness-dependent Metals F-27
Table F-9. Salinity Water Quality Criteria/Objectives F-28
Table F-10. Summary of Water Quality-Based Effluent Limitations F-49
Table F-11. Summary of Final Effluent Limitations F-56

ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	5C220701004
Discharger	United States Department of the Interior, National Park Service, Yosemite National Park
Name of Facility	Wawona Wastewater Treatment Facility
Facility Address	4004 Chilnualna Falls Road
	Wawona, CA 95389
	Mariposa County
Facility Contact, Title and Phone	Paul J. Laymon, Facility Manager, Branch of Utilities, (209) 379-1077
Authorized Person to Sign and Submit Reports	Don Neubacher, Park Superintendent, Yosemite National Park, (209) 372-0201
Mailing Address	P.O. Box 700-W, El Portal, CA 95318
Billing Address	Same as Mailing Address
Type of Facility	Domestic Wastewater Treatment Plant
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Pretreatment Program	No
Reclamation Requirements	Producer
Facility Permitted Flow	0.288 million gallons per day (MGD) to South Fork Merced River
Facility Design Flow	0.105 MGD
Watershed	Merced River Hydrologic Unit, South Fork Merced River Hydrologic Area (537.40)
Receiving Water	South Fork Merced River
Receiving Water Type	Inland surface water

A. The United States Department of the Interior, National Park Service, Yosemite National Park (hereinafter Discharger) is the owner and operator of the Wawona Wastewater Treatment Facility (hereinafter Facility), a domestic wastewater treatment plant.

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

B. The Facility discharges wastewater to South Fork Merced River, a tributary of Merced River, a water of the United States, and was regulated by Order R5-2005-0155 which was adopted on 21 October 2005 and expired on 21 October 2010. The terms and conditions of Order R5-2005-0155 were automatically continued and remained in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit were adopted pursuant to this Order.

C. The Discharger filed a report of waste discharge (ROWD) and submitted an application for renewal of its WDRs and NPDES permit on 19 April 2010. Supplemental information was requested on 27 April 2012 and 8 May 2012 and received on 3 May 2012, 8 May 2012 and 10 May 2012.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the community of Wawona, which serves approximately 300 service connections that include public and private visitor service facilities, National Park Service housing facilities, the Wawona Hotel Complex, the Wawona Seventh-Day Adventist Camp, and nearby picnic areas. The population of Wawona varies throughout the year. During fall and winter, the population of the community can be as little as 160 residents, with weekend increases due to vacation and rental cabins. During summer and spring, the population increases to about 1,740 residents and visitors.

A. Description of Wastewater and Biosolids Treatment or Controls

The treatment system consists of a headworks with two grinders, an equalization tank, an activated sludge treatment system, coagulant and polymer injections, rapid mixing, flocculation, final sedimentation, and sand filtration. Phosphorus is removed by adding aluminum sulfate in the final treatment units. Effluent is chlorinated and pH-balanced before storage in two above-ground storage tanks, which provide a total capacity of 5 million gallons. The storage tanks also provide chlorine contact time. The Facility has a design treatment capacity of 0.105 MGD.

Disinfected, tertiary-treated wastewater from the storage tanks is recycled for irrigation on the Wawona Golf Course at Discharge Point No. 002. Wastewater gravity flows from the tanks to the golf course pump station and is distributed through the golf course irrigation system. Recycled wastewater either evaporates, is taken up by vegetation, or percolates to groundwater. Following closure of the golf course every October, the Discharger maximizes effluent application in order to enter the winter months with as much storage capacity as possible. During the winter, when minimal or no snowpack and temperatures allow, the Discharger continues to apply wastewater to the golf course. Commencing around the end of April, the Discharger begins storing effluent in anticipation of providing the irrigation needs of the golf course in later spring. From approximately early through mid-summer, when irrigation demand exceeds recycled

water production, raw water from South Fork Merced River is blended with the effluent in the storage tanks and used to supplement irrigation water for the golf course.

When wastewater flows exceed the irrigation needs and storage capacity of the Facility, wastewater may be discharged to South Fork Merced River at Discharge Point No. 001 through a diffuser installed under cobbles in the river bed. When surface water discharges occur, wastewater from the storage tanks is dechlorinated prior to discharge. The diffuser is located beneath the main flow channel and is designed to promote rapid mixing of the effluent with the river. The diffuser has a maximum capacity of 200 gallons per minute (0.288 MGD). The Discharger has not discharged to Discharge Point No. 001 since approximately 1989, and there were no discharges to the River during the term of Order R5-2005-0155.

Sludge is digested in two aerobic sludge digesters. Six concrete-lined sludge drying beds are available; however, digested sludge is currently transported to the Discharger's El Portal Wastewater Treatment Facility for anaerobic digestion and dewatering. Sludge produced from both facilities is combined and hauled off-site by a contract hauler and applied on agricultural lands in the San Joaquin Valley.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 34, T4S, R21E, MDB&M, as shown in Attachment B, a part of this Order.

2. Treated municipal wastewater is discharged at Discharge Point No. 001 to South Fork Merced River, a tributary of Merced River, a water of the United States, at a point latitude 37° 32' 18" N and longitude 119° 39' 33" W.

3. Treated municipal wastewater is recycled at Discharge Point No. 002 for irrigation of the Wawona Golf Course at a point latitude 37° 32' 15" N and longitude 119° 39' 33" W.

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

Effluent limitations contained in Order R5-2005-0155 for discharges from Discharge Point No. 001. No discharges occurred at Discharge Point No. 001 during the term of Order R5-2005-0155; therefore, monitoring data reported in the following table represents monitoring data collected at Monitoring Location M-002 for recycled water discharged to the Wawona Golf Course at Discharge Point No. 002.

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitations			Monitoring Data (October 2005 – January 2012)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow	MGD	0.105[1]	--	0.288	0.123[2]	--	0.893[2]

Parameter	Units	Effluent Limitations			Monitoring Data (October 2005 – January 2012)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	6.2	NR	9.3
	lbs/day	8.7	13	17	6.0	NR	9.1
	% removal	90	--	--	NR	--	--
Total Suspended Solids	mg/L	10	15	20	2.8	NR	5.0
	lbs/day	8.7	13	17	2.5	NR	4.1
	% removal	90	--	--	NR	--	--
Settleable Solids	ml/L	0.1	--	0.1	<0.1	--	<0.1
Phosphorus, Total (as P)	mg/L	0.5	0.75	1	0.40	NR	0.52
	lbs/day	0.44	0.66	0.87	0.31	NR	0.45
pH	standard units	--	--	6.5 – 8.5[12]	--	--	6.5 – 7.98[12]
Copper, Total Recoverable	µg/L	--	--	488[3]	12	NR	12
	µg/L	0.80[4]	--	1.6[4]			
	lbs/day	--	--	0.43[3]	NR	NR	NR
	lbs/day	0.0007[4]	--	0.00143[4]			
Total Coliform	MPN/100 mL	2.2[5]	23[6]	240[7]	--	--	4
Turbidity	NTU	--	5[8]	10[7]/2[9]	--	--	1.2
Filtration Rate	gpm/ft^2	--	--	5	--	--	1.63
Chlorine, Total Residual	mg/L	--	0.01[10]	0.02[11]	--	--	NR

1 Monthly influent flow, as measured by the influent flow meter.
2 Value represents the maximum observed influent flow at Monitoring Location INF-001.
3 Interim effluent limitation effective until 21 October 2010.
4 Final effluent limitation effective 21 October 2010.
5 Applied as a 7-day median effluent limitation.
6 Not to be exceeded more than once in any 30-day period.
7 Not to be exceeded at any time.
8 Not to be exceeded more than 5 percent of the time.
9 Applied as a daily average effluent limitation.
10 Applied as a 4-day average effluent limitation.
11 Applied as a 1-hour average effluent limitation.
12 Minimum to maximum range

D. Compliance Summary

1. A compliance inspection of the Facility was conducted on 26 January 2009. The inspection found that self-monitoring reports (SMRs) were incomplete and that the Discharger had not submitted progress reports as required by Order R5-2005-0155.

2. A compliance inspection of the Facility was conducted on 6 May 2010. No permit violations were noted during the inspection.

E. Planned Changes

1. The Discharger indicated in the ROWD that the existing sludge drying beds perform well during the summer when evaporation is high but do not perform as well in the winter. Therefore, the Discharger is evaluating alternative solids dewatering systems that can perform year-round.

2. The Discharger is currently developing the Merced Wild and Scenic River Comprehensive Management Plan and Environmental Impact Statement (Merced River Plan/EIS) to guide future management activities in the river corridor, including site-specific actions needed to protect the river at Wawona. As part of the Merced River Plan, the Discharger is pursuing planning and technical studies to identify the actions needed to eliminate any need to discharge to surface water. Potential alternatives include: 1) increasing storage capacity to allow further flexibility in operations and provide a higher margin of safety, or 2) finding an alternative land disposal site.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

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

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plan.** This Order implements the following water quality control plan as specified in the Finding contained at section II.H of this Order.

   a. *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised October 2011 (Basin Plan)

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** This Order implements the NTR and CTR as specified in the Finding contained at section II.I of this Order.

3. **State Implementation Policy (SIP).** This Order implements the SIP as specified in the Finding contained at section II.J of this Order.

4. **Alaska Rule.** This Order is consistent with the Alaska Rule as specified in the Finding contained at section II.L of this Order.

5. **Antidegradation Policy.** As specified in the Finding contained at section II.N of this Order and as discussed in detail in the Fact Sheet (Attachment F, Section IV.D.4.), the discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board (State Water Board) Resolution No. 68-16.

6. **Anti-Backsliding Requirements.** This Order is consistent with anti-backsliding policies as specified in the Finding contained at section II.O of this Order. Compliance with the anti-backsliding requirements is discussed in the Fact Sheet (Attachment F, Section IV.D.3).

7. **Emergency Planning and Community Right to Know Act.** This Order requires the Discharger to report any spills or releases to the State Emergency Response Commission in accordance with the Emergency Planning and Community Right to Know Act of 1986.

8. **Storm Water Requirements.** USEPA promulgated federal regulations for storm water on 16 November 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from wastewater treatment facilities. Wastewater treatment facilities are applicable industries under the storm water program and are obligated to comply with the federal regulations. The State Water Board does not require wastewater treatment facilities with design flows less than 1 MGD to obtain coverage under the Industrial Stormwater General Order. This Order does not regulate storm water.

9. **Endangered Species Act.** This Order is consistent with the Endangered Species Act as specified in the Finding contained at section II.P of this Order.

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

1. Under section 303(d) of the 1972 CWA, states, territories, and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 11 October 2011, USEPA gave final approval to California's 2010 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR Part 130, et seq.).*" The Basin Plan also states, "*Additional treatment beyond minimum federal requirements will be imposed on dischargers to WQLSs. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." South Fork Merced River is not listed as a WQLS on the 303(d) list of impaired waterbodies.

2. **Total Maximum Daily Loads (TMDLs).** USEPA requires the Central Valley Water Board to develop TMDLs for each 303(d) listed pollutant and water body combination. No TMDLs are scheduled for South Fork Merced River.

E. Other Plans, Policies, and Regulations

1. **Title 27, California Code of Regulations (CCR), section 20005 et seq (hereinafter Title 27).**

   a. The discharge authorized herein and the treatment and storage facilities associated with the discharge of treated municipal wastewater, except for discharges of residual sludge and solid waste, are exempt from the requirements of Title 27, California Code of Regulations (CCR), section 20005 *et seq* (hereafter Title 27). The exemption of the treatment and storage facilities, pursuant to Title 27 CCR section 20090(a), is based on the following:

   i. The waste consists primarily of domestic sewage and treated effluent;

   ii. The waste discharge requirements are consistent with water quality objectives; and

   iii. The treatment and storage facilities described herein are associated with a municipal wastewater treatment plant.

   b. Discharges of wastewater to land may be exempt from the requirements of Title 27, CCR, section 20090 et seq. Section 20090(h) contains a reuse exemption, which contains an unconditional exemption for "*Recycling or other use of materials salvaged from waste, or produced by waste treatment, such as scrap metal, compost, and recycled chemicals, provided that discharges of residual wastes from recycling or treatment operations to land shall be according to applicable provisions of this division.*" Water used for golf course irrigation is reclaimed tertiary treated effluent. Therefore, golf course irrigation water is exempt from the requirements of Title 27, pursuant to Title 27, CCR, section 20090(h).

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., §1311(b)(1)(C); 40 CFR 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to federal regulations, 40 CFR 122.44(d)(1)(i), NPDES

permits must contain limits that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" Federal regulations, 40 CFR 122.44(d)(1)(vi), further provide that "[w]*here a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits.*"

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 122.44(d) requires that permits include WQBELs to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Basin Plan at page IV-16.00, contains an implementation policy, "*Policy for Application of Water Quality Objectives*", that specifies that the Central Valley Water Board "*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives.*" This Policy complies with 40 CFR 122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including: (1) USEPA's published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board's "*Policy for Application of Water Quality Objectives*")(40 CFR 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at III-8.01) The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, *"…water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in*" Title 22 of the CCR. The Basin Plan further states that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCLs. The narrative tastes and odors objective states: "*Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.*"

A. Discharge Prohibitions

1. **Prohibition III.A (No discharge or application of waste other than that described in this Order).** This prohibition is based on Water Code section 13260 that requires filing of a ROWD before discharges can occur. The Discharger submitted a ROWD for the discharges described in this Order; therefore, discharges not described in this Order are prohibited.

2. **Prohibition III.B (No bypasses or overflow of untreated wastewater, except under the conditions at 40 CFR Part 122.41(m)(4)).** This Order prohibits bypass pursuant to 40 CFR 122.41(m)(4), with federal allowance for exceptions set forth in Section I.G. of Attachment D – Federal Standard Provisions. It also prohibits overflows, which concerns release of untreated and partially treated wastewater to surface waters.

3. **Prohibition III.C (No controllable condition shall create a nuisance).** This prohibition is based on Water Code section 13050, which requires water quality objectives be established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance or pollution. Prohibition III.C. also reflects general situations that, if created, justify cleanup or abatement enforcement activities and assessment of administrative civil liabilities.

4. **Prohibition III.D (No inclusion of pollutant free wastewater shall cause improper operation of the Facility's systems).** This prohibition is based on 40 CFR 122.41 et seq. that requires the proper design and operation of treatment facilities.

5. **Prohibition III.E (Discharge to South Fork Merced River is prohibited unless the ratio of river flow to wastewater discharge is 150:1 or greater).** This Order prohibits discharges to South Fork Merced River that do not receive at least 150:1 dilution. This prohibition is carried over from Order R5-2005-0155.

6. **Prohibition III.F (Discharge to South Fork Merced River is prohibited during the 6 months between 1 June and 30 November).** This Order prohibits discharges to South Fork Merced River between 1 June and 30 November. This prohibition is carried over from Order R5-2005-0155.

7. **Prohibition III.G (No discharge of waste classified as 'hazardous').** This prohibition concerns a category of waste that is subject to full containment as prescribed by Title 23 and Title 27 of the CCR and, if discharged, has high potential for creating a condition that would violate Prohibition III.C as well.

B. Technology-Based Effluent Limitations

1. Scope and Authority

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

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

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

The Federal Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. 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 Part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of BOD5, TSS, and pH.

40 CFR 403.3 defines a POTW as a treatment works that is owned by a state or municipality. Since the Facility is federally-owned, it does not meet the definition of a POTW. Consequently, the secondary treatment standards at 40 CFR Part 133 are not directly applicable to the Facility.

2. Applicable Technology-Based Effluent Limitations

a. Flow. The Facility was designed to provide a tertiary level of treatment for up to a design flow of 0.105 MGD. As discussed in Section II.A. of this Fact Sheet, the Discharger blends treated effluent and raw river water in storage tanks for irrigation of the Wawona Golf Course. Therefore, this Order limits the influent flow to the Facility under the Influent Flow Limitation Section IV.D. This Order also limits the discharge to South Fork Merced River based on the design flow of the diffuser.

Summary of Technology-based Influent Limitation

Table F-3a. Summary of Technology-based Influent Limitation

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Influent Flow	MGD	0.105	--	--	--	--

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

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

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	--	--	0.288	--	--

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. This Order contains requirements, expressed as a technology equivalence requirement, more stringent than secondary treatment requirements that are necessary to meet applicable water quality standards. The rationale for these requirements, which consist of tertiary treatment, is discussed in section IV.C.3.d.vii of this Fact Sheet.

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

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

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

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

The Basin Plan on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning…*" and with respect to disposal of wastewaters states that "*...disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*"

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

a. Receiving Water and Beneficial Uses. The Facility discharges treated wastewater to South Fork Merced River, a tributary of Merced River, a water of the United States. Beneficial uses from Table II-1 of the Basin Plan applicable to South Fork Merced River are as follows:

Table F-4. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	South Fork Merced River	Municipal and domestic supply (MUN); Agricultural supply, including irrigation (AGR); Hydropower generation (POW); Water contact recreation, including canoeing and rafting (REC-1); Non-contact water recreation (REC-2); Warm freshwater habitat (WARM); Cold freshwater habitat (COLD); and Wildlife habitat (WILD)
002	Groundwater	Municipal and domestic supply (MUN); Agricultural supply, including irrigation and stock watering (AGR); Industrial service supply (IND); and Industrial process supply (PRO)

b. Effluent and Ambient Background Data. The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on effluent and receiving water data collected as part of priority pollutant scans conducted in March 2008 and April 2010 and with SMR data collected between February 2009 and January 2012, except as noted in Section IV.C.3. Facility operations and the nature and character of the influent and effluent have not changed during the term of Order R5-2005-0155; therefore, this dataset is considered sufficient to characterize the effluent for purposes of determining reasonable potential except as otherwise noted.

c. Assimilative Capacity/Mixing Zone

i. Regulatory Guidance for Dilution Credits and Mixing Zones. The Central Valley Water Board has the discretion to accept or deny mixing zones and dilution credits. This Order includes a dilution credit of 150:1 for non-CTR human health constituents based on a South Fork Merced River harmonic mean flow of 43 MGD and a maximum daily discharge flow of 0.288 MGD. The constituents with effluent limitations in this Order that are based on human health and have dilution credits include nitrite plus nitrate (as N).

The CWA directs the 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 122.44 and 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 and the Basin Plan. Water quality criteria and objectives must be met throughout a water body except within a mixing zone. All mixing zones shall be as small as practicable and must meet specific conditions. The allowance of mixing zones by the Central Valley Water Board is discretionary and can be granted parameter-by-parameter and/or type of criterion (e.g., acute or chronic aquatic life criterion). For non-priority pollutant constituents, the allowance of mixing zones by the Central Valley Water Board is discussed in the Basin Plan, *Policy for Application of Water Quality Objectives*, which states in part, "*In conjunction with the issuance of NPDES and storm water permits, the Regional Water Board may designate mixing zones within which water quality objectives will not apply provided the discharger has demonstrated to the satisfaction of the Regional Water Board that the mixing zone will not adversely impact beneficial uses. If allowed, different mixing zones may be designated for different types of objectives, including, but not limited to, acute aquatic life objectives, chronic aquatic life objectives, human health objectives, and acute and chronic whole effluent toxicity objectives, depending in part on the averaging period over which the objectives apply. In determining the size of such mixing zones, the Regional Water Board will consider the applicable procedures and guidelines*

in the EPA's Water Quality Standards Handbook and the [TSD[1]]. *Pursuant to EPA guidelines, mixing zones designated for acute aquatic life objectives will generally be limited to a small zone of initial dilution in the immediate vicinity of the discharge.*"[2]

For priority pollutants, the SIP supersedes the Basin Plan mixing zone provisions. Section 1.4.2 of the SIP states, in part, "*With the exception of effluent limitations derived from TMDLs, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a* [Central Valley Water Board] *basin plan, the* [Central Valley Water Board] *may grant mixing zones and dilution credits to dischargers… The applicable priority pollutant criteria and objectives are to be met throughout a water body except within any mixing zone granted by* [the Central Valley Water Board]. ***The allowance of mixing zones is discretionary and shall be determined on a discharge-by-discharge basis.*** [The Central Valley Water Board] *may consider allowing mixing zones and dilution credits only for discharges with a physically identifiable point of discharge that are regulated through an NPDES permit issued by the* [Central Valley Water Board]." [emphasis added][3]

For completely-mixed discharges, the Central Valley Water Board may grant a mixing zone and apply a dilution credit for priority pollutants in accordance with Section 1.4.2.1 of the SIP. For incompletely-mixed discharges, the Discharger must complete an independent mixing zone study to demonstrate to the Central Valley Water Board that a dilution credit for priority pollutants is appropriate. In granting a mixing zone, the requirements contained in Section 1.4.2.2 of the SIP must be met.

Section 1.4.2.1 of the SIP establishes the authority for the Central Valley Water Board to consider dilution credits based on the mixing zone conditions in a receiving water. Section 1.4.2.1 in part states:

> "*The dilution credit, D, is a numerical value associated with the mixing zone that accounts for the receiving water entrained into the discharge. The dilution credit is a value used in the calculation of effluent limitations (described in section 1.4).* ***Dilution credits may be limited or denied on a pollutant-by-pollutant basis, which may result in a dilution credit for all, some, or no priority pollutants in a discharge***." (emphasis added)

---

[1] USEPA *Technical Support Document for Water Quality-based Toxics Control*, March 1991, second printing (EPA/505/2-90-001)
[2] Basin Plan, page IV-16.00
[3] SIP, pg. 15

The mixing zone is thus an administrative construct defined as an area around the outfall that may exceed water quality objectives, but is otherwise protective of the beneficial uses. Dilution is defined as the amount of mixing that has occurred at the edge of this mixing zone under critical conditions, thus protecting the beneficial uses at the concentration and for the duration and frequency required.

ii. **Dilution/Mixing Zone Study Results.** The Discharger has not determined whether complete mixing occurs or conducted a mixing zone study, as required by the SIP for priority pollutants. In the absence of this information, the worst-case dilution for priority pollutants is assumed to be zero. The impact of assuming zero assimilative capacity within the receiving water is that discharge limitations are end-of-pipe limitations with no allowance for dilution within the receiving water. Should the Discharger submit an approved dilution/mixing zone study that meets the requirements of section 1.4.2.2 of the SIP, the Central Valley Water Board may reopen this Order to include effluent limitations for priority pollutants based on an appropriate dilution factor.

The SIP is not applicable to non-priority pollutants; therefore, mixing zones and dilution credits may be considered for non-CTR constituents (i.e., nitrite plus nitrate (as N)). The Discharger provided flow data for South Fork Merced River from a local staff stream gauge for the period of 1 January 1990 through 1 April 2012. Based on flows during the discharge season (1 December through 31 May), the harmonic mean flow for the period of record is 43 MGD. Using the maximum daily discharge flow of 0.288 MGD and the receiving water harmonic mean flow, the available dilution is 150:1 for human health criteria. Since discharges are only allowed when South Fork Merced River provides 150:1 dilution, a dilution credit of 150:1 is applicable for human health criteria.

iii. **Evaluation of Available Dilution for Human Health Criteria.** Regarding the application of a mixing zone for protection of human health, the TSD at page 34 states that, "…*the presence of mixing zones should not result in significant health risks, when evaluated using reasonable assumptions about exposure pathways. Thus, where drinking water contaminants are a concern, mixing zones should not encroach on drinking water intakes*." The local drinking water intake for Wawona is located upstream of Discharge Point No. 001 and, per a search of the State Water Board's e-WRIMs database and questioning of Discharger staff, no known drinking water intakes are located along South Fork Merced River downstream of the discharge prior to confluence with the main branch of the Merced River (approximately 23 river miles).

The TSD at page 34 states that, "*If the total area affected by elevated concentrations within all mixing zones combined is small compared to the total area of a waterbody (such as a river segment), then mixing zones are likely to have little effect on the integrity of the waterbody as a whole,*

provided that they do not impinge on unique or critical habitats." The human health mixing zone does not compromise the integrity of the entire waterbody.

The human health mixing zone complies with the Basin Plan, which requires that the mixing zone not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zone, the Central Valley Water Board considered the procedures and guidelines in the USEPA's Water Quality Standards Handbook, 2nd Edition (updated July 2007), Section 5.1, and Section 2.2.2 of the TSD.

iv. Evaluation of Available Dilution for Specific Constituents (Pollutant-by-Pollutant Evaluation). The allowance of a mixing zone and dilution credits is a discretionary act by the Central Valley Water Board. The Central Valley Water Board has determined that the maximum dilution credit on a constituent-by-constituent basis needed for this discharge are as shown in the following table (also discussed further in section IV.C.3.d).

Table F-5. Dilution Credits Associated with Performance-based Effluent Limitations

Pollutant	Units	ECA[1]	Criterion	Background	Dilution Credit[2]
Nitrite plus Nitrate (as N)	mg/L	~~42~~52	10	1.1[3]	~~3.6~~4.7

1 Equivalent to the performance-based average monthly effluent limitation (AMEL).
2 The dilution credit is calculated using the steady-state mass balance equation rearranged to solve for the dilution credit, as follows:

$$D = \frac{ECA - C}{C - B}$$

3 Represents the maximum observed upstream receiving water nitrate concentration. Nitrite was not detected in the upstream receiving water with a minimum MDL of 0.05 mg/L.

The receiving water contains assimilative capacity for nitrite plus nitrate (as N) and a human health mixing zone for nitrite plus nitrate (as N) meets the mixing zone requirements of the Basin Plan. For nitrite plus nitrate (as N), the WQBEL based on a human health dilution credit of 150:1 is an AMEL of 1,433 mg/L (as N). However, the Facility can comply with an effluent limitation more stringent than with the full allowance of dilution. As shown in Table F-5, based on monitoring data collected during the term of Order R5-2005-0155, the Discharger can meet a WQBEL calculated with a human health dilution credit of ~~3.6~~4.7, which results in an AMEL of ~~42~~ 52 mg/L. The Central Valley Water Board finds that granting of the full dilution credit could allocate an unnecessarily large portion of the receiving water's assimilative capacity for nitrite plus nitrate (as N) and could violate the Antidegradation Policy. Although the Antidegradation Policy does not apply within a mixing zone, the allowance of a mixing zone allows an increase in the discharge of pollutants. Therefore, when a mixing zone and dilution credits are allowed, it is necessary to ensure the discharge complies with the Antidegradation Policy outside the mixing zone. The Antidegradation Policy requires that a discharge shall meet best practicable treatment or control (BPTC) to minimize degradation, which in this case for nitrite plus nitrate (as N) is, at a minimum, existing Facility performance. Allowing the full dilution credit would allow the

Discharger to increase its loading of nitrite plus nitrate (as N) to South Fork Merced River and reduce the treatment and control of the pollutant. Allowing the Discharger to reduce the level of treatment and/or control would not comply with the BPTC requirements of the Antidegradation Policy.

v. **Regulatory Compliance for Dilution Credits and Mixing Zones.** To fully comply with all applicable laws, regulations and policies of the State, the Central Valley Water Board approved a mixing zone and the associated dilution credit shown in Table F-5 based on the following:

- The Central Valley Water Board is allowing a mixing zone for a non-CTR human health constituent only and has determined allowing such a mixing zone will not cause acutely toxic conditions to aquatic life passing through the mixing zone.

- The Central Valley Water Board has determined the discharge will not adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under the federal or State endangered species laws, because the mixing zone is for human health criteria only, is relatively small, and acutely toxic conditions will not occur in the mixing zone. The discharge will not produce undesirable or nuisance aquatic life, result in floating debris, oil, or scum, produce objectionable odor, taste, or turbidity, cause objectionable bottom deposits, or cause nuisance, because the proposed Order establishes end-of-pipe effluent limitations (e.g., for BOD_5 and TSS) and discharge prohibitions to prevent these conditions from occurring.

- The Central Valley Water Board has determined the mixing zone complies with the Basin Plan for non-priority pollutants. The Basin Plan requires a mixing zone not adversely impact beneficial uses. Beneficial uses will not be adversely affected for the same reasons discussed above. In determining the size of the mixing zone, the Central Valley Water Board has considered the procedures and guidelines in Section 5.1 of USEPA's *Water Quality Standards Handbook*, 2nd Edition (updated July 2007) and Section 2.2.2 of the TSD.

- The Central Valley Water Board has determined that allowing dilution factors that exceed those proposed by this Order would not comply with the State Antidegradation Policy for receiving waters outside the allowable mixing zone for nitrite plus nitrate (as N). The State Water Board established California's Antidegradation Policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy and requires that existing quality of waters be maintained unless degradation is justified based on specific findings. Item 2 of Resolution No. 68-16 states:

  "*Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to*

discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained."

The effluent limitation established in this Order for nitrite plus nitrate (as N), which has been adjusted for the dilution credit provided in Table F-5, was developed based on performance of the Discharger's current wastewater treatment capabilities. Therefore, the Central Valley Water Board determined the effluent limitation required by this Order will result in the Discharger implementing best practicable treatment or control of the discharge necessary to ensure that pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained. The Central Valley Water Board also determined the Discharger will be in immediate compliance with the effluent limitation. Therefore, the Central Valley Water Board has determined the effluent limitation established in this Order for nitrite plus nitrate (as N), which has been adjusted for dilution credit provided in Table F-5, is appropriate and necessary to comply with the Basin Plan, federal antidegradation regulations, and Resolution No. 68-16.

d. **Conversion Factors.** The CTR contains aquatic life criteria for arsenic, cadmium, chromium III, chromium VI, copper, lead, nickel, silver, and zinc which are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The default USEPA conversion factors contained in Appendix 3 of the SIP were used to convert the applicable dissolved criteria to total recoverable criteria.

e. **Hardness-Dependent CTR Metals Criteria.** The *California Toxics Rule* and the *National Toxics Rule* contain water quality criteria for seven metals that vary as a function of hardness. The lower the hardness, the lower the water quality criteria. The metals with hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc.

This Order has established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP[4], the CTR[5] and State Water Board Order WQ 2008-0008 (City of Davis). The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. (SIP § 1.2;

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

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

40 CFR 131.38(c)(4)) The CTR does not define whether the term "ambient," as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions. Therefore, where reliable, representative data are available, the hardness value for calculating criteria can be the downstream receiving water hardness, after mixing with the effluent (Order WQ 2008-0008, p. 11). The Central Valley Water Board thus has considerable discretion in determining ambient hardness (*Id.*, p.10).

As discussed below, scientific literature provides a reliable method for calculating protective hardness-dependent CTR criteria, considering all discharge conditions. This methodology produces hardness-dependent CTR criteria based on the reasonable worst-case downstream ambient hardness that ensure these metals do not cause receiving water toxicity under any downstream receiving water condition. Under this methodology, the Central Valley Water Board considers all hardness conditions that could occur in the ambient downstream receiving water after the effluent has mixed with the water body. This ensures that effluent limitations are fully protective of aquatic life in all areas of the receiving water affected by the discharge under all flow conditions, at the fully mixed location, and throughout the water body including at the point of discharge into the water body.

i. Conducting the RPA. The SIP in Section 1.3 states, "*The RWQCB shall…determine whether a discharge may: (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective.*" Section 1.3 provides a step-by-step procedure for conducting the RPA. The procedure requires the comparison of the maximum effluent concentration (MEC) and maximum ambient background concentration to the applicable criterion that has been properly adjusted for hardness. Unless otherwise noted, for the hardness-dependent CTR metals criteria the following procedures were followed for properly adjusting the criterion for hardness when conducting the RPA.

(a) The SIP requires WQBELs if the MEC is equal to or exceeds the applicable criterion, adjusted for hardness. For comparing the MEC to the applicable criterion, the "fully mixed" reasonable worst-case downstream ambient hardness was used to adjust the criterion. In this evaluation the portion of the receiving water affected by the discharge is analyzed. For hardness-dependent criteria, the hardness of the effluent has an impact on the determination of the applicable criterion in areas of the receiving water affected by the discharge. Therefore, for comparing the MEC to the applicable criterion, the reasonable worst-case downstream ambient hardness was used to adjust the criterion. For this situation, it is necessary to consider the hardness of the effluent in determining the applicable hardness to adjust the criterion. The procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream ambient hardness is outlined in subsection ii, below.

(b) The SIP requires WQBELs if the receiving water is impaired upstream (outside the influence) of the discharge, i.e., if the maximum ambient background concentration of a pollutant exceeds the applicable criterion, adjusted for hardness.[6] For comparing the maximum ambient background concentration to the applicable criterion, the reasonable worst-case upstream ambient hardness was used to adjust the criteria. This is appropriate, because this area is outside the influence of the discharge. Since the discharge does not impact the upstream hardness, the effect of the effluent hardness was not included in this evaluation.

ii. Calculating WQBELs. The remaining discussion in this section relates to the development of WQBELs when it has been determined that the discharge has reasonable potential to cause or contribute to an exceedance of the CTR hardness-dependent metals criteria in the receiving water.

A 2006 Study[7] developed procedures for calculating the effluent concentration allowance (ECA)[8] for CTR hardness-dependent metals. The 2006 Study demonstrated that it is necessary to evaluate all discharge conditions (e.g., high and low flow conditions) and the hardness and metals concentrations of the effluent and receiving water when determining the appropriate ECA for these hardness-dependent metals. This method is superior to relying on downstream receiving water samples alone because it captures all possible mixed conditions in the receiving water. Both receiving water and effluent hardness vary based on flow and other factors, but the variability of receiving water and effluent hardness is sometimes independent. Using a calculated hardness value ensures that the Central Valley Water Board considers all possible mixed downstream values that may result from these two independent variables. Relying on receiving water sampling alone is less likely to capture all possible mixed downstream conditions.

The equation describing the total recoverable regulatory criterion, as established in the CTR[9], is as follows:

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

Where:

H = hardness (as $CaCO_3$)[10]
WER = water-effect ratio
m, b = metal- and criterion-specific constants

[6] The pollutant must also be detected in the effluent.
[7] Emerick, R.W.; Borroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations. WEFTEC, Chicago, Ill.
[8] The ECA is defined in Appendix 1 of the SIP (page Appendix 1-2). The ECA is used to calculate WQBELs in accordance with Section 1.4 of the SIP.
[9] 40 CFR 131.38(b)(2)
[10] For this discussion, all hardness values are in mg/L as $CaCO_3$.

In accordance with the CTR, the default value for the WER is 1. A WER study must be conducted to use a value other than 1. The constants "m" and "b" are specific to both the metal under consideration, and the type of total recoverable criterion (i.e., acute or chronic). The metal-specific values for these constants are provided in the CTR at paragraph (b)(2), Table 1.

The equation for the ECA is defined in Section 1.4, Step 2, of the SIP and is as follows:

$$ECA = C \text{ (when } C \leq B\text{)}^{11} \qquad \text{(Equation 2)}$$

Where:

C = the priority pollutant criterion/objective, adjusted for hardness (see Equation 1, above)
B = the ambient background concentration

The 2006 Study demonstrated that the relationship between hardness and the calculated criteria is the same for some metals, so the same procedure for calculating the ECA may be used for these metals. The same procedure can be used for chronic cadmium, chromium III, copper, nickel, and zinc. These metals are hereinafter referred to as "Concave Down Metals". "Concave Down" refers to the shape of the curve represented by the relationship between hardness and the CTR criteria in Equation 1. Another similar procedure can be used for determining the ECA for acute cadmium, lead, and acute silver, which are referred to hereafter as "Concave Up Metals".

ECA for Chronic Cadmium, Chromium III, Copper, Nickel, and Zinc – For Concave Down Metals (i.e., chronic cadmium, chromium III, copper, nickel, and zinc) the 2006 Study demonstrates that when the effluent is in compliance with the CTR criteria and the upstream receiving water is in compliance with the CTR criteria, any mixture of the effluent and receiving water will always be in compliance with the CTR criteria.[12] The 2006 Study proves that regardless of whether the effluent hardness is lower or greater than the upstream hardness, the reasonable worst-case flow condition is the effluent dominated condition (i.e., no receiving water flow).[13] Consequently, for Concave Down Metals, the CTR criteria have been calculated using the downstream ambient hardness under this condition.

[11] The 2006 Study assumes the ambient background metals concentration is equal to the CTR criterion (i.e., C ≤ B).
[12] 2006 Study, p. 5700
[13] There are two typographical errors in the 2006 Study in the discussion of Concave Down Metals when the effluent hardness is less than the receiving water hardness. The effluent and receiving water hardness were transposed in the discussion, but the correct hardness values were used in the calculations. The typographical errors were confirmed by the author of the 2006 Study, by email dated 1 April 2011, from Dr. Robert Emerick to Mr. James Marshall, Central Valley Water Board.

The effluent hardness ranged from 39 mg/L to 51.2 mg/L, based on 12 samples collected between October 2007 and April 2010. The upstream receiving water hardness varied from 2.11 mg/L to 11 mg/L, based on 23 samples collected between March 2008 and April 2010. Under the effluent dominated condition, the reasonable worst-case downstream ambient hardness is 39 mg/L. As demonstrated in the example shown in Table F-6, below, using this hardness to calculate the ECA for all Concave Down Metals will result in WQBELs that are protective under all flow conditions, from the effluent dominated condition to high flow condition. This example for copper assumes the following conservative conditions for the upstream receiving water:

- Upstream receiving water always at the lowest observed upstream receiving water hardness (i.e., 2.11 mg/L)
- Upstream receiving water copper concentration always at the CTR criteria (i.e., no assimilative capacity).

Using these reasonable worst-case receiving water conditions, a simple mass balance (as shown in Equation 3, below) accounts for all possible mixtures of effluent and receiving water under all flow conditions.

$$C_{MIX} = C_{RW} \times (1\text{-}EF) + C_{Eff} \times (EF) \qquad \text{(Equation 3)}$$

Where:

C_{MIX} = Mixed concentration (e.g., metals or hardness)
C_{RW} = Upstream receiving water concentration
C_{Eff} = Effluent concentration
EF = Effluent fraction

In this example, for copper, for any receiving water flow condition (high flow to low flow), the fully-mixed downstream ambient copper concentration is in compliance with the CTR criteria.[14]

[14] This method considers the actual lowest observed upstream hardness and actual lowest observed effluent hardness to determine the reasonable worst-case ambient downstream hardness under all possible receiving water flow conditions. Table F-6 demonstrates that the receiving water is always in compliance with the CTR criteria at the fully-mixed location in the receiving water. It also demonstrates that the receiving water is in compliance with the CTR criteria for all mixtures from the point of discharge to the fully-mixed location. Therefore, a mixing zone is not used for compliance.

Table F-6. Copper ECA Evaluation

Lowest Observed Effluent Hardness					**39 mg/L**
Lowest Observed Upstream Receiving Water Hardness					**2.11 mg/L**
Highest Assumed Upstream Receiving Water Copper Concentration					**0.35 µg/L[1]**
Copper $ECA_{chronic}$[2]					**4.2 µg/L**
Effluent Fraction[6]		**Fully Mixed Downstream Ambient Concentration**			
		Hardness[3] (mg/L)	**CTR Criteria[4] (µg/L)**	**Copper[5] (µg/L)**	**Complies with CTR Criteria?**
High Flow	1%	2.5	0.40	0.39	**Yes**
	5%	4.0	0.60	0.54	**Yes**
	15%	7.6	1.0	0.93	**Yes**
	25%	11	1.4	1.3	**Yes**
	50%	21	2.5	2.3	**Yes**
	75%	30	3.3	3.2	**Yes**
Low Flow	100%	39	4.2	4.2	**Yes**

1 Highest assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 2.11 mg/L.
2 ECA calculated using Equation 1 for chronic criterion at a hardness of 39 mg/L.
3 Fully mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction using Equation 3.
4 Fully mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.
5 Fully mixed downstream ambient copper concentration is the mixture of the receiving water and effluent copper concentrations at the applicable effluent fraction using Equation 3.
6 The effluent fraction ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

ECA for Acute Cadmium, Lead, and Acute Silver – For Concave Up Metals (i.e., acute cadmium, lead, and acute silver), the relationship between hardness and the metals criteria is different than for Concave Down Metals. The 2006 Study demonstrates that for Concave Up Metals, the effluent and upstream receiving water can be in compliance with the CTR criteria, but the resulting mixture may contain metals concentrations that exceed the CTR criteria and could cause toxicity. For these metals, the 2006 Study provides a mathematical approach to calculate the ECA that is protective of aquatic life, in all areas of the receiving water affected by the discharge, under all discharge and receiving water flow conditions (see Equation 4, below).

The ECA, as calculated using Equation 4, is based on the reasonable worst-case upstream receiving water hardness, the lowest observed effluent hardness, and assuming no receiving water assimilative capacity for metals (i.e., ambient background metals concentrations are at their respective CTR criterion). Equation 4 is not used in place of the CTR equation (Equation 1). Rather, Equation 4, which is derived using the CTR equation, is used as a direct approach for calculating the ECA. This replaces an iterative approach for calculating the ECA. The CTR equation has been used to evaluate the receiving water downstream of the discharge at all discharge and flow conditions to ensure the ECA is protective (e.g., see Table F-7).

$$ECA = \left(\frac{m(H_e - H_{rw})\left(e^{m\{\ln(H_{rw})\}+b}\right)}{H_{rw}} \right) + e^{m\{\ln(H_{rw})\}+b} \qquad \text{(Equation 4)}$$

Where:

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

An example similar to the Concave Down Metals is shown for lead, a Concave Up Metal, in Table F-7, below. As previously mentioned, the lowest effluent hardness is 39 mg/L, while the upstream receiving water hardness ranged from 2.11 mg/L to 11 mg/L. In this case, the reasonable worst-case upstream receiving water hardness to use in Equation 4 to calculate the ECA is 2.11 mg/L.

Table F-7. Lead ECA Evaluation

Lowest Observed Effluent Hardness					**39 mg/L**
Reasonable Worst-case Upstream Receiving Water Hardness					**2.11 mg/L**
Reasonable Worst-case Upstream Receiving Water Lead Concentration					**0.023 µg/L[1]**
Lead $ECA_{chronic}$[2]					**0.54 µg/L**
Effluent Fraction[6]		**Fully Mixed Downstream Ambient Concentration**			
		Hardness[3] (mg/L)	**CTR Criteria[4] (µg/L)**	**Lead[5] (µg/L)**	**Complies with CTR Criteria?**
High Flow	1%	2.5	0.029	0.028	**Yes**
	5%	4.0	0.053	0.049	**Yes**
	15%	7.6	0.12	0.10	**Yes**
	25%	11	0.19	0.15	**Yes**
	50%	21	0.44	0.28	**Yes**
	75%	30	0.69	0.41	**Yes**
Low Flow	100%	39	0.96	0.54	**Yes**

1 Reasonable worst-case upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 2.11 mg/L.
2 ECA calculated using Equation 4 for chronic criterion.
3 Fully mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.
4 Fully mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.
5 Fully mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction.
6 The effluent fraction ranges from 1% at the high receiving water flow condition, to 100% at the lowest receiving water flow condition (i.e., effluent dominated).

Based on the procedures discussed above, Table F-8 lists all the CTR hardness-dependent metals and the associated ECAs used in this Order.

Table F-8. Summary of ECA Evaluations for CTR Hardness-dependent Metals

CTR Metals	ECA (µg/L, total recoverable)	
	Acute	Chronic
Copper	5.8	4.2
Chromium III	800	96
Cadmium	1.2	1.2
Lead	14	0.54
Nickel	210	24
Silver	0.17	--
Zinc	54	54

3. Determining the Need for WQBELs

a. The RPA procedures from section 1.3 of the SIP were used in this Order to evaluate reasonable potential for CTR/NTR constituents based on information submitted as part of the Report of Waste Discharge, in studies, and as directed by monitoring and reporting programs. Non-CTR constituents were evaluated on an individual basis. Estimated concentrations (J-flags) are not quantifiable but do confirm the presence of a substance below the analytical method's minimum level. Section 1.3, Step 8 of the SIP allows the Central Valley Water Board to require additional monitoring for a pollutant in place of an effluent limitation if data are unavailable or insufficient. Additionally, Section 2.4 of the SIP allows the Central Valley Water Board to require in the permit that the Discharger shall report the Reporting Level (RL) selected from the MLs listed in Appendix 4 of the SIP.

b. Constituents with No Reasonable Potential. WQBELs are not included in this Order for constituents that do not demonstrate reasonable potential (i.e., constituents were not detected in the effluent or receiving water); however, monitoring for pollutants is established in this Order as required by the SIP for CTR constituents. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding an appropriate effluent limitation.

Most constituents with no reasonable potential are not discussed in this Order. However, the following constituents were found to have no reasonable potential after assessment of the data:

i. Settleable Solids

(a) WQO. For inland surface waters, the Basin Plan states that "[w]*aters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.*" Order R5-2005-0155 established an AMEL of 0.1 mL/L and a maximum daily effluent limitation (MDEL) of 0.1 mL/L for settleable solids to implement the narrative settleable solids objective.

(b) RPA Results. Settleable solids were not detected in the effluent based on 882 samples collected between February 2009 and January 2012.

Because settleable solids were not detected above existing effluent limitations and because the Discharger provides tertiary treatment, the discharge from the Facility does not have reasonable potential to cause or contribute to an excursion above the Basin Plan's narrative objective for settleable solids and the effluent limitations for settleable solids have not been retained in this Order. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

ii. Salinity

(a) WQO. The Basin Plan contains a chemical constituents objective that incorporates state MCLs, contains a narrative objective, and contains numeric water quality objectives for certain specified water bodies for electrical conductivity, total dissolved solids, sulfate, and chloride. The USEPA National Recommended Ambient Water Quality Criteria (NAWQC) for chloride recommends acute and chronic criteria for the protection of aquatic life. There are no USEPA water quality criteria for the protection of aquatic life for electrical conductivity, total dissolved solids, and sulfate. Additionally, there are no USEPA numeric water quality criteria for the protection of agricultural, livestock, and industrial uses. Numeric values for the protection of these uses are typically based on site specific conditions and evaluations to determine the appropriate constituent threshold necessary to interpret the narrative chemical constituent Basin Plan objective. The Central Valley Water Board must determine the applicable numeric limit to implement the narrative objective for the protection of agricultural supply. The Central Valley Water Board is currently implementing the CV-SALTS initiative to develop a Basin Plan amendment that will establish a salt and nitrate management plan for the Central Valley. Through this effort, the Basin Plan will be amended to define how the narrative water quality objective is to be interpreted for the protection of agricultural use. All salinity studies conducted through this Order will be reviewed by CV-SALTS to ensure consistency with the efforts currently underway by CV-SALTS.

Table F-9. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Objective[1]	Secondary MCL[2]	USEPA NAWQC	Effluent	
				Average	Maximum
Electrical Conductivity (µmhos/cm)	Varies	900, 1600, 2200	N/A	738	982
Total Dissolved Solids (mg/L)	Varies	500, 1000, 1500	N/A	428	510
Sulfate (mg/L)	Varies	250, 500, 600	N/A	15	23
Chloride (mg/L)	Varies	250, 500, 600	860 1-hr 230 4-day	76	100

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

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

(1) Chloride. The Secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. USEPA developed National Recommended Ambient Water Quality Criteria for protection of freshwater aquatic life for chloride. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for chloride are 230 mg/L and 860 mg/L, respectively.

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

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

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

(b) RPA Results

(1) Chloride. Chloride concentrations in the effluent ranged from 58 mg/L to 100 mg/L, with an average of 76 mg/L, based on four samples collected between March 2008 and April 2010. These levels do not exceed the Secondary MCL or the USEPA recommended criteria. Background concentrations in South Fork Merced River ranged from 1.6 mg/L to 4 mg/L, with an average of 2.2 mg/L, for seven samples collected by the Discharger from August 2007 through October 2011.

(2) Electrical Conductivity. A review of the Discharger's monitoring reports shows an average effluent electrical conductivity of 739 µmhos/cm, with a range from 397 µmhos/cm to 982 µmhos/cm based on 112 samples collected between February 2009 and January 2012. The highest calendar year average was 826 µmhos/cm, which does not exceed the Secondary MCL. The background receiving water electrical conductivity averaged 35 µmhos/cm based on seven samples collected between August 2007 and October 2011.

(3) Sulfate. Sulfate concentrations in the effluent ranged from 9.3 mg/L to 23 mg/L, with an average of 15 mg/L based on four samples collected between March 2008 and April 2010. These levels do not exceed the Secondary MCL. Background concentrations in South Fork Merced River ranged from 1.8 mg/L to 2 mg/L, with an average of 1.9 mg/L based on seven samples collected between August 2007 and October 2011.

(4) Total Dissolved Solids. The average total dissolved solids effluent concentration was 428 mg/L with concentrations ranging from 370 mg/L to 510 mg/L based on four samples collected between March 2008 and April 2010. The highest calendar year average was 455 mg/L, which does not exceed the Secondary MCL. The background receiving water total dissolved solids ranged from 5.5 mg/L to 61 mg/L, with an average of 30 mg/L based on seven samples collected between August 2007 and October 2011.

The discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, the Central Valley Water Board is concerned with the elevated salinity levels in the effluent given the very low levels in the water supply. The primary water supply for the Discharger's service area is South Fork Merced River, which has a maximum electrical conductivity of 46 µmhos/cm and an average of 35 µmhos/cm. Source water data provided by the Discharger between 2005 and 2009 for electrical conductivity ranged from 43.71 µmhos/cm to 68.8 µmhos/cm with an average of 54 µmhos/cm. Total dissolved solids in the water supply ranged from 31 mg/L to 49 mg/L with an average of 39 mg/L. Influent salinity data are not available, but the Discharger believes that sewer users with private groundwater wells may potentially increase the salinity of the influent wastewater; however, the Discharger is not aware of groundwater quality in the area or the percentage of sewer users with groundwater wells. Previous Orders indicate the groundwater in the vicinity of the golf course area is approximately 20 µmhos/cm. Chemicals used in the treatment system include alum (manual feed), soda ash (flow-paced), and chlorine (flow-paced), which may contribute to the elevated salinity concentrations. Due to the elevated salinity levels in the effluent compared to the water supply, this Order requires the Discharger to prepare and implement a Salinity Evaluation and Minimization Plan.

c. Constituents with Insufficient Data. Reasonable potential cannot be determined for the following constituent because effluent data are insufficient or ambient background concentrations are not available. The Discharger is required to continue to monitor for this constituent in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further analysis will be conducted to determine whether to add numeric effluent limitations or to continue monitoring.

i. Aluminum

Aluminum is the third most abundant element in the earth's crust and is ubiquitous in both soils and aquatic sediments. When mobilized in surface waters, aluminum has been shown to be toxic to various fish species. However, the potential for aluminum toxicity in surface waters is directly related to the chemical form of aluminum present, and the chemical form is highly dependent on water quality characteristics that ultimately determine the

mechanism of aluminum toxicity. Surface water characteristics, including pH, temperature, colloidal material, fluoride and sulfate concentrations, and total organic carbon, all influence aluminum speciation and its subsequent bioavailability to aquatic life. Calcium [hardness] concentrations in surface water may also reduce aluminum toxicity by competing with monomeric aluminum (Al^{3+}) binding to negatively charged fish gills.

(a) WQO. The Code of Federal Regulations promulgated criteria for priority toxic pollutants for California's surface waters as part of section 131.38 *Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (California Toxics Rule or CTR), including metals criteria. However, aluminum criteria were not promulgated as part of the CTR. Absent numeric aquatic life criteria for aluminum, WQBELs in the Central Valley Region's NPDES permits are based on the Basin Plan's narrative toxicity objective. The Basin Plan's *Policy for Application of Water Quality Objectives* requires the Central Valley Water Board to consider, "*on a case-by-case basis, direct evidence of beneficial use impacts, all material and relevant information submitted by the discharger and other interested parties, and relevant numerical criteria and guidelines developed and/or published by other agencies and organizations… In considering such criteria, the Board evaluates whether the specific numerical criteria, which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective*." Relevant information includes, but is not limited to (1) USEPA National Recommended Ambient Water Quality Criteria (NAWQC) and subsequent Correction, (2) site-specific conditions of South Fork Merced River, the receiving water, and (3) site-specific aluminum studies conducted by dischargers within the Central Valley Region. (Basin Plan, p. IV-17.00; see also, 40 CFR 122.44(d)(vi).)

USEPA NAWQC. USEPA recommended the NAWQC aluminum acute criterion at 750 µg/L based on test waters with a pH of 6.5 to 9.0. USEPA also recommended in the NAWQC an aluminum chronic criterion at 87 µg/L based upon the following two toxicity tests. All test waters contained hardness at 12 mg/L as $CaCO_3$.

(1) Acute toxicity tests at various aluminum doses were conducted in various acidic waters (pH 6.0 – 6.5) on 159- and 160-day old striped bass. The 159-day old striped bass showed no mortality in waters with pH at 6.5 and aluminum doses at 390 µg/L, and the 160-day old striped bass showed 58% mortality at a dose of 174.4 µg/L in same pH waters. However, the 160-day old striped bass showed 98% mortality at aluminum dose of 87.2 µg/L in waters with pH at 6.0, which is USEPA's basis for the 87 µg/L chronic criterion. The varied results draw into question this study and the applicability of the NAWQC chronic criterion of 87 µg/L.

(2) Chronic toxicity effects on 60-day old brook trout were evaluated in circumneutral pH waters (6.5-6.9 pH) in five cells at various aluminum doses (4, 57, 88, 169, and 350 µg/L). Chronic evaluation started upon hatching of eyed eggs of brook trout, and their weight and length were measured after 45 days and 60 days. The 60-day old brook trout showed 24% weight loss at 169 µg/L of aluminum and 4% weight loss at 88 µg/L of aluminum, which is the basis for USEPA's chronic criteria. Though this test study shows chronic toxic effects of 4% reduction in weight after exposure for 60-days, the chronic criterion is based on 4-day exposure; so again, the applicability of the NAWQC chronic criterion of 87 µg/L is questionable.

Site-specific Conditions. Effluent and receiving water monitoring data indicate that the pH and hardness values are not similar to the low pH and hardness conditions under which the chronic criterion for aluminum was developed, as shown in the table below, and therefore, the Central Valley Water Board does not expect aluminum to be as reactive in South Fork Merced River as in the previously described toxicity tests. The pH of South Fork Merced River, the receiving water, ranged from 6.78 to 7.65 with an average of 7.0 based on 40 monitoring results obtained between March and December 2007. These water conditions are circumneutral pH where aluminum is predominately in the form of $Al(OH)_3$ and non-toxic to aquatic life. The hardness of South Fork Merced River ranged from 2.11 mg/L to 11 mg/L based on 23 samples. South Fork Merced River is listed as a Wild Trout Water by the California Department of Fish and Wildlife (CDFW) and supports several trout species, including brook trout.

Parameter	Units	Test Conditions for Applicability of Chronic Criterion	Effluent	South Fork Merced River
pH	standard units	6.0 – 6.5	6.6 – 8.0	6.78 – 7.65
Hardness, Total (as $CaCO_3$)	mg/L	12	39 - 51.2	2.11 – 11

Local Environmental Conditions and Studies. Twenty-one site-specific aluminum toxicity tests have been conducted within the Central Valley Region. As shown in the following table, all EC_{50} toxicity study result values are at concentrations of aluminum above 5,000 µg/L. Thus, the toxic effects of aluminum in surface waters within the Central Valley Region, including South Fork Merced River, is less toxic (or less reactive) to aquatic species than demonstrated in the toxicity tests that USEPA used for the basis of establishing the chronic criterion of 87 µg/L.

Central Valley Region Site-Specific Toxicity Data

Discharger (City)	Species	Test Waters	Hardness Value	Total Aluminum EC_{50} Value	pH	WER
Auburn	*Ceriodaphnia dubia*	Effluent	99	>5270	7.44	>19.3
	" "	Surface Water	16	>5160	7.44	>12.4
Manteca	" "	Surface Water/Effluent	124	>8800	9.14	N/C
	" "	Effluent	117	>8700	7.21	>27.8
	" "	Surface Water	57	7823	7.58	25.0
	" "	Effluent	139	>9500	7.97	>21.2
	" "	Surface Water	104	>11000	8.28	>24.5
	" "	Effluent	128	>9700	7.78	>25.0
	" "	Surface Water	85	>9450	7.85	>25.7
	" "	Effluent	106	>11900	7.66	>15.3
	" "	Surface Water	146	>10650	7.81	>13.7
Modesto	" "	Surface Water/Effluent	120/156	31604	8.96	211
Yuba City	" "	Surface Water/Effluent	114/164[1]	>8000	7.60/7.46	>53.5
Placer County	" "	Effluent	150	>5000	7.4 – 8.7	>13.7
Manteca	*Daphnia magna*	Surface Water/Effluent	124	>8350	9.14	N/C
Modesto	" "	Surface Water/Effluent	120/156	>11900	8.96	>79.6
Yuba City	" "	Surface Water/Effluent	114/164[1]	>8000	7.60/7.46	>53.5
Manteca	*Oncorhynchus mykiss* (rainbow trout)	Surface Water/Effluent	124	>8600	9.14	N/C
Auburn	" "	Surface Water	16	>16500	7.44	N/C
Modesto	" "	Surface Water/Effluent	120/156	>34250	8.96	>229
Yuba City	" "	Surface Water/Effluent	114/164[1]	>8000	7.60/7.46	>53.5

[1] Hardness values may be biased high because the EDTA titrimetric method is subject to interferences that measure as hardness (barium, cadmium, lead, manganese, strontium, and zinc will be measured as hardness) producing hardness numbers that are likely to be greater than the calculation of hardness based upon the ICP analysis of calcium and magnesium. Upstream receiving water hardness ranged from 30 to 50.9 mg/L as $CaCO_3$ between January 2008 and August 2011. Furthermore, the upstream receiving water hardness was 37 mg/L as $CaCO_3$ on 4 October 2005, 7 days prior to the Feasibility Assessment (first phase of a Water Effects Ratio study) sample collection date of 11 October 2005. It is likely that matrix interferences from other metals were responsible for the unexpected hardness values reported by Pacific EcoRisk.

The Discharger has not conducted a toxicity test for aluminum; however, the City of Auburn conducted two toxicity tests in Auburn Ravine, shown highlighted in the previous table. As shown, the test water quality characteristics of Auburn Ravine are similar to South Fork Merced River, with the pH at 7.4 and hardness at 16 mg/L as $CaCO_3$ in comparison to the mean pH at 7.0 and the minimum hardness at 2.11 mg/L (mean hardness at 5.7 mg/L) as $CaCO_3$, respectively. Thus, based on these two similar primary water quality characteristics (pH and hardness) that drive aluminum speciation, the aluminum toxicity within Auburn Ravine is expected to be similar in South Fork Merced River. Therefore, the Auburn Ravine aluminum toxicity test study is relevant and appropriate in this case for use in determining the specific numerical criteria to be used in determining compliance with the Basin Plan's narrative toxicity objective. The Auburn Ravine aluminum toxicity study resulted in a site-specific aluminum objective at 1,079 µg/L. This new information, and review of the

toxicity tests USEPA used to establish the chronic criterion, indicates that 87 µg/L is overly stringent and not applicable to South Fork Merced River.

State of California Department of Public Health (DPH) has established Secondary MCLs to assist public drinking water systems in managing their drinking water for aesthetic conditions such as taste, color, and odor. The Secondary MCL for aluminum is 200 µg/L.

(b) RPA Results. Secondary MCLs are drinking water standards contained in Title 22 of the California Code of Regulations. Title 22 requires compliance with these standards on an annual average basis, when sampling at least quarterly. Aluminum is not a priority pollutant and the RPA procedures in section 1.3 of the SIP are not required. To be consistent with how compliance with the standards is determined, the RPA for aluminum is based on calendar annual average effluent aluminum concentrations.

The Discharger sampled the effluent for total and dissolved aluminum once on 27 March 2008, which were detected at concentrations of 240 µg/L (MDL 0.5 µg/L, RL 4 µg/L) and 30 µg/L (MDL 5.9 µg/L, RL 50 µg/L), respectively. Although the effluent sample for total aluminum of 240 µg/L exceeds the Secondary MCL of 200 µg/L, it is uncertain if the effluent exhibits reasonable potential to cause or contribute to an exceedance of the Secondary MCL on an annual average basis with only one data point.

Furthermore, aluminum was detected in the method blank for the 27 March 2008 effluent sample, which indicates possible sample contamination. The Central Valley Board has determined that the 27 March 2008 sample is inappropriate and insufficient to be used in the RPA. This Order requires the Discharger to conduct aluminum monitoring for two years. Should monitoring results indicate that the discharge has the reasonable potential to cause or contribute to an exceedance of a water quality standard, this Order may be reopened and modified by adding an appropriate effluent limitation.

d. Constituents with Reasonable Potential. The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for ammonia (as N), BOD_5, chlorine residual, copper, dichlorobromomethane, nitrite plus nitrate (as N), total coliform, pH, TSS, BOD_5 and TSS percent removal, and zinc. WQBELs for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

i. Ammonia

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

The maximum permitted effluent pH is 8.5, as the Basin Plan objective for pH in the receiving stream is the range of 6.5 to 8.5. In order to protect against the worst-case short-term exposure of an organism, a pH value of 8.5 was used to derive the acute criterion. The resulting acute criterion is 2.14 mg/L.

A chronic criterion was calculated for each day when paired temperature and pH were measured using effluent data for temperature and pH recorded during the discharge season (1 December through 31 May) from the Discharger's monthly monitoring reports between February 2009 and January 2012. Rolling 30-day average criteria were calculated using the criteria calculated for each day and the minimum observed 30-day average criterion was established as the applicable 30-day average chronic criterion, or 30-day CCC. The resulting 30-day CCC is 3.69 mg/L (as N). The 4-day average concentration is derived in accordance with the USEPA criterion as 2.5 times the 30-day CCC. Based on the 30-day CCC of 3.69 mg/L (as N), the 4-day average concentration that should not be exceeded is 9.23 mg/L (as N).

(b) RPA Results. The Facility is a domestic wastewater treatment plant that treats domestic wastewater. Untreated domestic wastewater contains ammonia in concentrations that, without treatment, would be harmful to aquatic life and would violate the Basin Plan's narrative toxicity objective if discharged to the receiving water. Reasonable potential, therefore, exists and WQBELs are required.

Federal regulations at 40 CFR 122.44(d)(1)(i) require that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or*

may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." For priority pollutants, the SIP dictates the procedures for conducting the RPA. Ammonia is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" USEPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" With regard to POTWs, USEPA recommends that, "*POTWs should also be characterized for the possibility of chlorine and ammonia problems.*" (TSD, p. 50)

Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger currently uses nitrification to remove ammonia from the waste stream. Inadequate or incomplete nitrification may result in the discharge of ammonia to the receiving stream. Ammonia is known to cause toxicity to aquatic organisms in surface waters. Discharges of ammonia in concentrations that produce detrimental physiological responses to human, plant, animal, or aquatic life would violate the Basin Plan narrative toxicity objective. Although the Discharger nitrifies the discharge, inadequate or incomplete nitrification creates the potential for ammonia to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for ammonia and WQBELs are required.

(c) WQBELs. The Central Valley Water Board calculated ammonia WQBELs consistent with SIP procedures; however, the Central Valley Water Board is not obligated to use the SIP procedures for non-CTR constituents. The SIP procedure assumes a 4-day averaging period for calculating the long-term average discharge condition (LTA). However, USEPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day CCC. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day CCC was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 4-day CCC, and 30-day CCC is then selected for deriving the AMEL and the MDEL. The remainder of the WQBELs calculation for ammonia was performed according to the SIP procedures. This Order contains a final AMEL and MDEL for ammonia of 1.1 µg/L and 2.1 µg/L, respectively, based on the NAWQC (acute criterion).

(d) Plant Performance and Attainability. Analysis of the effluent data indicates that the MEC of 0.1 mg/L does not exceed the applicable WQBELs. The Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

ii. Chlorine

(a) WQO. USEPA developed NAWQC for protection of freshwater aquatic life for chlorine residual. The recommended 4-day average (chronic) and 1-hour average (acute) criteria for chlorine residual are 0.011 mg/L and 0.019 mg/L, respectively. These criteria are protective of the Basin Plan's narrative toxicity objective.

(b) RPA Results. The concentrations of chlorine used to disinfect wastewater are high enough to harm aquatic life and violate the Basin Plan's narrative toxicity objective if discharged to the receiving water. Reasonable potential, therefore, exists and WQBELs are required.

Federal regulations at 40 CFR 122.44(d)(1)(i) require that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. Chlorine is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used its judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" USEPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" With regard to POTWs, USEPA recommends that, "*POTWs should also be characterized for the possibility of chlorine and ammonia problems.*" (TSD, p. 50)

The Discharger uses chlorine for disinfection, which is extremely toxic to aquatic organisms. Although the Discharger uses a sulfur dioxide process to dechlorinate the effluent prior to discharge to South Fork Merced River, the existing chlorine use and the potential for chlorine to be discharged provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

(c) WQBELs. The TSD contains statistical methods for converting chronic (4-day) and acute (1-hour) aquatic life criteria to average monthly and maximum daily effluent limitations based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an acutely toxic constituent, an average 1-hour limitation is considered more appropriate than a maximum daily effluent limitation. This Order contains a 4-day average effluent limitation and 1-hour average effluent limitation for chlorine residual of 0.011 mg/L and 0.019 mg/L, respectively, based on USEPA's NAWQC, which implements the Basin Plan's narrative toxicity objective for protection of aquatic life.

(d) Plant Performance and Attainability. Prior to discharging to South Fork Merced River, the Discharger dechlorinates the treated effluent using sulfur dioxide. The Central Valley Water Board concludes, therefore, that compliance with chlorine residual effluent limitations is feasible.

iii. Copper

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for copper. These criteria for copper are presented in dissolved concentrations. USEPA recommends conversion factors to

translate dissolved concentrations to total concentrations. Default USEPA translators were used in this Order.

(b) RPA Results. Section IV.C.2.e of this Fact Sheet presents procedures for conducting the RPA for copper. Based on the lowest observed upstream receiving water hardness of 2.11 mg/L (as $CaCO_3$), the applicable total recoverable criteria for evaluating the ambient background concentration are 0.37 µg/L and 0.35 µg/L for the acute and chronic criteria, respectively. The maximum observed upstream receiving water copper concentration was 0.31 µg/L (minimum MDL 0.094 µg/L, minimum RL 0.1 µg/L) based on 45 samples collected between August 2007 and October 2011. Based on this data, the maximum ambient background copper concentration does not exceed the applicable CTR criteria.

As discussed in Section IV.C.2.e for comparing the MEC to the criteria, the reasonable worst-case downstream ambient hardness should be used. Based on a hardness of 39 mg/L (as $CaCO_3$), the applicable total recoverable criteria are 5.8 µg/L and 4.2 µg/L for the acute and chronic criteria, respectively. The MEC for copper (total recoverable) was 11 µg/L (minimum RL 0.1 µg/L), based on 26 samples collected by the Discharger between February 2009 and January 2012. Therefore, copper in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of aquatic life.

(c) WQBELs. This Order contains a final AMEL and MDEL for copper of 3.9 µg/L and 5.3 µg/L, respectively, based on the CTR criterion for the protection of aquatic life.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 11 µg/L is greater than applicable WQBELs; however, the Discharger has indicated that a compliance schedule for copper is not needed at this time.

iv. Dichlorobromomethane

(a) WQO. The CTR contains a criterion of 0.56 µg/L for dichlorobromomethane for the protection of human health for waters from which both water and organisms are consumed.

(b) RPA Results. The MEC for dichlorobromomethane was 7.1 µg/L based on four samples collected between January 2005 and April 2010 (minimum MDL 0.14 µg/L, minimum RL 0.5 µg/L). Dichlorobromomethane was not detected in the upstream receiving water based on three samples collected between March 2008 and September 2010 (minimum MDL 0.14 µg/L, minimum RL 0.5 µg/L). Therefore, dichlorobromomethane in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

(c) WQBELs. This Order contains a final AMEL and MDEL for dichlorobromomethane of 0.56 µg/L and 1.1 µg/L, respectively, based on the CTR criterion for the protection of human health.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 7.1 µg/L is greater than the applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for dichlorobromomethane are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, a compliance time schedule for compliance with the dichlorobromomethane effluent limitations is established in Time Schedule Order R5-2013-**XXXX** in accordance with Water Code section 13300, which requires preparation and implementation of a pollution prevention plan in compliance with Water Code section 13263.3.

v. Nitrate and Nitrite

(a) WQO. DPH has adopted Primary MCLs for the protection of human health for nitrite (as N) and nitrate (as NO_3) that are equal to 1 mg/L and 45 mg/L, respectively. DPH has also adopted a primary MCL of 10 mg/L for the sum of nitrate and nitrite, measured as nitrogen.

USEPA has developed a primary MCL and an MCL goal of 1 mg/L for nitrite (as nitrogen). For nitrate, USEPA has developed Drinking Water Standards (10 mg/L as Primary MCL) and NAWQC for protection of human health (10 mg/L for non-cancer health effects). Recent toxicity studies have indicated a possibility that nitrate is toxic to aquatic organisms.

(b) RPA Results. The Facility is a domestic wastewater treatment plant that treats domestic wastewater. Untreated domestic wastewater contains ammonia and this Order requires removal of ammonia (i.e., nitrification). Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Nitrate concentrations in a drinking water supply above the primary MCL threatens the health of human fetuses and newborn babies by reducing the oxygen-carrying capacity of the blood (methemoglobinemia). Reasonable potential therefore exists and WQBELs are required.

Federal regulations at 40 CFR 122.44(d)(1)(i) require that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable*

potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." For priority pollutants, the SIP dictates the procedures for conducting the RPA. Nitrate and nitrite are not priority pollutants. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for these non-priority pollutant constituents.

USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" USEPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" With regard to POTWs, USEPA recommends that, "*POTWs should also be characterized for the possibility of chlorine and ammonia problems.*" (TSD, p. 50)

The concentration of nitrogen in raw domestic wastewater is sufficiently high that the resultant treated wastewater has a reasonable potential to exceed or threaten to exceed the primary MCL for nitrate plus nitrite unless the wastewater is treated for nitrogen removal, and therefore an effluent limit for nitrate plus nitrite is required. Untreated domestic wastewater contains ammonia and this Order requires removal of ammonia (i.e., nitrification). Nitrification is a biological process that converts ammonia to nitrite and nitrite to nitrate. Denitrification is a process that converts nitrate to nitrite or nitric oxide and then to nitrous oxide or nitrogen gas, which is then released to the atmosphere. The Discharger currently uses nitrification to remove ammonia from the waste stream, but does not provide denitrification. Inadequate or incomplete denitrification may result in the discharge of nitrate and/or nitrite to the receiving stream. Discharges of nitrite plus nitrate in concentrations that exceed the primary MCL would violate the Basin Plan narrative chemical constituents objective. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for nitrite plus nitrate (as N) and WQBELs are required.

(c) WQBELs. As described further in section IV.C.2.c of this Fact Sheet, assimilative capacity is available and a dilution credit of 150 is appropriate for calculating effluent limitations for nitrite plus nitrate. Following the procedures established by the SIP for calculating WQBELs and applying a dilution credit of 150 to the Primary MCL, the resulting AMEL for nitrite plus nitrate (as N) is 1,433 mg/L. However, effluent limitations may only be as high as is justified under State and federal antidegradation policies. Therefore, this Order establishes a performance-based effluent limitation for nitrite plus nitrate (as N). In developing the performance-based AMEL, where there are 10 sampling data points or more, sampling and laboratory variability is accounted for by establishing limitations that are based on normally distributed data where ~~95~~99.9% of the data points will lie within ~~2.0~~3.3 standard deviations of the mean (*Basic Statistical Methods for Engineers and Scientists*, Kennedy and Neville, Harper and Row). The resulting performance-based AMEL is ~~42~~ 52 µg/L, which corresponds to a dilution credit of ~~3.6~~4.7:1.

(d) Plant Performance and Attainability. The effluent limitation for nitrite plus nitrate (as N) is based on the performance of the Facility. The Central Valley Water Board concludes, therefore, that immediate compliance with this effluent limitation is feasible.

vi. Pathogens

(a) WQO. DPH has developed reclamation criteria at Title 22, CCR, Division 4, Chapter 3 (Title 22), for the reuse of wastewater. Title 22 requires that for spray irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, wastewater be adequately disinfected, oxidized, coagulated, clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL, at any time.

Title 22 also requires that recycled water used as a source of water supply for non-restricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A non-restricted recreational impoundment is defined as "*…an impoundment of recycled water, in which no limitations are imposed on body-contact water recreational activities.*" Title 22 is not directly applicable to surface waters; however, the Central Valley Water Board finds that it is appropriate to apply an equivalent level of treatment to the surface water discharge because the Discharger is already required to provide the same quality water for recycling on the golf course, the receiving water is used for contact recreation purposes, and South Fork Merced River is designated under the National Wild and Scenic Rivers system, as authorized by the 1968 Wild and Scenic Rivers Act, because of its outstandingly remarkable value. Coliform organisms are intended as an indicator of the

effectiveness of the entire treatment train and the effectiveness of removing other pathogens.

(b) RPA Results. Raw domestic wastewater inherently contains human pathogens that threaten human health, and constitute a threatened pollution and nuisance under Water Code section 13050 if discharged untreated to the receiving water. Reasonable potential, therefore, exists and WQBELs are required.

Federal regulations at 40 CFR 122.44(d)(1)(i) require that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. Pathogens are not priority pollutants. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" USEPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also should be considered with available effluent monitoring data.*" (TSD, p. 50)

The beneficial uses of South Fork Merced River include municipal and domestic supply, water contact recreation, and agricultural irrigation supply. To protect these beneficial uses, the Central Valley Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. Although the Discharger provides disinfection, inadequate or incomplete disinfection creates the potential for pathogens to be discharged and provides the basis for the discharge to have a reasonable potential to cause or contribute to an exceedance of the Basin

Plan's narrative toxicity objective. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for pathogens and WQBELs are required.

(c) WQBELs. Consistent with the requirements of Title 22, this Order includes effluent limitations for total coliform of 2.2 MPN/100 mL as a 7-day median; 23 MPN/100 mL, not to be exceeded more than once in a 30-day period; and 240 MPN/100 mL as an instantaneous maximum.

In addition to coliform limitations, turbidity operational specifications have been included as a second indicator of the effectiveness of the treatment process, and to ensure compliance with the required level of treatment. The tertiary treatment process, or equivalent, is capable of reliably meeting a turbidity of 2 nephelometric turbidity units (NTU). Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which results in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. Therefore, to ensure compliance with the required level of disinfection (based on Title 22 disinfection criteria), weekly average specifications are impracticable for turbidity. This Order includes operational specifications for turbidity that vary depending on whether the Discharger is using coagulation.

This Order contains effluent limitations for BOD_5, total coliform, and TSS and requires a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. The Central Valley Water Board has previously considered the factors in Water Code section 13241 in establishing these requirements.

Final WQBELs for BOD_5 and TSS are based on the technical capability of the tertiary process, which is necessary to protect the beneficial uses of the receiving water. BOD_5 is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The tertiary treatment standards for BOD_5 and TSS are indicators of the effectiveness of the tertiary treatment process. The principal design parameter for wastewater treatment plants is the daily BOD_5 and TSS loading rates and the corresponding removal rate of the system. The application of tertiary treatment processes results in the ability to achieve lower levels for BOD_5 and TSS than the secondary standards currently prescribed. Therefore, this Order requires AMELs for BOD_5 and TSS of 10 mg/L, which is technically based on the capability of a tertiary system. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD_5 and TSS is included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities. This Order also includes an average

monthly effluent limitation requiring at least 90% removal of BOD_5 and TSS compared to influent concentrations.

(d) Plant Performance and Attainability. The Facility is designed to provide tertiary treatment and chlorine disinfection to achieve compliance with the effluent limitations for BOD_5, total coliform, TSS, and BOD_5 and TSS percent removal. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

vii. pH

(a) WQO. The Basin Plan includes a water quality objective for surface waters (except for Goose Lake) that the "*…pH shall not be depressed below 6.5 nor raised above 8.5.*"

(b) RPA Results. Raw domestic wastewater inherently has variable pH that if not properly controlled would violate the Basin Plan's numeric objective for pH in the receiving water. Therefore, reasonable potential exists and WQBELs for pH are required.

Federal regulations at 40 CFR 122.44(d)(1)(i) require that, "*Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.*" For priority pollutants, the SIP dictates the procedures for conducting the RPA. pH is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA for this non-priority pollutant constituent.

USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" USEPA's TSD also recommends that factors other than effluent data should be considered in the RPA, "*When determining whether or not a discharge causes, has the reasonable potential to cause, or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants or for toxicity, the regulatory authority can use a variety of factors and information where facility-specific effluent monitoring data are unavailable. These factors also*

should be considered with available effluent monitoring data." (TSD, p. 50)

The Facility is a domestic wastewater treatment plant that treats domestic wastewater. Based on 729 samples taken from February 2009 to January 2012, the maximum pH reported was 7.98 and the minimum was 6.67. Although the Discharger has proper pH controls in place, the pH for the Facility's influent varies due to the nature of domestic sewage, which provides the basis for the discharge to have a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's numeric objective for pH in the receiving water. Therefore, WQBELs for pH are required in this Order.

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

(d) Plant Performance and Attainability. Based on 729 samples taken from February 2009 to January 2012, the effluent pH was maintained between 6.67 and 7.98. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

viii. Phosphorus

(a) WQO. There are no applicable State or USEPA criteria or MCLs for phosphorus. During the late 1980s, the Discharger conducted studies concerning potential algal growth on the main fork of the Merced River near El Portal. Evaluation of the data generated from these studies indicated that control of phosphorus from the Discharger's El Portal Wastewater Treatment Facility effluent to a level below 0.5 mg/L would accomplish sufficient nutrient removal so as not to induce algal growth in Merced River. Based on the watershed similarities of Merced River near El Portal and South Fork Merced River near the Facility, Order R5-2005-0155 established effluent limitations of 0.5 mg/L (AMEL), 0.75 mg/L (AWEL), and 1 mg/L (MDEL).

(b) RPA Results. The MEC for total phosphorus was 0.44 mg/L based on 53 samples collected between February 2009 and January 2012. The maximum observed upstream receiving water concentration was 0.085 mg/L based on three samples collected between March 2008 and April 2010. Based on monitoring data, the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of a water quality objective. The Discharger uses aluminum sulfate in the treatment system to remove phosphorus. In order to ensure that the Discharger provides adequate treatment to remove phosphorus from the effluent, this Order carries over effluent limitations for phosphorus from Order R5-2005-0155.

(c) WQBELs. Consistent with Order R5-2005-0155, this Order contains a final AMEL, AWEL, and MDEL for phosphorus of 0.5 mg/L, 0.75 mg/L, and 1 mg/L, respectively.

(d) Plant Performance and Attainability. Analysis of the effluent data indicates that the MEC of 0.44 mg/L does not exceed the applicable WQBELs. The Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

ix. Zinc, Total Recoverable

(a) WQO. The CTR includes hardness dependent criteria for the protection of freshwater aquatic life for zinc. These criteria for zinc are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. Default USEPA translators were used in this Order.

(b) RPA Results. Section IV.C.2.e of this Fact Sheet presents procedures for conducting the RPA for zinc. Based on the lowest observed upstream receiving water hardness of 2.11 mg/L (as $CaCO_3$), the applicable total recoverable criteria for evaluating the ambient background concentration are both 4.6 µg/L for the acute and chronic criteria. The maximum observed upstream receiving water zinc concentration was 6 µg/L (minimum RL 0.05 µg/L) based on nine samples collected between August 2007 and October 2012. Based on this data, the maximum ambient background zinc concentration exceeds the applicable CTR criteria.

As discussed in Section IV.C.2.e for comparing the MEC to the criteria, the reasonable worst-case downstream ambient hardness should be used. Based on a hardness of 39 mg/L (as $CaCO_3$), the applicable total recoverable criteria are both 54 µg/L for the acute and chronic criteria. The MEC for zinc (total recoverable) was 74 µg/L (minimum RL 1 µg/L), based on four samples collected by the Discharger between March 2008 and October 2012. Therefore, zinc in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of aquatic life.

(c) WQBELs. This Order contains a final AMEL and MDEL for zinc of 27 µg/L and 54 µg/L, respectively, based on the CTR criterion for the protection of aquatic life.

(d) Plant Performance and Attainability. Monitoring data indicates that the Discharger is able to consistently comply with the new WQBELs for zinc. The Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

4. WQBELs Calculations

a. This Order includes WQBELs for ammonia (as N), BOD_5, chlorine residual, copper, dichlorobromomethane, nitrite plus nitrate (as N), pH, phosphorus, total coliform, TSS, BOD_5 and TSS percent removal, and zinc. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBELs calculations.

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

$$ECA = C + D(C - B) \quad \text{where } C>B, \text{ and}$$
$$ECA = C \quad \text{where } C \leq B$$

where:

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

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

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

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

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

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

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

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

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

Summary of Water Quality-Based Effluent Limitations
Discharge Point No. 001

Table F-10. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Conventional Pollutants						
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--
	lbs/day[1]	8.7	13	17	--	--
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day[1]	8.7	13	17	--	--
Priority Pollutants						
Copper, Total Recoverable	µg/L	3.9	--	5.3	--	--
Dichlorobromomethane	µg/L	0.56	--	1.1	--	--
Zinc, Total Recoverable	µg/L	27	--	54	--	--
Non-Conventional Pollutants						
Ammonia Nitrogen, Total (as N)	mg/L	1.1	--	2.1	--	--
	lbs/day[1]	0.96	--	1.8	--	--
Chlorine, Total Residual	mg/L	--	0.011[2]	0.019[3]	--	--
Nitrite plus Nitrate (as N)	mg/L	~~42~~52	--	--	--	--
Phosphorus, Total (as P)	mg/L	0.5	0.75	1.0	--	--
	lbs/day[1]	0.44	0.66	0.87	--	--
Total Coliform	MPN/100 mL	--	2.2[4]	23[5]	--	240

1 Based on a design flow of 0.105 MGD.
2 Applied as a 4-hour average effluent limitation.
3 Applied as a 1-hour average effluent limitation.
4 Applied as a 7-day median effluent limitation.
5 Not to be exceeded more than once in any 30-day period.

5. Whole Effluent Toxicity (WET)

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 Monitoring and Reporting Program (Attachment E, section V.). This Order also contains effluent limitations for acute toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

a. Acute Aquatic Toxicity. The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-8.01) The Basin Plan also states that, "*…effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate…*". (Basin Plan at page III-9.00)

For priority pollutants, the SIP dictates the procedures for conducting the RPA. Acute toxicity is not a priority pollutant. Therefore, the Central Valley Water Board is not restricted to one particular RPA method. Therefore, due to the site-specific conditions of the discharge, the Central Valley Water Board has used professional judgment in determining the appropriate method for conducting the RPA. USEPA's September 2010 NPDES Permit Writer's Manual, page 6-30, states, "*State implementation procedures might allow, or even require, a permit writer to determine reasonable potential through a qualitative assessment process without using available facility-specific effluent monitoring data or when such data are not available…A permitting authority might also determine that WQBELs are required for specific pollutants for all facilities that exhibit certain operational or discharge characteristics (e.g., WQBELs for pathogens in all permits for POTWs discharging to contact recreational waters).*" Monitoring data for acute toxicity are not available as it was only required during periods of discharge to South Fork Merced River and no discharges occurred during the term of Order R5-2005-0155; however, the Facility is a domestic wastewater treatment plant that treats domestic wastewater containing ammonia and other acutely toxic pollutants. Acute toxicity effluent limitations are required to ensure compliance with the Basin Plan's narrative toxicity objective.

USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc.*" This Order carries over the acute toxicity effluent limitations from Order R5-2005-0155, as follows:

Acute Toxicity. Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:

Minimum for any one bioassay----------	70%
Median for any three consecutive bioassays ----------	90%

b. Chronic Aquatic Toxicity. The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-8.01) Monitoring data for chronic toxicity are not available as it was only required during periods of discharge to South Fork Merced River and no discharges occurred during the term of Order R5-2005-0155. Therefore, adequate chronic WET data are not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring once during the permit term for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, Special Provision VI.C.2.a of this Order requires the Discharger to submit to the Central Valley Water Board an Initial Investigative Toxicity Reduction Evaluation (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, requirements for accelerated monitoring, and requirements for TRE initiation if toxicity is demonstrated.

Numeric chronic WET effluent limitations have not been included in this Order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limitations. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region[15] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-0012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-0012, "*In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent*

[15] In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC Files A-1496 and 1496(a).

limitations for chronic toxicity contained in these permits." The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limitations in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet best management practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 CFR 122.44(k).

To ensure compliance with the Basin Plan's narrative toxicity objective, the Discharger is required to conduct chronic WET testing, as specified in the Monitoring and Reporting Program (Attachment E, section V.). Furthermore, Special Provision VI.C.2.a. of this Order requires the Discharger to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If the discharge demonstrates toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a TRE in accordance with an approved TRE work plan. The numeric toxicity monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to perform accelerated chronic toxicity monitoring, as well as, the threshold to initiate a TRE if effluent toxicity has been demonstrated.

D. Final Effluent Limitations

1. Mass-based Effluent Limitations

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

Mass-based effluent limitations have been established in this Order for ammonia, BOD_5, phosphorus, and TSS because they are oxygen-demanding substances. Mass-based effluent limitations were calculated based upon the design flow of 0.105 MGD. Except for the pollutants listed above, mass-based effluent limitations are not included in this Order for pollutant parameters for which effluent limitations are based on water quality objectives and criteria that are concentration-based.

2. Averaging Periods for Effluent Limitations

40 CFR 122.45(d) requires maximum daily and average monthly discharge limitations for all dischargers other than POTWs unless impracticable. The rationale

for using alternative averaging periods for BOD_5, chlorine residual, pH, phosphorus, total coliform, and TSS is discussed in section IV.C.3 of this Fact Sheet.

3. Satisfaction of Anti-Backsliding Requirements

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

The effluent limitations in this Order are at least as stringent as the effluent limitations in Order R5-2005-0155, with the exception of effluent limitations for copper, settleable solids, and turbidity. The effluent limitations for these pollutants are less stringent than those in Order R5-2005-0155 as described below. This relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

a. **CWA sections 402(o)(1) and 303(d)(4).** CWA section 402(o)(1) specifies that, in the case of effluent imitations established on the basis of CWA section 301(b)(1)(C) (i.e., WQBELs), a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with CWA section 303(d)(4). The effluent limitations for copper and settleable solids established in Order R5-2005-0155 are WQBELs and may be relaxed if the requirements of CWA section 303(d)(4) are satisfied.

   CWA section 303(d)(4) has two parts: paragraph (A) which applies to nonattainment waters and paragraph (B) which applies to attainment waters. For attainment waters, CWA section 303(d)(4)(B) specifies that a limitation based on a water quality standard may be relaxed where the action is consistent with the antidegradation policy. The 303(d) listings for South Fork Merced River, as described in section III.D.1 of this Fact Sheet, do not include copper or settleable solids. Thus, the receiving water is an attainment water for these constituents. The removal or relaxation of WQBELs for copper and settleable solids is consistent with CWA sections 402(o)(1) and 303(d)(4) and, as described in section IV.D.4 of this Fact Sheet, the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Therefore, the modifications to these effluent limitations do not violate anti-backsliding requirements.

   Order R5-2005-0155 established final mass-based effluent limitations for copper. 40 CFR 122.45(f)(1)(ii) states that mass limitations are not required when applicable standards and limitations are expressed in terms of other units of measurement. The numerical effluent limitations for copper established in this Order are based on water quality standards and objectives, which are expressed in terms of concentration. Pursuant to 40 CFR 122.45(f)(1)(ii), expressing the effluent limitations in terms of concentration is in accordance with Federal Regulations. Discontinuing mass-based effluent limitations for these parameters

is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Any impact on existing water quality will be insignificant. Therefore, the modifications to these effluent limitations do not violate anti-backsliding requirements.

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

As described further in section IV.C.3.b of this Fact Sheet, updated information that was not available at the time Order R5-2005-0155 was issued indicates ~~that~~ that settleable solids do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

i. **Settleable Solids.** Effluent monitoring data collected between February 2009 and January 2012 for settleable solids indicate that the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Basin Plan narrative objective for settleable solids.

Thus, removal of the effluent limitations for settleable solids from Order R5-2005-0155 is in accordance with CWA section 402(o)(2)(B)(i), which allows for the removal of effluent limitations based on information that was not available at the time of permit issuance.

c. **Turbidity.** Order R5-2005-0155 contained effluent limitations for turbidity. The prior limitations were solely an operational check to ensure the treatment system was functioning properly and could meet the limitations for solids and coliform. The prior effluent limitations were not intended to regulate turbidity in the receiving water. Rather, turbidity is an operational parameter to determine proper system functioning and not a WQBEL.

This Order contains operational turbidity specifications to be met in lieu of effluent limitations and does not include effluent limitations for turbidity. However, the performance-based specifications in this Order are equivalent limitations that are not less stringent, and therefore do not constitute backsliding.

The revised operational specifications for turbidity are the same as the effluent limitations in Order R5-2005-0155. These revisions are consistent with State regulations implementing recycled water requirements. The revision in the turbidity limitations is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16 because this Order

imposes equivalent or more stringent requirements than Order R5-2005-0155 and, therefore, does not allow degradation.

4. Satisfaction of Antidegradation Policy

a. Surface Water. This Order does not allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. This Order requires compliance with applicable federal technology-based standards and with WQBELs where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

This Order relaxes existing effluent limitations for copper and removes existing effluent limitations for settleable solids. The Central Valley Water Board finds that the relaxation of the effluent limitations is not expected to result in an increase in pollutants or any additional degradation of the receiving water. Thus, the relaxation of effluent limitations is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

This Order allows a mixing/dilution zone in accordance with the Basin Plan and USEPA's TSD. As discussed in Section IV.C.2.c. of this Fact Sheet (Assimilative Capacity/Mixing Zone), the mixing zone is as small as practical and complies with all applicable requirements. In addition, this Order includes a performance-based effluent limitation for nitrite plus nitrate (as N) that is more stringent than would be allowed under the mixing zone analysis alone, implementing BPTC. Therefore, with BPTC implemented, the Central Valley Water Board finds that the degradation due to the increase of pollutant concentration allowed by the mixing zone does not impact beneficial uses in the receiving water downstream of the mixing zone, and is in accordance with state and federal antidegradation policies.

b. Groundwater. The Discharger reclaims wastewater on the Wawona Golf Course. This Order does not authorize an increase in flow or mass of constituents over that authorized in the previous Order (Order R5-2005-0155); thus, a complete antidegradation analysis is unnecessary. Recycled water is blended with water from South Fork Merced River and used to irrigate the golf course. The characteristics of the ~~recycled~~ blended water are ~~un~~known ~~because~~ from effluent~~ is blended with river water prior to irrigation~~ and receiving water monitoring. ~~However, it is unlikely that the discharge will cause an impact on~~The discharge is not expected to cause degradation of the underlying groundwater because the discharge is diluted with river water and an appreciable amount of snowmelt is also discharged to underlying groundwater, further diluting the recycled water discharge. The Discharger is not required to monitor groundwater. However, this Order includes a groundwater limitation that requires

the discharge not cause underlying groundwater to contain waste constituents in concentrations greater than background groundwater quality.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitation consists of restrictions on flow. The WQBELs consist of restrictions on ammonia (as N), BOD5, chlorine residual, copper, dichlorobromomethane, nitrite plus nitrate (as N), pH, phosphorus, total coliform, TSS, BOD_5 and TSS percent removal, and zinc. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR 131.38. The scientific procedures for calculating the individual WQBELs for priority pollutants are based on the CTR-SIP, which was approved by USEPA on 18 May 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to 30 May 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to 30 May 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

Summary of Final Effluent Limitations
Discharge Point No. 001

Table F-11. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow	MGD	--	--	0.288	--	--	DC
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--	TTC
	lbs/day[2]	8.7	13	17	--	--	
	% Removal	90	--	--	--	--	TTC
pH	standard units	--	--	--	6.5	8.5	BP
Total Suspended Solids	mg/L	10	15	20	--	--	TTC
	lbs/day[2]	8.7	13	17	--	--	
	% Removal	90	--	--	--	--	TTC
Priority Pollutants							
Copper, Total Recoverable	µg/L	3.9	--	5.3	--	--	CTR

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Dichlorobromomethane	µg/L	0.56	--	1.1	--	--	CTR
Zinc, Total Recoverable	µg/L	27	--	54	--	--	CTR
Non-Conventional Pollutants							
Ammonia Nitrogen, Total (as N)	mg/L	1.1	--	2.1	--	--	NAWQC
	lbs/day[2]	0.96	--	1.8	--	--	
Chlorine, Total Residual	mg/L	--	0.011[3]	0.019[4]	--	--	NAWQC
Nitrite plus Nitrate (as N)	mg/L	~~42~~52	--	--	--	--	MCL
Phosphorus, Total (as P)	mg/L	0.5	0.75	1.0	--	--	PO
	lbs/day[2]	0.44	0.66	0.87	--	--	
Total Coliform	MPN/100 mL	--	2.2[5]	23[6]	--	240	Title 22
Acute Toxicity	% Survival	--	--	[7]	--	--	BP

[1] DC – Based on the design capacity of the diffuser.
TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
NAWQC – Based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life.
MCL – Based on the Primary Maximum Contaminant Level.
PO – Based on effluent limitations contained in previous Order R5-2005-0155.
Title 22 – Based on CA Department of Public Health Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).
BP – Based on water quality objectives contained in the Basin Plan.

[2] Based on a design flow of 0.105 MGD.

[3] Applied as a 4-hour average effluent limitation.

[4] Applied as a 1-hour average effluent limitation.

[5] Applied as a 7-day median effluent limitation.

[6] Not to be exceeded more than once in any 30-day period.

[7] Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall be no less than:
Minimum for any one bioassay: 70%
Median for any three consecutive bioassays: 90%

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Recycled Water Specifications

The Discharger uses tertiary treated wastewater for golf course irrigation. This Order includes recycled water specifications, which are necessary to ensure that the use of recycled water does not unreasonably affect present and anticipated uses of groundwater and surface water.

DPH requires that American Water Works Association (AWWA) *Guidelines for Distribution of Non-Potable Water and Guidelines for the On-site Retrofit of Facilities*

Using Disinfected Tertiary Recycled Water be implemented in design and construction of recycling equipment. The guidelines require installation of purple pipe, adequate signs, etc. Adequate separation between the recycled lines and domestic water lines and sewer lines is also required.

DPH has established statewide water recycling criteria in Title 22. DPH revised the water recycling criteria contained in Title 22 on 2 December 2000. The Facility produces effluent that meets Title 22 disinfected tertiary standards for filtration. The Recycled Water Specifications in this Order require that effluent meet Title 22 requirements for disinfected tertiary recycled water, suitable for use on an unrestricted access golf course and as a source for landscape impoundments. Included in the recycled water specifications are requirements contained in Title 22, CCR, Section 60310 to protect public health.

1. **BOD, TSS, and BOD and TSS percent removal.** This Order includes recycled water specifications for BOD, TSS, and BOD and TSS percent removal that are technically based on the capability of a tertiary system, consistent with requirements established for other tertiary treatment systems, and consistent with the "best practicable treatment or control" provision of State Water Board Resolution No. 68-16. The recycled water specifications for BOD, TSS, and BOD and TSS percent removal are carried over from Order R5-2005-0155.

2. **Total Coliform and Turbidity.** DPH promulgated water recycling criteria in Title 22, CCR, Division 4, Chapter 3, to ensure reuse of wastewater does not pose an unacceptable health risk in various use situations. Title 22 requires that for sprinkler irrigation of food crops, parks, playgrounds, schoolyards, and other areas of similar public access, recycled water must be adequately disinfected, oxidized, coagulated (under certain circumstances), clarified, and filtered, and that the effluent total coliform levels not exceed 2.2 MPN/100 mL as a 7-day median, not exceed 23 MPN/100 mL in more than one sample in any 30-day period, and never exceed 240 MPN/100 mL (disinfected tertiary treatment). Title 22, CCR, Section 60301.320 contains filtration requirements for natural undisturbed soils or bed filter media. These requirements specify the turbidity of the influent to and effluent from the filters. This Order carries over the recycled water specifications for total coliform from Order R5-2005-0155, which are consistent with Title 22 recycled water criteria. This Order also includes turbidity operational specifications, consistent with Title 22 recycled water criteria.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The tastes and

odors objective states that surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin 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 bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, suspended sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.

a. pH. Order R5-2005-0155 established a receiving water limitation for pH specifying that discharges from the Facility shall not cause the ambient pH to change by more than 0.5 units based on the water quality objective for pH in the Basin Plan. The Central Valley Water Board adopted Resolution R5-2007-0136 on 25 October 2007, amending the Basin Plan to delete the portion of the pH water quality objective that limits the change in pH to 0.5 units and the allowance of averaging periods for pH. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and USEPA. Consistent with the revised water quality objective in the Basin Plan, this Order does not require a receiving water limitation for pH change.

In Finding No. 14 of Resolution R5-2007-0136, the Central Valley Water Board found that the change in the pH receiving water objective is consistent with the State Water Board Resolution No. 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial uses of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy (40 CFR 131.12).

Ammonia is the only constituent in the discharge regulated by this Order directly related to pH. The fixed ammonia effluent limitations in this Order are based on reasonable worse-case conditions. Although ammonia criteria are based on pH, and the pH receiving water limitations are more lenient in this Order than in the previous Order, the fixed ammonia limitations are new limitations, and were

developed to protect aquatic life and other beneficial uses and will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than prescribed in applicable policies. The relaxation of the receiving water limitation is not expected to cause other impacts on water quality. The Central Valley Water Board finds that the relaxation of the pH receiving water limitation in this Order is to the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses of waters, will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy.

The revised receiving water limitation for pH, which is based on the amendment to the Basin Plan's pH water quality objective, reflects current scientifically supported pH requirements for the protection of aquatic life and other beneficial uses. The revised receiving water limitation for pH is more consistent with the current USEPA recommended criteria and is fully protective of aquatic life and the other beneficial uses listed in the Basin Plan. Changes in pH when pH is maintained within the range of 6.5 to 8.5 are neither beneficial nor adverse and, therefore, are not considered to be degradation in water quality. Attempting to restrict pH changes to 0.5 pH units would incur substantial costs without demonstrable benefits to beneficial uses. Thus, any changes in pH that would occur under the revised pH limitation would not only be protective of beneficial uses, but also would be consistent with maximum benefit to people of the State. Therefore, the proposed amendment will not violate antidegradation policies.

b. **Turbidity.** Order R5-2005-0155 established a receiving water limitation for turbidity specifying that discharges from the Facility shall not cause the turbidity to increase more than 1 NTU where natural turbidity is between 0 and 5 NTU based on the water quality objective for turbidity in the Basin Plan. The Central Valley Water Board adopted Resolution R5-2007-0136 on 25 October 2007, amending the Basin Plan to limit turbidity to 2 NTU when the natural turbidity is less than 1 NTU. The Basin Plan amendment has been approved by the State Water Board, the Office of Administrative Law, and USEPA. Consistent with the revised water quality objective in the Basin Plan, this Order limits turbidity to 2 NTU when the natural turbidity is less than 1 NTU.

In Finding No. 14 of Resolution R5-2007-0136 the Central Valley Water Board found that the change in the turbidity receiving water objective is consistent with the State Water Board Resolution No. 68-16, in that the changes to water quality objectives (i) consider maximum benefit to the people of the State, (ii) will not unreasonably affect present and anticipated beneficial uses of waters, and (iii) will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy.

This Order includes operational specifications that require the Discharger to operate the treatment system to ensure that turbidity shall not exceed 2 NTU as a daily average, 5 NTU more than 5 percent of the time within a 24-hour period, and 10 NTU, at any time. Because this Order limits the average daily discharge of turbidity to 2 NTU, the Order will be protective of the receiving water under all

natural background conditions as defined in the Basin Plan's revised water quality objective for turbidity. The relaxation of the turbidity receiving water limitation will protect aquatic life and other beneficial uses and will not unreasonably affect present and anticipated beneficial uses nor result in water quality less than prescribed in applicable policies. The relaxation of the receiving water limitation is not expected to cause other impacts on water quality. The Central Valley Water Board finds that the relaxation of the turbidity receiving water limitation in this Order is to the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of waters, will not result in water quality less than that prescribed in policies, and is consistent with the federal Antidegradation Policy.

The revised receiving water limitation for turbidity, which is based on the amendment to the Basin Plan's turbidity water quality objective, reflects current scientifically supported turbidity requirements for the protection of aquatic life and other beneficial uses and, therefore, will be fully protective of aquatic life and the other beneficial uses listed in the Basin Plan. Changes in turbidity allowed by the revised receiving water limitation, when ambient turbidity is below 1 NTU, would not adversely affect beneficial uses and would maintain water quality at a level higher than necessary to protect beneficial uses. Restricting low-level turbidity changes further may require costly upgrades, which would not provide any additional protection of beneficial uses. Thus, any changes in turbidity that would occur under the amended turbidity receiving water limitation would not only be protective of beneficial uses, but also would be consistent with maximum benefit to people of the State. Therefore, the relaxed receiving water limitations for turbidity will not violate antidegradation policies.

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

or domestic supply, agricultural supply, industrial supply or some other beneficial use.

3. 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 that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (Attachment E) of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for the Facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (e.g., BOD_5 and TSS reduction requirements). The monitoring frequencies for flow (continuous), BOD_5 (weekly), and TSS (weekly) have been retained from Order R5-2005-0155. Influent flow monitoring is required to assess compliance with the influent flow limitation. Weekly monitoring requirements for settleable solids have not been retained from Order R5-2005-0155 as they are not necessary to determine compliance with the requirements of this Order. Due to concerns with elevated effluent salinity concentrations, this Order establishes quarterly influent monitoring for electrical conductivity and total dissolved solids to evaluate sources of salinity to the Facility.

B. Effluent Monitoring

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

2. Order R5-2005-0155 established two effluent monitoring locations (Monitoring Locations M-001 and M-002) to be monitored when discharging at Discharge Point No. 001. To be consistent with the Central Valley Water Board's standard naming conventions for monitoring locations, this Order revises the monitoring location names from M-001 and M-002 to EFF-001 and EFF-002, respectively, for discharges to South Fork Merced River. For discharges to the reclamation area, this Order revises the monitoring location name from M-002 to REC-001. Order R5-2005-0155 defined Monitoring Location EFF-001 as a location after the treatment and storage units but prior to discharge to South Fork Merced River and Monitoring Location EFF-002 as the outlet of the surge tank prior to discharge to the storage tanks. The effluent limitations indicate that compliance shall be monitored at

Monitoring Locations EFF-001 and EFF-002 as described in the MRP. Order R5-2005-0155 explicitly specifies that compliance determination for effluent limitations for flow and chlorine residual shall be at Monitoring Location EFF-001. Order R5-2005-0155 established monitoring requirements for turbidity, pH, and copper at both monitoring locations and thus it was unclear which monitoring location was intended for compliance determination. Order R5-2005-0155 established monitoring for the remaining parameters with effluent limitations only at Monitoring Location EFF-002 and it is assumed that compliance determination for these parameters is at this location. The Fact Sheet for Order R5-2005-0155 indicates that the internal Monitoring Location EFF-002 was established for certain pollutants because the effluent is diluted with river water in the storage tanks prior to discharging to South Fork Merced River. For the purposes of this Order, compliance determination for effluent limitations for all constituents other than flow, chlorine residual, and pH will be at Monitoring Location EFF-002. Compliance determination for flow, chlorine residual, and pH will remain at Monitoring Location EFF-001 since the effluent flow limitation is based on the design capacity of the diffuser and dechlorination occurs after the storage tanks prior to discharge to the river.

3. Monitoring Location EFF-001

a. Effluent monitoring frequencies and sample types at Monitoring Location EFF-001 for flow (daily), chlorine (daily), turbidity (daily), pH (daily), dissolved oxygen (daily), and temperature (daily) have been retained from Order R5-2005-0155 to determine compliance with effluent limitations, where applicable, and characterize the effluent for these parameters.

b. Monitoring requirements for ammonia (as N), total kjeldahl nitrogen, nitrate (as N), and copper are not retained in this Order as they are not necessary to determine compliance with the requirements of this Order.

4. Monitoring Location EFF-002

a. Effluent monitoring frequencies and sample types for flow (continuous), BOD_5 (twice per week), pH (daily), TSS (twice per week), copper (monthly), electrical conductivity (weekly), nitrate (monthly), phosphorus (twice per month), and total coliform (daily) have been retained from Order R5-2005-0155 to determine compliance with effluent limitations for these parameters.

b. Monitoring data collected over the existing permit term for chloroform, methyl chloride, and settleable solids did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order R5-2005-0155.

c. Monitoring data collected over the term of Order R5-2005-0155 for dichlorobromomethane and zinc indicate that the discharge has reasonable potential to cause or contribute to an exceedance of water quality objectives/criteria and effluent limitations have been established in this Order. Therefore, this Order increases the monitoring frequency for

dichlorobromomethane from annually to monthly and establishes monthly monitoring for zinc to determine compliance with the applicable effluent limitations.

d. This Order establishes daily monitoring for chlorine residual to ensure that discharges to the storage tanks are adequately disinfected.

e. This Order establishes monthly monitoring for hardness to ensure that adequate data are available to properly adjust water quality criteria for hardness-based metals.

f. This Order specifies that compliance with the operational specifications for turbidity shall be determined at Monitoring Locations INT-001 and INT-002. Therefore, this Order discontinues monitoring for turbidity at Monitoring Location EFF-002.

g. This Order establishes new effluent limitations for ammonia (as N). Therefore, this Order revises the form of ammonia from NH_3 to N and increases the monitoring frequency from monthly to weekly.

h. This Order establishes effluent limitations for nitrite plus nitrate (as N). Therefore, this Order establishes monthly monitoring for nitrite (as N), to be conducted concurrently with monitoring for nitrite plus nitrate (as N).

i. Order R5-2005-0155 established monthly monitoring for total Kjeldahl nitrogen and annual monitoring for standard minerals. Monitoring for these parameters is unnecessary to determine compliance with permit requirements for the surface water discharge and have not been retained in this Order. Monitoring for these parameters is required at Monitoring Location REC-001.

j. Priority pollutant data for the effluent have been provided by the Discharger over the term of Order R5-2005-0155 and were used to conduct an RPA. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established is required. This Order requires monitoring once during the first discharge to South Fork Merced River in order to collect data to conduct an RPA for the next permit renewal. See Attachment I for more detailed requirements related to performing priority pollutant monitoring.

k. Water Code section 13176, subdivision (a), states: "*The analysis of any material required by* [Water Code sections 13000-16104] *shall be performed by a laboratory that has accreditation or certification to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code.*" DPH certifies laboratories through its Environmental Laboratory Accreditation Program (ELAP).

Water Code section 13176 cannot be interpreted in a manner that would violate federal holding time requirements that apply to NPDES permits pursuant to the

CWA. (Water Code sections 13370(c), 13372, 13377.) Water Code section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Water Code section 13372(a)) The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH and immediate analysis is required for temperature (40 CFR 136.3(e), Table II). Due to the location of the Facility, it is both legally and factually impossible for the Discharger to comply with Water Code section 13176 for constituents with short holding times.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity**. Annual (1/year) 96-hour bioassay testing is required to demonstrate compliance with the effluent limitations for acute toxicity.

2. **Chronic Toxicity.** Chronic whole effluent toxicity testing is required once during the permit term in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.

b. Receiving water monitoring frequencies and sample types for flow (daily, upstream only), pH (weekly), electrical conductivity (weekly), dissolved oxygen (weekly), temperature (weekly), total coliform organisms (twice per week), and turbidity (weekly) have been retained from Order R5-2005-0155.

~~**b.**~~**c.** This Order establishes monthly monitoring for pH, aluminum, electrical conductivity, and temperature at RSW-001 for the first two years of the permit term, regardless of whether there is a discharge to South Fork Merced River. Monitoring is only required between 1 December and 31 May and was established to obtain water quality for the upstream receiving water for the next permit renewal.

~~**c.**~~**d.** This Order establishes monthly receiving water monitoring requirements for hardness during the first year of the permit term, regardless of whether there is a discharge to South Fork Merced River, to ensure that adequate data are available to properly adjust water quality criteria for hardness-based metals. Monitoring is reduced to quarterly after the first year of monitoring. The Discharger is only required to monitor hardness between 1 December and 31 May.

~~**d.**~~**e.** Routine monitoring requirements for total kjeldahl nitrogen, ammonia, phosphorus, chlorine residual, copper, chloroform, dichlorobromomethane, and

methyl chloride have not been retained from Order R5-2005-0155 as they are not necessary to determine compliance with permit requirements.

~~e.~~**f.** Priority pollutant data for the receiving water have been provided by the Discharger over the term of Order R5-2005-0155, and were used to conduct an RPA. In accordance with Section 1.3 of the SIP, periodic monitoring for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established is required. This Order requires monitoring for priority pollutants and other pollutants of concern once during the permit term, performed concurrently with effluent monitoring, in order to collect data to conduct an RPA for the next permit renewal. See Attachment I for more detailed requirements related to performing priority pollutant monitoring.

2. Groundwater – Not Applicable

E. Other Monitoring Requirements

1. Recycled Water Monitoring

Recycled water monitoring is required to assess compliance with Recycled Water Specifications and the water recycling criteria contained in Title 22, CCR, Section 60301 et. seq. Monitoring is also required to identify any equipment malfunction or other circumstances that might allow irrigation runoff to leave the irrigation area and/or create ponding conditions that violate the WDRs.

2. Biosolids Monitoring

Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements contained in Special Provision VI.C.6.a. of this Order. Biosolids disposal requirements are imposed pursuant to 40 CFR Part 503 to protect public health and prevent groundwater degradation.

3. Water Supply Monitoring

Water supply monitoring is required to evaluate the source of constituents in the wastewater. Consistent with Order R5-2005-0155, this Order retains annual monitoring for total dissolved solids and electrical conductivity in the source water supply.

4. Filtration System Monitoring

This Order establishes monitoring locations at Monitoring Locations INT-001 and INT-002 at the influent to and effluent from the filtration system, respectively. This Order requires daily monitoring for the filtration rate and continuous monitoring of turbidity to determine compliance with the operational specifications in Special Provision VI.C.4.a. Continuous turbidity monitoring at the influent to the filters (INT-001) is only required when the Discharger is not using coagulation.

5. Disinfection System Monitoring

This Order establishes a new monitoring location at Monitoring Location INT-003, located where a representative sample of the effluent from the disinfection system can be obtained. This Order requires daily monitoring for the chlorine contact time at Monitoring Location INT-003 to determine compliance with the operational specifications in Special Provision VI.C.4.b.

6. Effluent and Receiving Water Characterization Study

An effluent and receiving water monitoring study is required to ensure adequate data are available for the next permit renewal. Once during the term of the permit, during the first discharge to South Fork Merced River, the Discharger shall conduct monitoring of the effluent at Monitoring Location EFF-002 and of the receiving water at Monitoring Location RSW-001 for all priority pollutants and other constituents of concern as described in Attachment I. If no discharges to South Fork Merced River occur during the first ~~two~~ three years of the permit term, the Discharger shall conduct monitoring of the effluent at Monitoring Location REC-001 and of the receiving water at Monitoring Location RSW-001 for all priority pollutants and other constituents of concern as described in Attachment I.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

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

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

B. Special Provisions

1. Reopener Provisions

a. Whole Effluent Toxicity. This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a Toxicity Reduction Evaluation (TRE). This Order may be reopened to

include a numeric chronic toxicity effluent limitation, new acute toxicity effluent limitations, and/or effluent limitations for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on that objective.

b. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating criteria for applicable inorganic constituents. In addition, default dissolved-to-total metal translators have been used to convert water quality objectives from dissolved to total recoverable when developing effluent limitations for copper and zinc. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

c. **Dilution/Mixing Zone Study.** This Order allows for a mixing zone and dilution credits for non-CTR human health constituents. If the Discharger conducts a Dilution/Mixing Zone Study that satisfies the requirements of Section 1.4.2.2 of the SIP, this Order may be reopened to revise applicable effluent limitations for CTR constituents accordingly.

2. Special Studies and Additional Monitoring Requirements

a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-8.01) Monitoring data for chronic toxicity are not available as it was only required during periods of discharge to South Fork Merced River and no discharges occurred during the term of Order R5-2005-0155. Therefore, adequate WET data are not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, this provision requires the Discharger to submit to the Central Valley 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, requirements for accelerated monitoring, and requirements for TRE initiation if toxicity is demonstrated.

Monitoring Trigger. A numeric toxicity monitoring trigger of **> 1** 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 toxicity at 100% effluent.

Accelerated Monitoring. The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is 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 in a six-week period (i.e., one test 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 effluent toxicity (i.e., toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

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:

- *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, EPA/833-B-99/002, August 1999.
- *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs)*, EPA/600/2-88/070, April 1989.
- *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures*, Second Edition, EPA 600/6-91/003, February 1991.
- *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I*, EPA/600/6-91/005F, May 1992.
- *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.

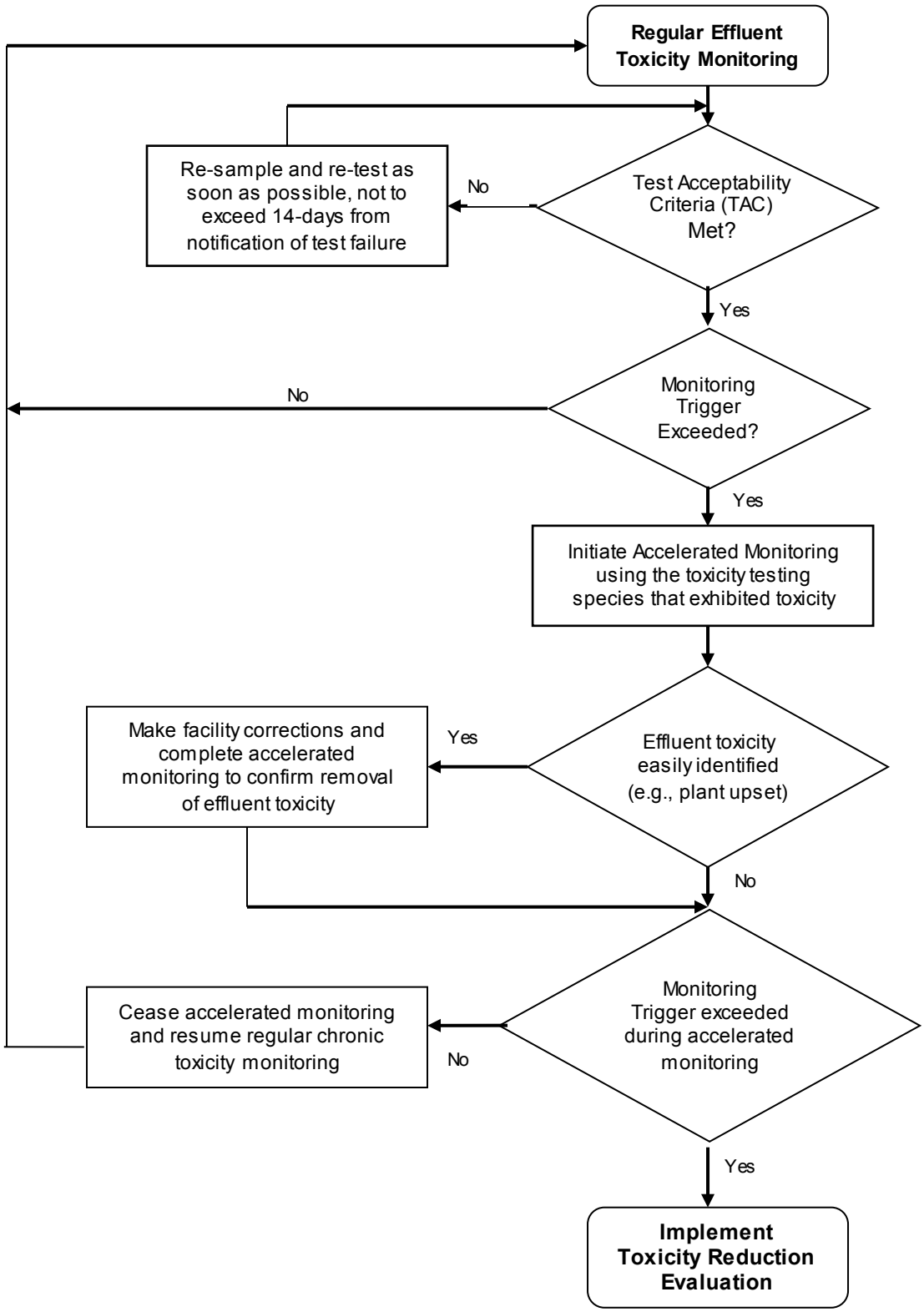
- *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity*, Second Edition, EPA 600/R-92/081, September 1993.

- *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.

- *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.

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

Figure F-1
WET Accelerated Monitoring Flow Chart



3. Best Management Practices and Pollution Prevention

a. Salinity Evaluation and Minimization Plan. As described further in section IV.C.3.b of this Fact Sheet, the Central Valley Water Board is concerned with the elevated salinity levels in the effluent given the very low levels in the water supply. The primary water supply for the Discharger's service area is South Fork Merced River, which has a maximum electrical conductivity of 46 µmhos/cm and an average of 35 µmhos/cm. Source water data provided by the Discharger between 2005 and 2009 for electrical conductivity ranged from 43.71 µmhos/cm to 68.8 µmhos/cm with an average of 54 µmhos/cm. Total dissolved solids in the water supply ranged from 31 mg/L to 49 mg/L with an average of 39 mg/L. Influent salinity data are not available, but the Discharger believes that sewer users with private groundwater wells may potentially increase the salinity of the influent wastewater; however, the Discharger is not aware of groundwater quality in the area or the percentage of sewer users with groundwater wells. Previous Orders indicate the groundwater in the vicinity of the golf course area is approximately 20 µmhos/cm. Chemicals used in the treatment system include alum (manual feed), soda ash (flow-paced), and chlorine (flow-paced), which may contribute to the elevated salinity concentrations. Due to the elevated salinity levels in the effluent compared to the water supply, an Evaluation and Minimization Plan for salinity is required in this Order to ensure adequate measures are developed and implemented by the Discharger to reduce the discharge of salinity to South Fork Merced River.

4. Construction, Operation, and Maintenance Specifications

a. Turbidity. Operational specifications for turbidity are included as an indicator of the effectiveness of the treatment process and to ensure compliance with effluent limitations for total coliform. The tertiary treatment process at the Facility is capable of reliably meeting a turbidity lower than 2 NTU. Failure of the treatment system such that virus removal is impaired would normally result in increased particles in the effluent, which can result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure, and rapid corrective action. The operational specifications for turbidity included in this Order are specified in Title 22, CCR, section 60301.320 and 60304.

b. Filtration Rate. This Order carries over the requirement in Order R5-2005-0155 that the maximum filtration rate shall not exceed 5 gpm/ft^2 to ensure that wastewater to be recycled or discharged to South Fork Merced River is properly filtered. The filtration rate included in this Order is specified in Title 22, CCR, section 60301.320(a)(1).

c. Treatment Plant Operating Requirements

i. This Order requires that the treatment facilities be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

ii. This Order requires that the Discharger maximize wastewater recycling and only discharge to South Fork Merced River when irrigation of the golf course is not necessary (snow or saturated soil conditions) and storage capacity has been reached. This provision is consistent with Basin Plan, Water Code, and the Recycled Water Policy requirements to utilize reclamation prior to other wastewater discharge options.

iii. This Order requires wastewater to be oxidized, coagulated, filtered, and adequately disinfected pursuant to DPH reclamation criteria Title 22, CCR, division 4, chapter 3 (Title 22), or equivalent.

iv. DPH statewide reclamation criteria contained in Title 22, CCR, section 60301.230 requires that the chlorine disinfection process following filtration provide a CT (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow. This Order retains minimum CT and modal contact time operation specifications based on DPH recycling criteria.

d. Collection System. The State Water Board issued General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order 2006-0003-DWQ (General Order) on 2 May 2006. The General Order requires public agencies that own or operate sanitary sewer systems with greater than one mile of pipes or sewer lines to enroll for coverage under the General Order. The General Order requires agencies to develop sanitary sewer management plans (SSMPs) and report all sanitary sewer overflows (SSOs), among other requirements and prohibitions.

Furthermore, the General Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. Inasmuch that the Discharger's collection system is part of the system that is subject to this Order, certain standard provisions are applicable as specified in Standard Provisions VI.C.4. For instance, the 24-hour reporting requirements in this Order are not included in the General Order. The Discharger must comply with both the General Order and this Order. The Discharger and public agencies that are discharging wastewater into the Facility were required to obtain enrollment for regulation under the General Order by 1 December 2006. The Discharger submitted a Notice of Intent dated 2 November 2006 and was approved for coverage under the General Order.

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

6. Other Special Provisions – Not Applicable

7. Compliance Schedules – Not Applicable

VIII. PUBLIC PARTICIPATION

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

A. Notification of Interested Parties

The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided by posting at the entrance of the Facility, at the nearest city hall or county courthouse, and by posting on the Central Valley Water Board's website.

B. Written Comments

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

To be fully responded to by staff and considered by the Central Valley Water Board, written comments must be received at the Central Valley Water Board offices by 5:00 p.m. on **14 June 2013**.

C. Public Hearing

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

Date: 25/26 July 2013
Time: 8:30 a.m.
Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

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

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

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Central Valley Water Board regarding the final WDRs. The petition must be received by the State Water Board within 30 days of the Central Valley Water Board's action, and must be submitted to the following address:

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

E. Information and Copying

The Report of Waste Discharge, related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the following address at any time between 8:00 a.m. and 4:30 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (559) 445-5116. Our office is located at 1685 "E" Street, Fresno, CA 93706.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Central Valley Water Board, reference this Facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Aide Ortiz at (559) 445-6083.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS FOR CONSTITUENTS OF CONCERN

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Aluminum, Total Recoverable	µg/L	240	63	200	750[1]	--	--	--	--	200	Inconclusive
Ammonia Nitrogen, Total (as N)	mg/L	0.1	0.72	2.14	2.14[1]	3.69[2]	--	--	--	--	Yes
Chloride	mg/L	100	4	250	--	--	--	--	--	250	No
Copper, Total Recoverable	µg/L	11	0.31	4.2[3]/0.35[4]	5.8[3]/0.37[4]	4.2[3]/0.35[4]	1,300	--	--	1,000	Yes
Dichlorobromomethane	µg/L	7.1	<0.14	0.56	--	--	0.56	46	--	80[5]	Yes
Electrical Conductivity @ 25°C	µmhos/cm	826[6]	46	900	--	--	--	--	--	900	No
Nitrate Nitrogen, Total (as N)	mg/L	38	1.1	10	--	--	--	--	--	10	Yes
Nitrite Nitrogen, Total (as N)	mg/L	<0.3	<0.05	1.0	--	--	--	--	--	1.0	No
Phosphorus, Total (as P)	mg/L	0.44	0.085	--	--	--	--	--	--	--	No
Sulfate	mg/L	23	2	250	--	--	--	--	--	250	No
Total Dissolved Solids	mg/L	455[5]	61	500	--	--	--	--	--	500	No
Zinc, Total Recoverable	µg/L	74	6	54[3]/4.6[4]	54[3]/4.6[4]	54[3]/4.6[4]	7,400	26,000	--	5,000	Yes

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level
NA = Not Available
ND = Non-detect

Footnotes:
(1) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour Average.
(2) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day Average.
(3) Criterion to be compared to the maximum effluent concentration.
(4) Criterion to be compared to the maximum upstream receiving water concentration.
(5) Represents the Primary MCL for total trihalomethanes, which includes bromoform, chlorodibromomethane, chloroform, and dichlorobromomethane.
(6) Highest calendar year average

ATTACHMENT H – CALCULATION OF WQBELS

Parameter	Units	Most Stringent Criteria			HH Calculations[1]			Aquatic Life Calculations[1]											Final Effluent Limitations	
		HH	CMC	CCC	ECA_{HH} = $AMEL_{HH}$	AMEL/MDEL $Multiplier_{HH}$	$MDEL_{HH}$	ECA_{acute}	ECA $Multiplier_{acute}$	LTA_{acute}	$ECA_{chronic}$	ECA $Multiplier_{chronic}$	$LTA_{chronic}$	Lowest LTA	AMEL $Multiplier_{95}$	$AMEL_{AL}$	MDEL $Multiplier_{99}$	$MDEL_{AL}$	Lowest AMEL	Lowest MDEL
Ammonia Nitrogen, Total (as N)	mg/L	--	2.14	3.69	--	--	--	2.14	0.32	0.68	3.69	0.78	2.88	0.68	1.55	1.1	3.11	2.1	1.1	2.1
Copper, Total Recoverable	µg/L	1,000	5.8	4.2	1,000	1.39	1,391	5.8	0.61	3.5	4.2	0.78	3.26	3.26	1.19	3.9	1.63	5.3	3.9	5.3
Dichlorobromomethane	µg/L	0.56	--	--	0.56	2.01	1.1	--	--	--	--	--	--	--	--	--	--	--	0.56	1.1
Zinc, Total Recoverable	µg/L	5,000	54	54	5,000	2.01	10,031	54	0.32	17	54	0.53	28	17	1.55	27	3.11	54	27	54

[1] As described in section IV.C.2.c of the Fact Sheet (Attachment F), calculation of priority pollutant effluent limitations for the protection of human health and aquatic life are determined without the allowance of dilution credits.

ATTACHMENT I – EFFLUENT AND RECEIVING WATER CHARACTERIZATION STUDY

I. **Background.** Sections 2.4.1 through 2.4.4 of the SIP provide minimum standards for analyses and reporting. (Copies of the SIP may be obtained from the State Water Resources Control Board, or downloaded from http://www.waterboards.ca.gov/water_issues/programs/state_implementation_policy/docs/sip2005.pdf). To implement the SIP, effluent and receiving water data are needed for all priority pollutants. Effluent and receiving water pH and hardness are required to evaluate the toxicity of certain priority pollutants (such as heavy metals) where the toxicity of the constituents varies with pH and/or hardness. Section 3 of the SIP prescribes mandatory monitoring of dioxin congeners. In addition to specific requirements of the SIP, the Central Valley Water Board is requiring the following monitoring:

A. **Effluent and receiving water hardness and pH.** These are necessary because several of the CTR constituents are hardness and pH dependent.

II. **Monitoring Requirements**

A. **Monitoring**. Priority pollutant samples shall be collected from the effluent and upstream receiving water and analyzed for the constituents listed in Table I-1. Monitoring shall be conducted once during the term of the permit during the first discharge to South Fork Merced River at Monitoring Locations EFF-002 and RSW-001. If no discharges to South Fork Merced River occur during the first ~~two~~ three years of the permit term, monitoring shall be conducted once during the ~~third~~ fourth year of the permit term at Monitoring Locations REC-001 and RSW-001. The results of such monitoring shall be submitted to the Central Valley Water Board with the monthly self-monitoring report in which the samples were collected. Each individual monitoring event shall provide representative sample results for the effluent and upstream receiving water.

B. **Concurrent Sampling.** Effluent and receiving water sampling shall be performed at approximately the same time, on the same date.

C. **Sample type.** All effluent samples shall be taken as 24-hour flow proportioned composite samples except samples for constituents which 40 CFR Part 136 indicates composite samples are inappropriate (e.g., volatile organic compounds). All receiving water samples shall be taken as grab samples.

D. **Additional Monitoring/Reporting Requirements.** The Discharger shall conduct the monitoring and reporting in accordance with the General Monitoring Provisions and Reporting Requirements in Attachment E.

Table I-1. Priority Pollutants

CTR#	Constituent	CAS Number	Reporting Level (µg/L or noted)	Associated Analytical Method Type[1]
1	Antimony, Total Recoverable	7440360	5	GFAA
			0.5	ICPMS
			5	SPGFAA
			0.5	HYDRIDE
2	Arsenic, Total Recoverable	7440382	2	GFAA
			10	ICP
			2	ICPMS
			2	SGFAA
			1	HYDRIDE
3	Beryllium, Total Recoverable	7440417	0.5	GFAA
			2	ICP
			0.5	ICPMS
			1	SGFAA
4	Cadmium, Total Recoverable	7440439	0.25	ICPMS
5a	Chromium (III), Total Recoverable	16065831	--	--
5b	Chromium (VI), Total Recoverable	18540299	5	FAA
			10	COLOR
6	Copper, Total Recoverable	7440508	0.5	ICPMS
7	Lead, Total Recoverable	7439921	0.5	ICPMS
8	Mercury, Total Recoverable	7439976	0.2	CVAA
9	Nickel, Total Recoverable	7440020	1	ICPMS
10	Selenium, Total Recoverable	7782492	5	GFAA
			2	ICPMS
			5	SGFAA
			1	HYDRIDE
11	Silver, Total Recoverable	7440224	0.25	ICPMS
12	Thallium, Total Recoverable	7440280	1	ICPMS
13	Zinc, Total Recoverable	7440666	1	ICPMS
14	Cyanide, Total (as CN)	57125	5	COLOR
15	Asbestos	1332214	-- (MFL)	--
16	2,3,7,8-TCDD (Dioxin)	1746016	--	--
17	Acrolein	107028	2.0	GC
			5	GCMS
18	Acrylonitrile	107131	2.0	GC
			2	GCMS
19	Benzene	71432	0.5	GC
20	Bromoform	75252	0.5	GC
			2	GCMS
21	Carbon tetrachloride	56235	0.5	GC
22	Chlorobenzene (mono chlorobenzene)	108907	0.5	GC
			2	GCMS
23	Dibromochloromethane (Chlorodibromomethane)	124481	0.5	GC
24	Chloroethane	75003	0.5	GC
			2	GCMS
25	2-Chloroethyl vinyl ether	110758	1	GC
			1	GCMS

CTR#	Constituent	CAS Number	Reporting Level (µg/L or noted)	Associated Analytical Method Type[1]
26	Chloroform	67663	0.5	GC
			2	GCMS
27	Dichlorobromomethane (Bromodichloromethane)	75274	0.5	GC
28	1,1-Dichloroethane	75343	0.5	GC
			1	GCMS
29	1,2-Dichloroethane	107062	0.5	GC
30	1,1-Dichloroethylene	75354	0.5	GC
31	1,2-Dichloropropane	78875	0.5	GC
32	1,3-Dichloropropylene	542756	0.5	GC
33	Ethylbenzene	100414	0.5	GC
			2	GCMS
34	Bromomethane (Methyl Bromide)	74839	1.0	GC
			2	GCMS
35	Chloromethane (Methyl Chloride)	74873	0.5	GC
			2	GCMS
36	Dichloromethane (Methylene Chloride)	75092	0.5	GC
			2	GCMS
37	1,1,2,2-Tetrachloroethane	79345	0.5	GC
38	Tetrachloroethylene	127184	0.5	GC
39	Toluene	108883	0.5	GC
			2	GCMS
40	trans-1,2-Dichloroethylene	156605	0.5	GC
			1	GCMS
41	1,1,1-Trichloroethane	71556	0.5	GC
			2	GCMS
42	1,1,2-Trichloroethane	79005	0.5	GC
43	Trichloroethylene	79016	0.5	GC
			2	GCMS
44	Vinyl chloride	75014	0.5	GC
45	2-Chlorophenol	95578	2	GC
			5	GCMS
46	2,4-Dichlorophenol	120832	1	GC
			5	GCMS
47	2,4-Dimethylphenol	105679	1	GC
			2	GCMS
48	4,6-Dinitro-2-methylphenol	534521	10	GC
			5	GCMS
49	2,4-Dinitrophenol	51285	5	GC
			5	GCMS
50	2-Nitrophenol	25154557	10	GCMS
51	4-Nitrophenol	100027	5	GC
			10	GCMS
52	4-Chloro-3-methylphenol	59507	5	GC
			1	GCMS
53	Pentachlorophenol	87865	1	GC
54	Phenol	108952	1	GC
			1	GCMS
			50	COLOR

CTR#	Constituent	CAS Number	Reporting Level (µg/L or noted)	Associated Analytical Method Type[1]
55	2,4,6-Trichlorophenol	88062	10	GC
			10	GCMS
56	Acenaphthene	83329	1	GC
			1	GCMS
			0.5	LC
57	Acenaphthylene	208968	10	GCMS
			0.2	LC
58	Anthracene	120127	10	GCMS
			2	LC
59	Benzidine	92875	5	GCMS
60	1,2-Benzanthracene (Benzo(a)anthracene)	56553	5	GCMS
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	2	LC
62	3,4-Benzofluoranthene (Benzo(b)fluoranthene)	205992	10	GCMS
			10	LC
63	Benzo(g,h,i)perylene	191242	5	GCMS
			0.1	LC
64	Benzo(k)fluoranthene	207089	2	LC
65	Bis(2-chloroethoxy) methane	111911	5	GCMS
66	Bis(2-chloroethyl) ether	111444	1	GCMS
67	Bis(2-chloroisopropyl) ether	39638329	10	GC
			2	GCMS
68	Bis(2-ethylhexyl) phthalate	117817	5	GCMS
69	4-Bromophenyl phenyl ether	101553	10	GC
			5	GCMS
70	Butyl benzyl phthalate	85687	10	GC
			10	GCMS
71	2-Chloronaphthalene	91587	10	GCMS
72	4-Chlorophenyl phenyl ether	7005723	5	GCMS
73	Chrysene	218019	5	LC
74	Dibenzo(a,h)anthracene	53703	0.1	LC
75	1,2-Dichlorobenzene (volatile)	95501	0.5	GC
			2	GCMS
75	1,2-Dichlorobenzene (semi-volatile)	95501	2	GC
			2	GCMS
76	1,3-Dichlorobenzene (volatile)	541731	0.5	GC
			2	GCMS
76	1,3-Dichlorobenzene (semi-volatile)	541731	2	GC
			1	GCMS
77	1,4-Dichlorobenzene (volatile)	106467	0.5	GC
			2	GCMS
77	1,4-Dichlorobenzene (semi-volatile)	106467	2	GC
			1	GCMS
78	3,3'-Dichlorobenzidine	91941	5	GCMS
79	Diethyl phthalate	84662	10	GC
			2	GCMS
80	Dimethyl phthalate	131113	10	GC
			2	GCMS
81	Di-n-butyl phthalate	84742	10	GCMS

CTR#	Constituent	CAS Number	Reporting Level (µg/L or noted)	Associated Analytical Method Type[1]
82	2,4-Dinitrotoluene	121142	5	GCMS
83	2,6-Dinitrotoluene	606202	5	GCMS
84	Di-n-octyl phthalate	117840	10	GCMS
85	1,2-Diphenylhydrazine	122667	1	GCMS
86	Fluoranthene	206440	10	GC
			1	GCMS
			0.05	LC
87	Fluorene	86737	10	GCMS
			0.1	LC
88	Hexachlorobenzene	118741	1	GCMS
89	Hexachlorobutadiene	87683	1	GCMS
90	Hexachlorocyclopentadiene	77474	5	GC
			5	GCMS
91	Hexachloroethane	67721	1	GCMS
92	Indeno(1,2,3-c,d)pyrene	193395	0.05	LC
93	Isophorone	78591	1	GCMS
94	Naphthalene	91203	10	GC
			1	GCMS
			0.2	LC
95	Nitrobenzene	98953	10	GC
			1	GCMS
96	N-Nitrosodimethylamine	62759	5	GCMS
97	N-Nitrosodi-n-propylamine	621647	5	GCMS
98	N-Nitrosodiphenylamine	86306	1	GCMS
99	Phenanthrene	85018	5	GCMS
			0.05	LC
100	Pyrene	129000	10	GCMS
			0.05	LC
101	1,2,4-Trichlorobenzene	120821	1	GC
			5	GCMS
102	Aldrin	309002	0.005	GC
103	alpha-Hexachlorocyclohexane (BHC)	319846	0.01	GC
104	beta-BHC	319857	0.005	GC
105	Lindane (gamma-BHC)	58899	0.02	GC
106	delta-BHC	319868	0.005	GC
107	Chlordane	57749	0.1	GC
108	4,4'-DDT	50293	0.01	GC
109	4,4'-DDE	72559	0.05	GC
110	4,4'-DDD	72548	0.05	GC
111	Dieldrin	60571	0.01	GC
112	alpha-Endosulfan (Endosulfan I)	959988	0.02	GC
113	beta-Endosulfan (Endosulfan II)	33213659	0.01	GC
114	Endosulfan sulfate	1031078	0.05	GC
115	Endrin	72208	0.01	GC
116	Endrin Aldehyde	7421934	0.01	GC
117	Heptachlor	76448	0.01	GC
118	Heptachlor Epoxide	1024573	0.01	GC
119	PCB-1242	53469219	0.5	GC

CTR#	Constituent	CAS Number	Reporting Level (µg/L or noted)	Associated Analytical Method Type[1]
120	PCB-1254	11097691	0.5	GC
121	PCB-1221	11104282	0.5	GC
122	PCB-1232	11141165	0.5	GC
123	PCB-1248	12672296	0.5	GC
124	PCB-1260	11096825	0.5	GC
125	PCB-1016	12674112	0.5	GC
126	Toxaphene	8001352	0.5	GC

[1] GC – Gas Chromatography
GCMS – Gas Chromatography/Mass Spectrometry
LC – High Pressure Liquid Chromatography
FAA – Flame Atomic Absorption
GFAA – Graphite Furnace Atomic Absorption
HYDRIDE – Gaseous Hydride Atomic Absorption
CVAA – Cold Vapor Atomic Absorption
ICP – Inductively Coupled Plasma
ICPMS – Inductively Coupled Plasma/Mass Spectrometry
SPGFAA – Stabilized Platform Graphite Furnace Atomic Absorption (i.e., EPA 200.9)
DCP – Direct Current Plasma
COLOR – Colorimetric

ATTACHMENT J – RECYCLED WATER SIGNAGE

From Title 22, California Code of Regulations, Figure 60310-A