CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

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ORDER R5-2013-0072-01
NPDES NO. CA0084620

WASTE DISCHARGE REQUIREMENTS FOR THE CALAVERAS COUNTY WATER DISTRICT SADDLE CREEK GOLF COURSE, L.P. COPPER COVE WASTEWATER RECLAMATION FACILITY CALAVERAS COUNTY

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

Table 1. Discharger Information

Discharger	Calaveras County Water District and Saddle Creek Golf Course, L.P.
Name of Facility	Copper Cove Wastewater Reclamation Facility
Facility Address	5130 Kiva Place
	Copper Cove, CA 95228
	Calaveras 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 Calaveras County Water District and Saddle Creek Golf Course, L.P., from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Tertiary Municipal Wastewater	120º 37’ 10” N	37º 54’ 55” W	Saddle Creek Golf Course Jurisdictional Wetlands

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	**31 May 2013**
This Order shall become effective on:	**20 July 2013**
This Order shall expire on:	**1 May 2018**
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:	**2 November 2017**

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 **31 May 2013**, and amended by Order R5-2016-0065 on **19 August 2016**.

ORIGINAL SIGNED BY

PAMELA C. CREEDON, Executive Officer

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I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	Calaveras County Water District and Saddle Creek Golf Course, L.P.
Name of Facility	Copper Cove Wastewater Reclamation Facility
Facility Address	5130 Kiva Place
	Copper Cove, CA 95228
	Calaveras County
Facility Contact, Title, and Phone	Mitch Dion, General Manager, (209) 754-3001
Mailing Address	P.O. Box 846, San Andreas, CA 95249
Type of Facility	Publicly Owned Treatment Works (POTW)
Facility Design Flow	0.95 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. Calaveras County Water District (CCWD) and Saddle Creek Golf Club (SCGC) (hereinafter Discharger) was authorized to discharge pursuant to Order R5-2006-0081 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0084620. The Discharger submitted a Report of Waste Discharge, dated 9 February 2011, and applied for a NPDES permit renewal to discharge up to 0.95 MGD of treated wastewater from the Copper Cove Wastewater Reclamation Facility, hereinafter Facility. The application was deemed complete on 8 December 2011.

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 POTW. The treatment system consists of a headworks, two aerated ponds (Ponds 1 and 2) operated in parallel, an additional aerated pond (Pond 4) for settling and polishing, followed by tertiary filtration and ultraviolet light (UV) disinfection. Pond 3 is currently out of service and Pond 5 is only used for emergencies. Disinfected, tertiary treated wastewater is stored on-site in an unlined storage reservoir (Pond 6), which may then be land applied via spray irrigation on CCWD’s 35 acres of spray irrigation fields. The Facility and on-site spray disposal are regulated under separate Waste Discharge Requirements (WDR) Order R5-2010-0070.

During the discharge season, 1 April through 31 December, wastewater from Pond 6 is collected in a reclaimed water storage tank and discharged to the SCGC receiving pond (Pond NC-2D) for golf course irrigation. When the demand for irrigation water exceeds the supply of recycled water, CCWD provides raw water from Lake Tulloch, which is piped to the recycled water storage tank where it commingles with recycled water, if

present, and then discharged to Pond NC-2D. The Title 22 disinfected tertiary recycled water in Pond NC-2D is used for golf course irrigation or to provide makeup water for the jurisdictional wetland system, as described below.

The jurisdictional wetland system is regulated by a US Army Corps of Engineers Clean Water Act Section 404 permit (404 permit). The wetland system also includes several man-made and natural lakes, including Mitchell Lake. The 404 permit requires that all ponds and wetland areas have a continuous supply of water to maintain minimum levels. Therefore, SCGC uses water in Pond NC-2D when necessary to supply make-up water to the wetlands, excluding Mitchell Lake which is tributary to Littlejohns Creek.

The Facility discharges tertiary treated wastewater to Discharge Point No. 001 (see table on cover page) to Pond NC-2D, and at times this water is discharged to the jurisdictional wetlands, waters of the United States, within the Middle San Joaquin, Lower Merced, Lower Stanislaus Watershed.

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 I are also incorporated into this Order.

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

F. Technology-based Effluent Limitations. Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations (40 CFR 122.44), require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR Part 133. 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, Fourth Edition (Revised October 2011)*, for the Sacramento and San Joaquin River Basins (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. The Basin Plan at page II-2.00 states that the "…*beneficial uses of any specifically identified water body generally apply to its tributary streams*." Table II-1 of the Basin Plan identifies the beneficial uses of certain specific water bodies. The Basin Plan does not specifically identify beneficial uses for the jurisdictional wetlands, but does identify present and potential uses in Table II-1 for San Joaquin River within the Sacramento-San Joaquin Delta, to which the jurisdictional wetlands are tributary via Littlejohns Creek. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Thus, as discussed in detail in the Fact Sheet, beneficial uses applicable to the jurisdictional wetlands are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Jurisdictional Wetlands	Existing uses from Table II-1 of the Basin Plan: Municipal and domestic supply (MUN); Agricultural supply, including irrigation and stock watering (AGR); Industrial process supply (PROC); Industrial service supply (IND); Water contact recreation (REC-1) Non-contact water recreation (REC-2); Warm freshwater habitat (WARM); Cold freshwater habitat (COLD); Migration of aquatic organisms, warm and cold (MIGR); Spawning, reproduction, and/or early development, warm (SPWN); Wildlife habitat (WILD); and Navigation (NAV). Suitable uses from State Water Board Resolution No. 88-63: Municipal and domestic supply (MUN).
--	Groundwater	Existing: Municipal and domestic supply (MUN); Agricultural supply, including irrigation and stock watering (AGR); Industrial process supply (PROC); and Industrial service supply (IND).

The Basin Plan includes a list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.)*." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to WQLSs. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." The jurisdictional wetlands are not listed on the 303(d) list as impaired.

Requirements of this Order implement the Basin Plan.

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

J. State Implementation Policy. On 2 March 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on 28 April 28 2000 with respect to the priority pollutant criteria

promulgated for California by USEPA through the NTR and to the priority pollutant objectives established by the Central Valley Water Board in the Basin Plan. The SIP became effective on 18 May 2000 with respect to the priority pollutant criteria promulgated by USEPA through the CTR. The State Water Board adopted amendments to the SIP on 24 February 2005 that became effective on 13 July 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

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

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

Where a compliance schedule for a final effluent limitation exceeds one year, the Order must include interim numeric limitations for that constituent or parameter, interim milestones and compliance reporting within 14 days after each interim milestone. The permit may also include interim requirements to control the pollutant, such as pollutant minimization and source control measures. This Order does not include compliance schedules 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 technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on flow and percent removal requirements for 5-day biochemical oxygen demand (BOD_5) and total suspended solids (TSS). The WQBELs consist of restrictions on aluminum, ammonia, BOD_5, electrical conductivity, manganese, nitrate plus nitrite, pH, total coliform organisms, and TSS. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order includes effluent limitations for BOD_5, total coliform organisms, and TSS to meet numeric objectives or protect beneficial uses.

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 [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 that those in Order R5-2006-0081. As discussed in detail in the Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

P. Endangered Species Act. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or

becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

Q. Monitoring and Reporting. 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. 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 and V.B of this Order are included to implement State law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these

provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

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

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

THEREFORE, IT IS HEREBY ORDERED, that Order R5-2006-0081 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. Surface Water Discharge Prohibitions

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

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

3. Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the Water Code.

4. Discharge of wastewater to Pond NC-2D between 1 January and 31 March is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point No. 001

1. Final Effluent Limitations – Discharge Point No. 001

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001. Compliance with the ammonia and nitrate plus nitrite effluent limitations shall be measured at Monitoring Location REC-002, with compliance with the effluent limitations for the remaining constituents measured at Monitoring Location REC-001 as described in the Monitoring and Reporting Program:

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]	79	119	158	--	--
pH	standard units	--	--	--	6.5	8.5
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day[1]	79	119	158	--	--
Non-Conventional Pollutants						
Aluminum, Total Recoverable	µg/L	310	623	--	--	--
Ammonia Nitrogen, Total (as N)	mg/L	0.74	--	2.2	--	--
	lbs/day	5.9	--	17	--	--
Electrical Conductivity @ 25°C	µmhos/cm	900	--	--	--	--
Manganese, Total Recoverable	µg/L	97	242	--	--	--
Nitrate Plus Nitrite (as N)	mg/L	10	--	--	--	--

[1] Mass-based effluent limitations are based on a flow of 0.95 MGD.

b. Percent Removal. The average monthly percent removal of BOD_5 and TSS shall not be less than 85 percent.

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

i. 70%, minimum for any one bioassay; and
ii. 90%, median for any three consecutive bioassays.

d. Chronic Whole Effluent Toxicity. There shall be no chronic toxicity in the effluent discharge.

e. Total Coliform Organisms. Effluent total coliform organisms 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. Flow. The maximum daily effluent flow shall not exceed 0.95 MGD.

2. Interim Effluent Limitations – Not Applicable

B. Land Discharge Specifications – Set forth in WDR Order R5-2010-0070

C. Water Reclamation Requirements

1. Reclamation Prohibitions

a. The use of recycled water in a manner different than described in this Order is prohibited.

b. The use of recycled water, pursuant to this Order, for individually owned residences is prohibited.

c. In conformance with Title 22 Requirements, recycled water shall not be used for direct human consumption or for the processing of food or drink intended for human consumption.

d. The use of recycled water on water-saturated or frozen ground or during periods of precipitation such that runoff is induced, is prohibited.

e. The application of recycled water within 50 feet of a domestic well, and impoundment of recycled water within 100 feet of a domestic well, unless approved by the California Department of Public Health (DPH), is prohibited.

f. Use or installation of hose bibs in areas accessible by the public on any irrigation system presently operating or designed to operate with recycled water, regardless of construction or identification, is prohibited.

g. Use of any equipment or facilities that have been used to convey recycled water (e.g., tanks, temporary piping or valves, and portable pumps) also used for potable water supply conveyance, is prohibited.

h. The discharge or use of recycled water in a manner that causes or contributes to an exceedance of an applicable water quality objective is prohibited.

i. The use of recycled water for landscape irrigation shall not cause or threaten to cause pollution or nuisance as defined in Water Code section 13050.

2. Reclamation Specifications

a. Recycled water shall be managed in conformance with the applicable regulations contained in the Title 22 Requirements.

b. All recycled water provided to Users pursuant to this Order, shall be treated in and managed in conformance with all applicable provisions of the State Water Board's Recycled Water Policy[1].

c. The recycled water shall meet the standards for disinfected tertiary recycled water as described in CCR Title 22, sections 60301.230 and 60301.320.

d. Application of recycled water on the Saddle Creek Golf Course (Use Area) shall be at reasonable agronomic rates and shall consider soil, climate, and nutrient demand. Application rates shall ensure that a nuisance is not created. Degradation of groundwater, considering soil, climate, and nutrient demand, shall be minimized consistent with applicable provisions of the Recycled Water Policy.

e. The seasonal nutritive loading of the Use Area including the nutritive value of organic and chemical fertilizers and of the recycled water, shall not exceed the nutritive demand of the landscape.

f. The portions of the Use Area that are spray irrigated and allow public access shall be irrigated during periods of minimal use. Consideration shall be given to allow maximum drying time prior to subsequent public use.

g. All newly installed or any accessible reclamation equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities. All newly installed or any accessible reclamation distribution system piping shall be purple or adequately identified with purple tape, tags, or stickers per Section 116815(a) of the California Health and Safety Code.

h. Except as allowed under CCR Title 17, Section 7604, no physical connection shall be made or allowed to exist between any recycled water system and any separate system conveying potable water. Supplementing recycled water with potable water shall not be allowed except as approved by the California Department of Public Health (CDPH).

i. A 4-foot horizontal and 1-foot vertical separation[2] shall be maintained between all new pipelines transporting recycled water and those transporting domestic water, unless approved by CDPH. Domestic water pipelines shall be configured above recycled water pipelines, unless approved by CDPH.

j. All recycled water valves, outlets, and quick couplers should be of a type or secured in a manner that only permits operation by authorized personnel.

k. The main shutoff valve of the recycled water meter shall be tagged with a recycled water warning sign. The valve shall be equipped with an appropriate locking device to prevent unauthorized operation of the valve.

[1] State Water Board Resolution No. 2009-0011 adopted 3 February 2009.
[2] As measured from the nearest outside edge of the respective pipelines.

l. Except where CDPH has approved alternative signage and wording or an educational program pursuant to Title 22 Requirements, (1) 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 four inches high by eight inches wide that include the following wording "RECYCLED WATER-DO NOT DRINK", and (2) each sign shall display an international symbol similar to that shown in Attachment J.

m. Spray, mist, or runoff of recycled water shall not enter dwellings, designated outdoor eating areas, or food handling facilities. Drinking water fountains shall be protected against contact with recycled water spray, mist or runoff.

n. Recycled water shall be managed to minimize contact with workers.

o. Best Management Practices (BMPs) shall be developed and implemented to achieve a safe and efficient irrigation system. At a minimum, the Discharger shall implement the BMPs identified in subsections i – iii, below:

i. Implementation of operations and management plan that provides for detection of leaks, and correction either within 72 hours of learning of a leak, or prior to the release of 1,000 gallons.

ii. Proper design and operation of sprinkler heads.

iii. Refraining from application during precipitation events.

p. Recycled water shall not be allowed to escape from the Use Area by overspray, mist or by surface flow except in minor amounts such as that associated with BMPs for good irrigation practices.

q. Areas irrigated with recycled water shall be managed to prevent ponding and conditions conducive to the proliferation of mosquitoes and other vectors, and to avoid creation of a public nuisance or health hazard. The following practices shall be implemented, at a minimum:

i. Irrigation water must infiltrate completely within a 48-hour period.

ii. Ditches receiving irrigation runoff, not serving as wildlife habitat, shall be maintained free of emergent, marginal, and floating vegetation.

iii. Low-pressure and unpressurized pipelines and ditches that may be accessible to mosquitoes shall not be used to store recycled water.

r. The Discharger shall discontinue delivery of recycled water during any period in which there is reason to believe that the requirements for use as specified herein or the requirements of CDPH are not being met. The delivery of recycled water shall not resume until all conditions have been corrected.

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 the jurisdictional wetlands and Littlejohns Creek:

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;

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

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

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

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

10. Radioactivity:

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

b. Radionuclides to be present in excess of the maximum contaminant levels (MCLs) specified in Table 64442 of section 64442 and Table 64443 of section 64443 of Title 22 of the California Code of Regulations.

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

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

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

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

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

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

17. Turbidity

a. Shall not exceed 2 Nephelometric Turbidity Units (NTU) where natural turbidity is less than 1 NTU;

b. Shall not increase more than 1 NTU where natural turbidity is between 1 and 5 NTUs;

c. Shall not increase more than 20 percent where natural turbidity is between 5 and 50 NTUs;

d. Shall not increase more than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor

e. Shall not increase more than 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations

1. Discharges to the golf course irrigation area and Pond NC-2D shall not cause groundwater to contain constituents in concentrations greater than applicable water quality objectives or natural background quality, whichever is greater.

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 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, maximum daily effluent limitation, 1-hour average effluent limitation, or receiving water limitation contained in this Order, the Discharger shall notify the Central Valley Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 5 days, unless the Central Valley Water Board waives confirmation. The written notification shall include the information required by the Standard Provision contained in Attachment D section V.E.1. [40 CFR 122.41(l)(6)(i)].

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

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

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

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 Workplan, 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 Workplan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. Toxicity Reduction Evaluation (TRE) Workplan. By **1 September 2013**, the Discharger shall submit to the Central Valley Water Board a TRE Workplan for approval by the Executive Officer. The TRE Workplan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE Workplan must be developed in accordance with USEPA guidance[1] and be of adequate detail to allow the Discharger to immediately initiate a TRE as required in this Provision.

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). 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 conducted once every 2 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

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

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 plant 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.

b. Pond NC-2D Management Plan. By **1 September 2013**, the Discharger shall update and submit the Pond Management Plan describing how Pond NC-2D will be managed consistent with the 404 permit.

3. Best Management Practices and Pollution Prevention

a. Salinity Evaluation and Minimization Plan. The Discharger shall prepare a salinity evaluation and minimization plan to identify and address sources of salinity from the Facility. The plan shall be completed and submitted to the Central Valley Water Board by **1 March 2014** for the approval by the Executive Officer.

4. Construction, Operation, and Maintenance Specifications

a. UV Disinfection System Operating Specifications. The Discharger shall operate the UV disinfection system to provide a minimum hourly UV dose per channel of 100 millijoules per square centimeter (mJ/cm^2) at peak daily flow and shall maintain an adequate dose for disinfection while discharging to Pond NC-2D, unless otherwise approved by the DPH or the Executive Officer.

i. The Discharger shall provide continuous, reliable monitoring of flow, UV transmittance, UV power, and turbidity.

ii. Turbidity. The Discharger shall operate the treatment system to insure that turbidity prior to disinfection, measured at UVS-001, shall not exceed:

(a) 2 NTU as a daily average;

(b) 5 NTU more than 5 percent of the time within a 24-hour period; and

(c) 10 NTU, at any time.

iii. The UV transmittance (at 254 nanometers) in the wastewater exiting the UV disinfection system shall not fall below 55 percent of maximum at any time.

iv. The quartz sleeves and cleaning system components must be visually inspected per the manufacturer's operations manual for physical wear (scoring, solarization, seal leaks, cleaning fluid levels, etc.) and to check the efficacy of the cleaning system.

v. The lamp sleeves must be cleaned periodically as necessary to meet the requirements.

vi. Lamps must be replaced per the manufacturer's operations manual, or sooner, if there are indications the lamps are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained.

vii. The Facility must be operated in accordance with an operations and maintenance program that assures adequate disinfection.

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 (Section IV.A.1.a and IV.A.1.b). Compliance with the final effluent limitations for BOD_5 and TSS required in Limitations and Discharge Requirements section IV.A.1.a shall be ascertained by 24-hour composite samples. Compliance with effluent limitations required in Limitations and Discharge Requirements section IV.A.1.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. Aluminum Effluent Limitations (Section IV.A.1.g). Compliance with the final effluent limitations for aluminum can be demonstrated 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.

C. Total Coliform Organisms Effluent Limitations (Section IV.A.1.f). For each day that an effluent sample is collected and analyzed for total coliform organisms, 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 organisms exceeds a most probable number (MPN) of 2.2 per 100 milliliters, the Discharger will be considered out of compliance.

D. Mass Effluent Limitations. The mass effluent limitations contained in the Final Effluent Limitations IV.A.1.a are based on the permitted flow and calculated as follows:

Mass (lbs/day) = Flow (MGD) x Concentration (mg/L) x 8.34 (conversion factor)

If the effluent flow exceeds the permitted flow during wet-weather seasons, the effluent mass limitations contained in Final Effluent Limitations IV.A.1.a shall not apply. If the effluent flow is below the permitted average dry weather flow during wet-weather seasons, the effluent mass limitations do apply.

E. 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. Dischargers 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. Dischargers 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 and the discharger conducts a PMP (as described in section 2.4.5.1), the discharger shall not be deemed out of compliance.

F. Chronic Whole Effluent Toxicity Effluent Limitation (Section IV.A.1.e). Compliance with the accelerated monitoring and TRE provisions of Provision VI.C.2.a shall constitute compliance with the effluent limitation.

G. Reporting Due Dates. Reporting requirements shall be in accordance with due dates specified in this Order. If the due date is on a Saturday, Sunday, State holiday, or a day the corresponding Water Board(s) office(s) is(are) closed, the due date shall be on the next business day.

ATTACHMENT A – DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Method Detection Limit (MDL)
MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR Part 136, Appendix B, revised as of 14 May 1999.

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

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

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

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

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

Pollutant Minimization Program (PMP)
Pollutant minimization 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 PMP shall be prepared in accordance with section 2.4.5.1 of the SIP. The completion and implementation of a Pollution Prevention Plan, 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 or Regional Water Board.

Reporting Level (RL)
The RL is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the RL depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied in the computation of the RL.

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

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

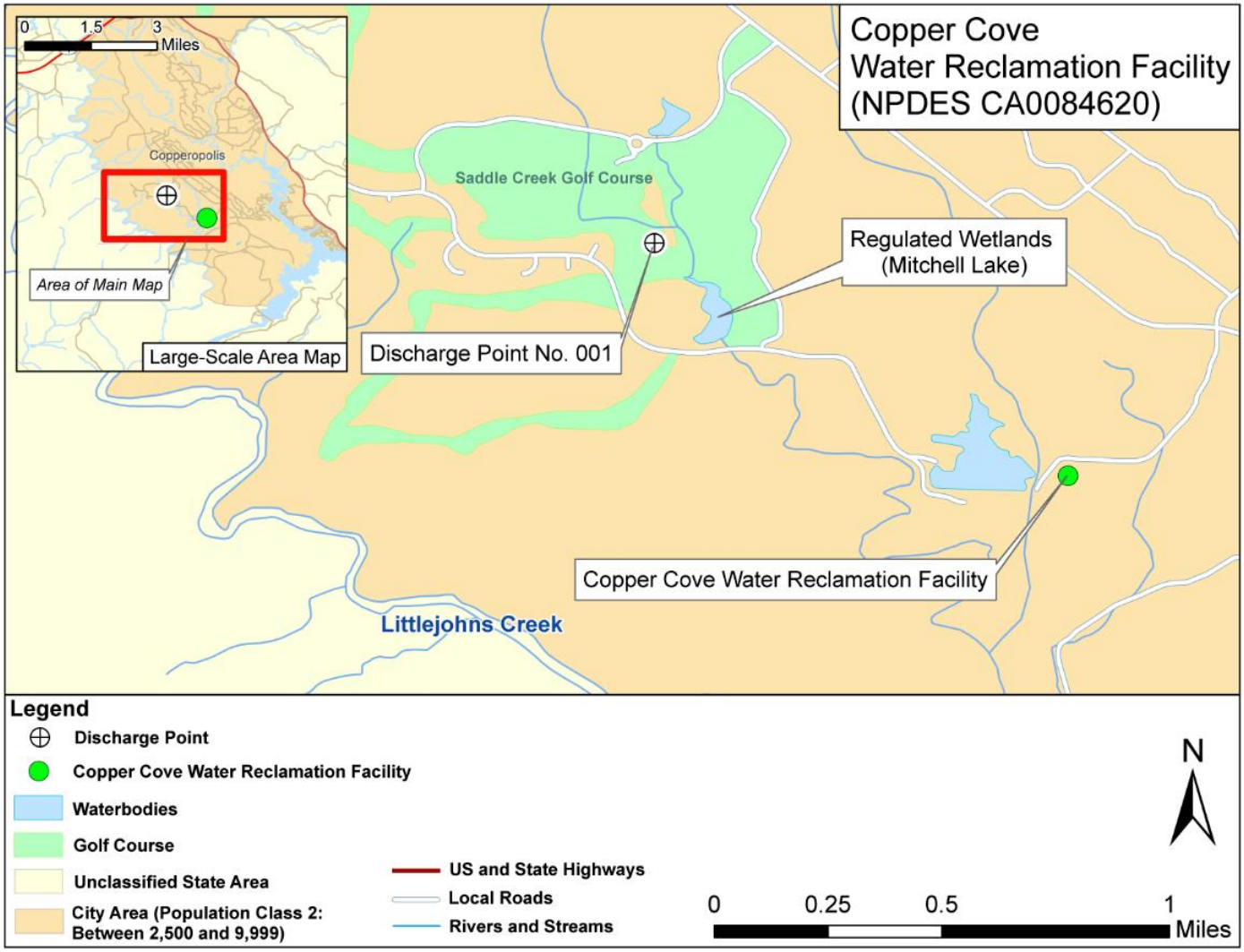
Standard Deviation (σ)
Standard Deviation is a measure of variability that is calculated as follows:

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

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.)

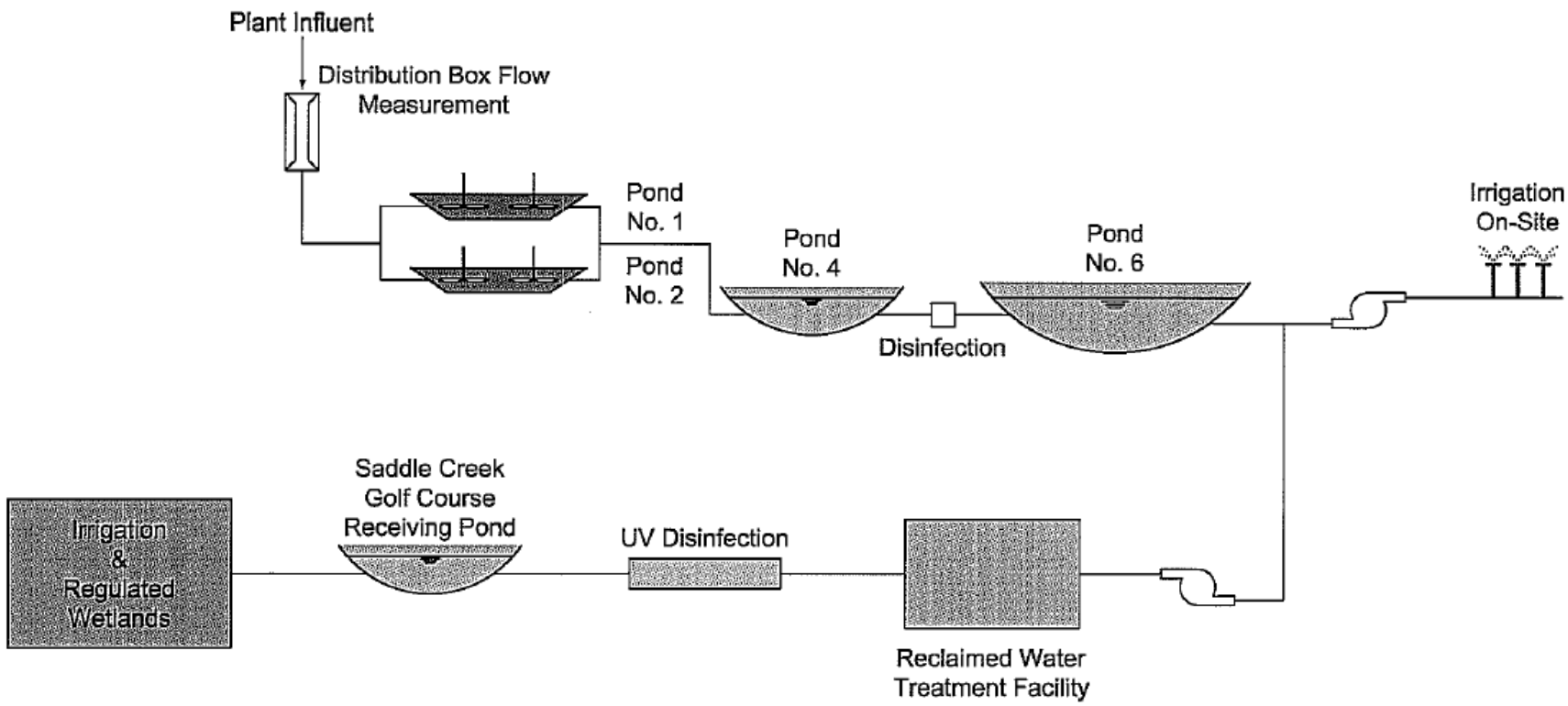
ATTACHMENT B – MAPS



SITE LOCATION MAP

CALAVERAS COUNTY WATER DISTRICT AND SADDLE CREEK GOLF COURSE, L.P.
COPPER COVE WASTEWATER RECLAMATION FACILITY
CALAVERAS COUNTY

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

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

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

5. 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));

6. 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));

7. 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

8. 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 Regional 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 Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR 122.41(m)(4)(i)(C))

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

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 Regional Water Board. The Regional 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 Regional Water Board Executive Officer at any time. (40 CFR 122.41(j)(2))

B. Records of monitoring information shall include:

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

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

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

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

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

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

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

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

B. Signatory and Certification Requirements

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

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

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

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

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

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

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

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

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

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

C. Monitoring Reports

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

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

3. If the 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 Regional Water Board. (40 CFR 122.41(l)(4)(ii))

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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

F. Planned Changes

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source 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 previous 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 Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 CFR 122.41(l)(2))

H. Other Noncompliance

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 CFR 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 CFR 122.42(b)(1)); and

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 CFR 122.42(b)(2))

3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
(40 CFR 122.42(b)(3).

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location where a representative sample of the influent into the Facility at the headworks can be obtained, prior to entry into any treatment process.
001	REC-001	At a location where a representative sample of the tertiary treated effluent can be obtained, after final treatment and prior to commingling with raw water from Lake Tulloch in the recycled water storage tank.
--	UVS-001	Ultraviolet Light (UV) Disinfection System
001	REC-002	A location in Pond NC-2D where a representative sample of water being used to irrigate the SCGC Jurisdictional Wetlands can be obtained.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. When discharging to Pond NC-2D, 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]
pH	standard units	Meter	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/Week	[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.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location REC-001 and REC-002

1. When discharging to Pond NC-2D, the Discharger shall monitor tertiary treated effluent at Monitoring Location REC-001 and the water being used to irrigate the SCGC Jurisdictional Wetlands at monitoring location REC-002 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level. Where a CTR constituent is listed in Appendix 4 of the SIP, the reporting level specified in Attachment I must be achieved by the laboratory conducting the analysis.

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method	Monitoring Location
Flow	MGD	Meter	Continuous	--	REC-001
Conventional Pollutants					
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	24-hr Composite[1]	1/Week	[2]	REC-001
	lbs/day	Calculate	1/Week	--	
pH	standard units	Meter	Continuous[3]	[2,4]	REC-001
Total Suspended Solids	mg/L	24-hr Composite[1]	1/Week	[2]	REC-001
	lbs/day	Calculate	1/Week	--	

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method	Monitoring Location
Priority Pollutants					
Priority Pollutants and Other Constituents of Concern	µg/L	See Attach. I	See Attach. I	[2,5]	
Non-Conventional Pollutants					
Aluminum, Total Recoverable	µg/L	24-hr Composite[1]	1/Month	[2]	REC-001
Ammonia Nitrogen, Total (as N)	mg/L	Grab	1/Week[3,6]	[2]	REC-002
	lbs/day	Calculate	1/Week[3,6]	--	
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Week	[2]	REC-001
Hardness, Total (as $CaCO_3$)	mg/L	Grab	1/Month	[2]	REC-001
Manganese, Total Recoverable	mg/L	24-hr Composite[1]	1/Month	[2]	REC-001
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/Month[7]	[2]	REC-002
Nitrite Nitrogen, Total (as N)	mg/L	Grab	1/Month[7]	[2]	REC-002
Oil and Grease	mg/L	Grab	1/Quarter[8]	[2]	REC-001
Temperature	°F	Grab	1/Week[3]	[2,4]	REC-001
Total Coliform Organisms	MPN/100 mL	Grab	1/Day[9]	[2]	REC-001

[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] pH and temperature shall be recorded at the time of ammonia sample collection.
[4] 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.
[5] The maximum Reporting Level (RL) is specified in Attachment I, Table I-1, Priority Pollutants and Other Constituents of Concern.
[6] Concurrent with whole effluent toxicity monitoring.
[7] Monitoring for nitrate and nitrite shall be conducted concurrently.
[8] Oil and grease shall be monitored quarterly for the first 2 years following the date of permit adoption at Monitoring Location REC-001.
[9] Samples for total coliform organisms may be collected at any point following disinfection..

2. If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record for all of the constituents listed above, except for priority pollutants, 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 the schedule.

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 acute toxicity testing, concurrent with effluent ammonia sampling.

2. *Sample Types* – The Discharger may use flow-through, static non-renewal or static renewal testing. For static non-renewal and static renewal testing, 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 REC-001.

3. *Test Species* – Test species shall be fathead minnows (*Pimephales promelas*) or rainbow trout (*Oncorhchus mykiss)*.

4. *Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. 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.

5. *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 annual three species chronic toxicity testing.

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 REC-001. The receiving water control shall be a grab sample obtained from Monitoring Location PND-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. *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.

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 TRE monitoring, the chronic toxicity testing shall be performed using the dilution series identified in Table E-4, below, unless use of an alternative diluent is detailed in the submitted TRE Action Plan, or when the receiving water is toxic.

Table E-4. 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 *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), 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 the Special Provision at section VI. 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 the 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 results expressed in TUc, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate.

   b. The statistical methods used to calculate endpoints;

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

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

   e. 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 Toxicity Reduction Evaluation (TRE).

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports 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 Workplan, 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. RECLAMATION MONITORING REQUIREMENTS

1. Monitoring of the golf course shall be conducted as specified in the table below and the results shall be included in the monthly SMRs. Monitoring of the golf course shall include the following:

Table E-5. Reclamation Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency
Volume of Recycled Water[1,2]	acre-feet	Calculate	Monthly
Rainfall	inches	Observation	1/Day
Application Rate[3]	gal/acre/day	Calculate	Monthly
Total Nitrogen Application Rate[4,5]	lbs/acre/month	Calculate	1/Month
Salinity Application Rate[6]	lbs/acre/month	Calculate	1/Month

[1] Estimation of the volume of recycled water shall not include other potable or non-potable "make-up" water also used to irrigate landscape, if any.
[2] May be estimated based on daily percentage of recycled water supplied via a non-potable water supply system.
[3] May be estimated based on available data
[4] Nitrogen application rate shall consider nutrients contained in the recycled water, based on monthly analytical data measured at REC-001.
[5] Nitrogen concentrations shall be calculated and reported "as N.".
[6] Salinity application rate shall be calculated using the applied volume of recycled, actual application area, the most recent results for the concentration of total dissolved solids in the recycled water measured at REC-001.

2. The entire irrigated area shall be inspected at least monthly during or immediately following an irrigation event 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 waste discharge requirements. Evidence of erosion, saturation, irrigation runoff, or the presence of nuisance conditions shall be evaluated. A daily log of these inspections shall be kept at the Facility and made available for review upon request.

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER – NOT APPLICABLE

IX. OTHER MONITORING REQUIREMENTS

A. Municipal Water Supply

Water supply monitoring requirements for the Facility are contained in Order R5-2010-0070.

B. UV Disinfection System

1. Monitoring Location UVS-001

The Discharger shall monitor the UV disinfection system at Monitoring Location UVS-001 as follows:

Table E-6. UV Disinfection System Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Meter	Continuous[1]
Turbidity	NTU	Meter[2]	Continuous[1,3]
Number of UV banks in operation	Number	Meter	Continuous[1]
UV Transmittance	Percent (%)	Meter	Continuous[1]
UV Power Setting	Percent (%)	Meter	Continuous[1]
UV Dose[4]	MW-sec/cm ^{2}	Calculated	Continuous[1]

[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. If analyzer(s) fail to provide continuous monitoring for more than two hours and influent and/or effluent from the disinfection process is not diverted for retreatment, the Discharger shall obtain and report hourly manual and/or grab sample results. The Discharger shall not decrease power settings or reduce the number of UV lamp banks in operation while the continuous analyzers are out of service and water is being disinfected.

[2] The turbidity meter shall be stationed immediately after the filters, prior to the UV disinfection process.

[3] Report daily average and maximum turbidity.

[4] Report daily minimum hourly UV dose and daily average UV dose. The daily minimum hourly UV dose shall consist of lowest hourly average dose provided in any channel that had at least one bank of lamps operating during the hour interval. For channels that did not operate for the entire hour interval, the dose shall be averaged based on the actual operation time.

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.

5. Reporting requirements shall be in accordance with due dates specified in this Order. If the due date is on a Saturday, Sunday, or a day the corresponding Water Board(s) office(s) is(are) closed, the due date shall be on the next business day.

B. Self Monitoring Reports (SMRs)

1. The Discharger shall continue to submit eSMRs using the State Water Board's CIWQS Program Web site (http:www.waterboards.ca.gov/ciwqs/index.html). 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.

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

Table E-7. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with monthly SMR
1/Day	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
1/Week	Permit effective date	Sunday through Saturday	Submit with monthly SMR
1/Month	Permit effective date	First day of calendar month through last day of calendar month	Submit with monthly SMR
1/Quarter	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/Year	Permit effective date	1 January through 31 December	February 1
1 / Permit Term	Permit effective date	Once during the third or fourth year following the date of permit adoption	First day of second calendar month following month of sampling.

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

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

   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 RL 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 laboratory(ies) may, as allowed for by the rules governing alterations to minimum level (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.

4. **Multiple Sample Data.** When determining compliance with an AMEL 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.

5. **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., discharge specifications, receiving water limitations, special provisions, etc.).

   b. Reports must clearly show when discharging to Discharge Point No. 001 or other permitted discharge locations. Reports must show the date and time 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.

6. **Calculation Requirements.** The following shall be calculated and reported in the SMRs:

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

   Mass Loading (lbs/day) = Flow (MGD) x Concentration (mg/L) x 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 Organisms Effluent Limitations. The Discharger shall calculate and report the 7-day median of total coliform organisms for the effluent. The 7-day median of total coliform organisms shall be calculated as specified in Section VII.C. of the Limitations and Discharge Requirements.

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

   a. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically

submit the data in a tabular format as an attachment. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS.

b. The Discharger shall include a cover letter with the 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.

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, and TRE/TIE 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. Within 60 days of 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 section 2.3 and 2.4 of the SIP. The maximum required reporting levels 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 for inclusion in the permit. Table I-1 (Attachment I) provides required maximum reporting levels in accordance with the SIP.

3. The Discharger's sanitary sewer system collects wastewater using sewers, pipes, pumps, and/or other conveyance systems and directs the raw sewage to the wastewater treatment plant. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Sanitary sewer overflows are prohibited by this Order. All violations must be reported as required in Standard Provisions. Facilities (such as wet wells, regulated impoundments, tanks, highlines, etc.) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage facilities.

4. **Effluent Characterization Study.** An effluent monitoring study is required to ensure adequate information is available for the next permit renewal. Once during the third or fourth year following the date of permit adoption, the Discharger shall monitor the effluent at Monitoring Location REC-001 for all priority pollutants and other constituents of concern as described in Attachment I. The report shall be completed in conformance with the following schedule.

Task	Compliance Date
i. Submit Work Plan and Time Schedule	No later than 2 years 6 months from adoption of this Order. The Work plan shall include the sample type (i.e., grab or 24-hour composite), analytical method, method detection level, and reporting level.
ii. Conduct monitoring	Once during the third or fourth year following the date of permit adoption at Monitoring Location REC-001.
iii. Submit Final Report	6 months following completion of final monitoring event

5. **Annual Operations Report.** By 30 January 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 plant 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 wastewater treatment plant 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.

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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	5B05NP00001
Discharger	Calaveras County Water District and Saddle Creek Golf Course, L.P.
Name of Facility	Copper Cove Wastewater Reclamation Facility
Facility Address	5130 Kiva Place
	Copper Cove, CA 95228
	Calaveras County
Facility Contact, Title and Phone	Mitch Dion, General Manager, (209) 754-3001
Authorized Person to Sign and Submit Reports	Mitch Dion, General Manager, (209) 754-3001
Mailing Address	P.O. Box 846, San Andreas, CA 95249
Billing Address	Same as above
Type of Facility	Publicly Owned Treatment Works (POTW)
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Pretreatment Program	Not Applicable
Reclamation Requirements	Producer of Title 22 water
Facility Permitted Flow	0.95 million gallons per day (MGD)
Facility Design Flow	0.95 MGD
Watershed	Middle San Joaquin – Lower Merced – Lower Stanislaus Watershed
Receiving Water	Jurisdictional Wetlands
Receiving Water Type	Inland Surface Water

A. Calaveras County Water District (CCWD) is the owner and operator of the Copper Cove Wastewater Reclamation Facility (hereinafter Facility), a POTW. Saddle Creek Golf Course, L.P. is the owner and operator of the Saddle Creek Golf Course (SCGC). Together CCWD and SCGC are hereinafter referred to as Discharger.

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 SCGC's jurisdictional wetlands, waters of the United States, and was regulated by Order R5-2006-0081 which was adopted 3 August 2006 and expired on 1 August 2011. The terms and conditions of Order R5-2006-0081 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 9 February 2011 to discharge a maximum daily flow of 0.95 MGD of tertiary treated wastewater from the Facility. Supplemental information was submitted on 7 March 2011. A site visit was conducted on 7 February 2012 to observe operations and collect additional data to develop permit limitations and conditions.

D. This Order was amended by Order 2016-0065 on 19 August 2016 to modify the point of compliance for the effluent limitations for ammonia and nitrate plus nitrite, modify the effluent limits for aluminum and manganese, remove effluent limitations and monitoring requirements for chlorine residual and dichlorobromomethane, and remove the monitoring requirements for chloroform.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for portions of the Copper Cove Community, located in the southwestern part of Calaveras County. The sewage system has approximately 1,800 connections and serves a population of around 4,200. The current design average dry weather flow for the secondary treatment and storage system is 0.35 MGD, and the design treatment capacity of the tertiary treatment system is 0.95 MGD.

A. Description of Wastewater and Biosolids Treatment or Controls

The secondary treatment system at the Facility consists of a headworks and flow diverter, two aerated ponds (Ponds 1 and 2) operated in parallel, followed by an additional aerated pond (Pond 4) for settling and polishing, followed by tertiary filtration and ultraviolet light (UV) disinfection. Pond 3 is currently out of service and Pond 5 is only used for emergencies. Disinfected, tertiary treated wastewater is stored on-site in an unlined storage reservoir (Pond 6), which may then be land applied via spray irrigation on CCWD's 35 acres of spray irrigation fields. The collection system, secondary treatment and storage facilities, and on-site irrigation are covered under separate WDR Order R5-2010-0070.

During the discharge season, 1 April through 31 December, Title 22 tertiary treated effluent is collected in a reclaimed water storage tank and then discharged to Pond NC-2D to be used for golf course irrigation or to provide makeup water for the wetland system.

This Order allows discharges to Pond NC-2D between 1 April and 31 December of each year. CCWD only discharges to Pond NC-2D during the discharge season, however, golf course demand for irrigation water usually exceeds the supply of reclaimed water. When the demand for irrigation water exceeds the supply of recycled water, CCWD provides raw water from Lake Tulloch, which is piped to the recycled water storage tank where it commingles with recycled water, if present, and then discharged to Pond NC-2D.

Sludge treatment and control for the Facility, and land disposal of tertiary treated effluent onsite, are regulated by Order R5-2010-0070.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 26, T1N, R12E, MDB&M, as shown in Attachment B, a part of this Order.

2. The jurisdictional wetland system is regulated by a US Army Corps of Engineers Clean Water Act Section 404 permit (404 permit). The wetland system includes several man-made and natural lakes, including Mitchell Lake. The 404 permit requires that all ponds and wetland areas have a continuous supply of water to maintain minimum levels. Therefore, SCGC uses water in Pond NC-2D when necessary to supply make-up water to the other wetlands, excluding Mitchell Lake, which is tributary to Littlejohns Creek. During severe wet weather events, some of the ponds may overflow to Mitchell Lake and thence to Littlejohns Creek; however, the fraction of reclaimed water in overflows to Littlejohns Creek is expected to be minimal since reclaimed water supplemented with raw water from Lake Tulloch is used for make-up water only as necessary and will be diluted by the large amounts of storm water runoff into the ponds. Pond NC-2D does not receive irrigation or storm water runoff, as a 54-inch bypass pipe diverts runoff to another pond (Pond PM-10-D) and Mitchell Lake in order to minimize the potential for overflows of reclaimed water from Pond NC-2D to Littlejohns Creek.

   Incidental runoff from golf course irrigation may enter Littlejohns Creek at eight locations. Neither the use of reclaimed water for golf course irrigation nor the incidental runoff of excess irrigation water is considered a point source discharge to waters of the United States and do not require an NPDES permit.

3. Tertiary treated municipal wastewater is discharged at Discharge Point No. 001 to the jurisdictional wetlands, waters of the United States at a point latitude 120° 37’ 10” N and longitude 37° 54’ 55” W.

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

1. **Chlorine Disinfected Effluent.** Effluent limitations and discharge specifications contained in Order R5-2006-0081 for discharges of chlorine disinfected effluent from Discharge Point No. 001 (Monitoring Location REC-001) are as follows. The UV disinfection system went online in September 2006; therefore, no effluent data for

chlorine disinfected wastewater is available at Discharge Point No. 001 from the term of Order R5-2006-0081.

Table F-2. Historic Effluent Limitations and Monitoring Data – Chlorine Disinfection

Parameter	Units	Effluent Limitation		
		Average Monthly	Average Weekly	Maximum Daily
Flow	MGD	0.5	--	0.5
Biochemical Oxygen Demand (5-Day @ 20°C)	mg/L	10	--	20
	lbs/day	42	--	83
	% Removal	85	--	--
Total Suspended Solids	mg/L	10	--	20
	lbs/day[1]	42	--	83
	% Removal	85	--	--
Settleable Solids	ml/L	0.1	--	0.2
pH	standard units	--	--	6.5 – 8.5
Electrical Conductivity @ 25°C	µmhos/cm	900[2]	--	--
Oil & Grease	mg/L	10	--	15
	lbs/day[1]	42	--	63
Chlorodibromomethane	µg/L	--	--	6[3]
	µg/L	0.41[4]	--	0.82[4]
	lbs/day[1]	0.0017[4]	--	0.003[4]
Dichlorobromomethane	µg/L	--	--	13[3]
	µg/L	0.56[4]	--	1.13[4]
	lbs/day[1]	0.0023[4]	--	0.005[4]
Chloroform	µg/L	1.1	--	--
	lbs/day[1]	0.0046	--	--
Aluminum	µg/L	87	--	174
	lbs/day[1]	0.36	--	0.73
Iron, Total Recoverable	µg/L	300	--	--
	lbs/day[1]	1.25	--	--
Manganese, Total Recoverable	µg/L	50	--	--
	lbs/day[1]	0.21	--	--
Total Ammonia (as N)	mg/L	0.56	--	2.14[5]
	lbs/day[1]	2.33	--	--
Chlorine, Total Residual	mg/L	0.01[6]	--	0.02[5]
	lbs/day[1]	0.042[6]	--	--
Turbidity	NTU	--	5[7]	10[8]/2[9]
Total Coliform Organisms	MPN/100 mL	23[10]	2.2[11]	240[8]
Acute Toxicity	% Survival	--	--	[12]

Parameter	Units	Effluent Limitation		
		Average Monthly	Average Weekly	Maximum Daily

[1] Based upon a design treatment capacity of 0.5 MGD.
[2] Final effluent limitation effective 1 June 2009.
[3] Interim effluent limitation effective until 17 May 2010.
[4] Final effluent limitation effective 18 May 2010.
[5] Applied as a 1-hour average effluent limitation.
[6] Applied as a 4-day average effluent limitation.
[7] Not to be exceeded more than 5 percent of the time.
[8] Not to be exceeded at any time.
[9] Applied as a daily average effluent limitation.
[10] Not to be exceeded more than once in any 30-day period.
[11] Applied as a 7-day median effluent limitation.
[12] 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%

2. **UV Disinfected Effluent.** Effluent limitations and discharge specifications contained in Order R5-2006-0081 for discharges of UV disinfected effluent from Discharge Point No. 001 (Monitoring Location REC-001) and representative monitoring data from the term of Order R5-2006-0081 are as follows:

Table F-3. Historic Effluent Limitations and Monitoring Data – UV Disinfection

Parameter	Units	Effluent Limitation			Monitoring Data (From September 2006 to April 2011)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Flow	MGD	0.95	--	0.95	0.72	--	1.1
Biochemical Oxygen Demand (5-Day @ 20°C)	mg/L	10	--	20	3.74	--	6.2
	lbs/day[1]	79	--	158	23.5	--	30.3
	% Removal	85	--	--	96[2]	--	--
Total Suspended Solids	mg/L	10	--	20	<5.0	--	5.1
	lbs/day[1]	79	--	158	40.5	--	60.5
	% Removal	85	--	--	97[2]	--	--
Settleable Solids	ml/L	0.1	--	0.2	<0.1	--	<0.1
pH	standard units	--	--	6.5 – 8.5	--	--	5.8 – 8.4
Electrical Conductivity @ 25°C	µmhos/cm	900[3]	--	--	855[4]	--	--
Oil & Grease	mg/L	10	--	15	NR	--	NR
	lbs/day[1]	79	--	119	NR	--	NR
Chlorodibromomethane	µg/L	--	--	6[5]	--	--	<0.5[6]
	µg/L	0.41[7]	--	0.82[7]	<0.5[8]	--	<0.5[8]
	lbs/day[1]	0.0032[7]	--	0.0065[7]	0.0017[8]	--	0.0017[8]
Dichlorobromomethane	µg/L	--	--	13[5]	--	--	2.7[6]
	µg/L	0.56[7]	--	1.13[7]	2.9[8]	--	2.9[8]
	lbs/day[1]	0.0044[7]	--	0.0089[7]	0.0087[8]	--	0.0087[8]
Chloroform	µg/L	1.1	--	--	51	--	--
	lbs/day[1]	0.0087	--	--	0.173	--	--

Parameter	Units	Effluent Limitation			Monitoring Data (From September 2006 to April 2011)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Aluminum	µg/L	87	--	174	510	--	510
	lbs/day[1]	0.69	--	1.38	2.79	--	2.79
Iron, Total Recoverable	µg/L	300	--	--	126	--	--
	lbs/day[1]	2.4	--	--	0.82	--	--
Manganese, Total Recoverable	µg/L	50	--	--	290	--	--
	lbs/day[1]	0.4	--	--	1.91	--	--
Total Ammonia (as N)	mg/L	0.56	--	2.14[9]	4.0	--	6.4[10]
	lbs/day[1]	4.44	--	--	55	--	--
Chlorine, Total Residual	mg/L	0.01[11]	--	0.02[9]	0.12[12]	--	0.12[10]
	lbs/day[1]	0.079[11]	--	--	0.5[12]	--	--
Turbidity	NTU	--	5[13]	10[14]/2[15]	--	NR	8.19[16]/1.84[17]
Total Coliform Organisms	MPN/100 mL	23[18]	2.2[19]	240[14]	NR	NR	900[16]
Acute Toxicity	% Survival	--	--	[20]	--	--	10[2]

NR = Not Reported
[1] Based upon a design treatment capacity of 0.95 MGD.
[2] Represents the minimum value reported.
[3] Final effluent limitation effective 1 June 2009.
[4] Represents monitoring data collected after 1 June 2009.
[5] Interim effluent limitation effective until 17 May 2010.
[6] Represents monitoring data collected between 1 September 2006 and 17 May 2010.
[7] Final effluent limitation effective 18 May 2010.
[8] Represents monitoring data collected after 18 May 2010.
[9] Applied as a 1-hour average effluent limitation.
[10] Reported as a daily maximum.
[11] Applied as a 4-day average effluent limitation.
[12] Reported as a monthly average.
[13] Not to be exceeded more than 5 percent of the time.
[14] Not to be exceeded at any time.
[15] Applied as a daily average effluent limitation.
[16] Reported as a maximum.
[17] Reported as an average.
[18] Not to be exceeded more than once in any 30-day period.
[19] Applied as a 7-day median effluent limitation.
[20] 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%

D. Compliance Summary

1. The Central Valley Water Board issued a Notice of Violation (NOV) to the Discharger on 29 January 2009 for violations reported in the compliance inspection on 24 November 2008. Violations from the NOV include:

a. The Discharger did not submit a pond management plan due 1 October 2006;

b. The Discharger did not submit a corrective action plan and implementation schedule to comply with effluent limitations for dichlorobromomethane and dibromochloromethane due 1 December 2006;

c. The Discharger did not submit the monthly monitoring report for March 2007;

d. The Discharger did not submit the quarterly groundwater monitoring reports for five quarters from 2006-2008;

e. The Discharger did not submit the 2007 annual report;

f. The Discharger did not submit progress reports for compliance with Time Schedule Order (TSO) R5-2006-0082;

g. The No Spill Certification for January 2008 conflicts with the sewage spill on 1 January 2007 and 1 January 2008.

2. The Central Valley Water Board issued a Notice of Violation (NOV) to the Discharger on 13 January 2011 for violations identified in SMRs for aluminum, dichlorobromomethane, chloroform, groundwater limitation violations, and monitoring and reporting program violations for monitoring periods July, August, September, and the third quarter 2010.

E. Planned Changes – Not Applicable.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order is issued pursuant to regulations in the Clean Water Act (CWA) and the California Water Code (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

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

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

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

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

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

5. **Antidegradation Policy.** As specified in the Finding contained at section II.N of this Order and as discussed in detail in the Fact Sheet (Attachment F, section IV.D.4.), the discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board (State Water Board) Resolution 68-16.

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

7. **Emergency Planning and Right to Know Act**

   Section 13263.6(a) of the Water Code, requires that "*the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective*".

   The most recent toxic chemical data report does not indicate any reportable off-site releases or discharges to the collection system for this Facility. Therefore, a reasonable potential analysis based on information from EPCRA cannot be conducted. Based on information from EPCRA, there is no reasonable potential to cause or contribute to an excursion above any numeric water quality objectives included within the Basin Plan or in any State Water Board plan, so no effluent limitations are included in this permit pursuant to Water Code section 13263.6(a).

   However, as detailed elsewhere in this Order, available effluent data indicate that there are constituents present in the effluent that have a reasonable potential to cause or contribute to exceedances of water quality standards and require inclusion of effluent limitations based on federal and state laws and regulations.

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 plants 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 Storm Water 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 approval to California's 2010 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources* (40 CFR Part 130, et seq.)." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." There are no 303(d) listings for the jurisdictional wetlands.

2. Total Maximum Daily Loads (TMDLs). USEPA requires the Central Valley Regional Water Quality Control Board (Central Valley Water Board) to develop TMDLs for each 303(d) listed pollutant and water body combination. TMDLs have not been adopted for the jurisdictional wetlands.

3. The 303(d) listings and TMDLs have been considered in the development of the Order. A pollutant-by-pollutant evaluation of each pollutant of concern is described in section IV.C.3. of this Fact Sheet.

E. Other Plans, Policies and Regulations

1. Title 27, California Code of Regulations (CCR), section 20005 *et seq* (hereinafter Title 27). Pursuant to WDR Order R5-2010-0070, discharges to groundwater from the three aerated ponds (Ponds 1, 2, and 4), the two unlined storage reservoirs (Ponds 5 and 6), and the 25-acre land application are exempt from the requirements of Title 27.

Discharges of wastewater to land, including but not limited to evaporation ponds or percolation ponds, may be exempt from the requirements of Title 27, CCR, based on section 20090 et seq. As discussed below, discharges to groundwater from Pond NC-2D and golf course irrigation meet the conditions for an exemption from Title 27.

a. **Pond NC-2D.** Title 27 section 20090(a) contains a sewage exemption, which contains a conditional exemption for "*Discharges of domestic sewage or treated effluent which are regulated by WDRs issued pursuant to Chapter 9, Division 3, Title 23 of this code, or for which WDRs have been waived, and which are consistent with applicable water quality objectives…"* and an unconditional exemption for "treatment or storage facilities associated with municipal wastewater treatment plants".

   The State Water Board's recent revision to the decision on the Lodi petition indicates that the unconditional exemption covers post-treatment storage facilities that are "associated with" municipal wastewater treatment plants if the facilities (1) are used to store treated municipal wastewater prior to ultimate disposal or reuse, and (2) do not receive any other wastes other than on-site storm water flows if authorized by the State Water Board or the applicable regional water quality control board, and (3) are under the control of the municipal treatment plant. Facilities that are subject to the municipal wastewater treatment plant waste discharge requirements, water recycling requirements, or other permitting mechanism issued to the municipal wastewater treatment plant owner or operator are considered to be "under the control" of the municipal treatment plant.

   Pond NC-2D is used to store tertiary treated wastewater prior to use as reclaimed water for golf course irrigation or make-up water. Additionally, Pond NC-2D does not receive any other wastes aside from tertiary treated wastewater and is under control of the Facility, which is subject to the requirements of this Order. Therefore, Pond NC-2D is exempt from the requirements of Title 27, pursuant to Title 27 CCR section 20090(a).

b. **Golf Course Irrigation.** Title 27 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 the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Basin Plan at page IV-17.00 contains an implementation policy, "*Policy for Application of Water Quality Objectives*" that specifies that the Regional 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 Regional Water Board's "*Policy for Application of Water Quality Objectives*")(40 CFR 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*." (Basin Plan at III-8.00) The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, "…*water designated for use as domestic or municipal supply (MUN) shall not*

contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)" in Title 22 of CCR. The Basin Plan further states that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCLs. The narrative tastes and odors objective states: *"Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses*."

A. Discharge Prohibitions

1. Surface Water Discharge Prohibitions

a. **Prohibition III.A (Discharge of wastewater at a location or in a manner different from that described in the Findings is prohibited).** 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. This prohibition is retained from Order R5-2006-0081.

b. **Prohibition III.B (The by-pass or overflow of wastes to surface waters is prohibited, except as allowed by Federal Standard Provisions I.G and I.H (Attachment D)).** As stated in section I.G of Attachment D, Standard Provisions, this Order prohibits bypass from any portion of the treatment facility. Federal regulations, 40 CFR 122.41(m), define "bypass" as the intentional diversion of waste streams from any portion of a treatment facility. This section of the federal regulations, 40 CFR 122.41(m)(4), prohibits bypass unless it is unavoidable to prevent loss of life, personal injury, or severe property damage. In considering the Central Valley Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order WQO 2002-0015, which cites the federal regulations, 40 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation. This prohibition is retained from Order R5-2006-0081.

c. **Prohibition III.C (Neither the discharge nor its treatment shall create a nuisance as defined in section 13050 of the Water Code).** This prohibition is based on Water Code section 13050 that requires water quality objectives established for the prevention of nuisance within a specific area. The Basin Plan prohibits conditions that create a nuisance. This prohibition is retained from Order R5-2006-0081.

d. **Prohibition III.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).** This prohibition is based on 40 CFR 122.41 et seq. that requires the proper design and operation of treatment facilities. This prohibition is retained from Order R5-2006-0081.

e. **Prohibition III.E (No discharge to jurisdictional wetlands between 1 January and 31 March).** This permit prohibits discharge to the jurisdictional wetlands between 1 January and 31 March. This prohibition is retained from Order R5-2006-0081 in order to reduce the threat of uncontrolled release of reclaimed wastewater from the jurisdictional wetlands to Littlejohns Creek during the wet winter months.

f. **Prohibition III.F (No direct discharge to Littlejohns Creek).** This Order does not allow direct discharge to Littlejohns Creek because the Discharger is required to maximize the use of recycled water for the golf course irrigation, as required by Central Valley Water Board Order R5-2010-0070, with the on-site land application serving as a backup means of effluent disposal. This prohibition is retained from Order R5-2006-0081.

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 Secondary Treatment Standards at 40 CFR Part 133.

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 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH.

2. Applicable Technology-Based Effluent Limitations

a. **BOD_5 and TSS.** Federal regulations, 40 CFR Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD_5 and TSS. This Order establishes WQBELs that are more

stringent than the secondary technology-based treatment described in 40 CFR Part 133 and are necessary to protect the beneficial uses of the receiving stream. (See section IV.C.3.c.iii of this Fact Sheet for the discussion on WQBELs for BOD_5 and TSS.) In addition, 40 CFR 133.102, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal shall not be less than 85 percent. If 85 percent removal of BOD_5 and TSS must be achieved by a secondary treatment plant, it must also be achieved by a tertiary (i.e., treatment beyond secondary level) treatment plant. This Order contains a limitation requiring an average of 85 percent removal of BOD_5 and TSS over each calendar month.

b. **Flow.** The Facility was designed to provide a tertiary level of treatment for up to 0.95 MGD. Therefore, this Order contains a maximum daily effluent limitation (MDEL) of 0.95 MGD. Order R5-2006-0081 included an average monthly effluent limitation (AMEL) of 0.95 MGD. This Order does not retain the AMEL since compliance with the MDEL will ensure compliance with the AMEL from Order R5-2006-0081.

c. **pH.** The secondary treatment regulations at 40 CFR Part 133 also require that pH be maintained between 6.0 and 9.0 standard units.

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

Table F-4. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	--	--	0.95	--	--
Biochemical Oxygen Demand (5-Day @ 20°C)[1]	mg/L	30	45	--	--	--
	lbs/day[2]	238	357	--	--	--
	% Removal	85	--	--	--	--
pH	standard units	--	--	--	6.0	9.0
Total Suspended Solids[1]	mg/L	30	45	--	--	--
	lbs/day[2]	238	357	--	--	--
	% Removal	85	--	--	--	--

[1] Note that more stringent WQBELs for BOD_5, pH, and TSS are applicable and are established as final effluent limitations in this Order (see section IV.C.3.c of this Fact Sheet).
[2] Based upon a design flow of 0.95 MGD.

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.c.viii 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 for recreation in and on the water be achieved by July 1, 1983.*" Federal Regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal Regulations, 40 CFR sections 131.2 and 131.10, require that all waters of the State regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 CFR, defines existing beneficial

uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal Regulation, 40 CFR section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

a. Receiving Water and Beneficial Uses

The Basin Plan at II-2.00 states that the beneficial uses of any specifically identified water body generally apply to its tributary streams. The Basin Plan in Table II-1, Section II, does not specifically identify beneficial uses for the jurisdictional wetlands, but does identify present and potential uses for the San Joaquin River within the Sacramento-San Joaquin Delta, to which the jurisdictional wetlands, via Littlejohns Creek, is tributary. Thus, beneficial uses applicable to jurisdictional wetlands are as follows:

Table F-5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Jurisdictional Wetlands	Existing uses from Table II-1 of the Basin Plan: Municipal and domestic supply (MUN); Agricultural supply, including irrigation and stock watering (AGR); Industrial process supply (PROC); Industrial service supply (IND); Water contact recreation (REC-1) Non-contact water recreation (REC-2); Warm freshwater habitat (WARM); Cold freshwater habitat (COLD); Migration of aquatic organisms, warm and cold (MIGR); Spawning, reproduction, and/or early development, warm (SPWN); Wildlife habitat (WILD); and Navigation (NAV). Suitable uses from State Water Board Resolution 88-63: Municipal and domestic water supply (MUN).
--	Groundwater	Existing: Municipal and domestic supply (MUN); Agricultural supply, including irrigation and stock watering (AGR); Industrial process supply (PROC); and Industrial service supply (IND).

In reviewing where the existing and/or potential uses of the Sacramento-San Joaquin Delta apply to jurisdictional wetlands and Littlejohns Creek, the Central Valley Water Board has considered the following facts:

i. Domestic Supply and Agricultural Supply

The Central Valley Water Board is required to apply the beneficial uses of municipal and domestic supply to the jurisdictional wetlands based on State Water Board Resolution No. 88-63 which was incorporated in the Basin Plan

pursuant to Central Valley Water Board Resolution No. 89-056. In addition, the State Water Board has issued water rights to existing water users along Littlejohns Creek, the San Joaquin River, and the Sacramento-San Joaquin Delta downstream of the discharge for domestic and irrigation uses. Since Littlejohns Creek is an ephemeral stream, it likely provides groundwater recharge during periods of low flow. The groundwater is a source of drinking water. In addition to the existing water uses, growth in the area downstream of the discharge is expected to continue, which represents a potential for increased domestic and agricultural uses of the water in Littlejohns Creek.

ii. Water Contact and Noncontact Recreation and Esthetic Enjoyment

The Central Valley Water Board finds that the discharge flows in close proximity to residential areas, there is ready public access to jurisdictional wetlands and Littlejohns Creek, exclusion of the public is unrealistic and contact recreational activities currently exist along the juristdictional wetlands and Littlejohns Creek and downstream waters and these uses are likely to increase as the population in the area grows. Prior to flowing into the San Joaquin River, Littlejohns Creek flows through some areas of general public access, meadows, residential areas, and parks. The San Joaquin River also offers recreational opportunities.

iii. Groundwater Recharge

In areas where groundwater elevations are below the stream bottom, water from the stream will percolate to groundwater. Littlejohns Creek is at times dry; therefore, it is reasonable to assume that the stream water is lost by evaporation, flows downstream, and percolation to groundwater providing a source of municipal and irrigation water supply.

iv. Freshwater Replenishment

When water is present in the jurisdictional wetlands and Littlejohns Creek, there is hydraulic continuity between these water sources and the San Joaquin River. During periods of hydraulic continuity, the jurisdictional wetlands and Littlejohns Creek add to the water quantity and may impact the quality of water flowing down stream in the San Joaquin River.

v. Preservation and Enhancement of Fish, Wildlife, and Other Aquatic Resources

Flows from the jurisdictional wetlands and Littlejohns Creek flow to the San Joaquin River. The California Department of Fish and Game (DFG) has verified that the fish species present in Littlejohns Creek and downstream waters are consistent with both cold and warm water fisheries, that there is a potential for anadromous fish migration necessitating a cold water designation. The Basin Plan (Table II-1) designates the San Joaquin River as being both a cold and warm freshwater habitat. Therefore, pursuant to the

Basin Plan (Table II-1, Footnote (2)), the cold designation applies to both jurisdictional wetlands and Littlejohns Creek. The cold-water habitat designation necessitates that the in-stream dissolved oxygen concentration be maintained at, or above, 7.0 mg/L.

Upon review of the flow conditions, habitat values, and beneficial uses of both the jurisdictional wetlands and Littlejohns Creek, and the facts described above, the Central Valley Water Board finds that the beneficial uses identified in the Basin Plan for the Sacramento-San Joaquin Delta are applicable to both the jurisdictional wetlands and Littlejohns Creek.

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 data from May 2008 through April 2011 which includes effluent data submitted in self-monitoring reports (SMRs) and a priority pollutant scan from June 2009.

As described in section II.B of this Fact Sheet, this Order regulates discharges of make-up water from Pond NC-2D to jurisdictional wetlands, the receiving waters. Order R5-2006-0081 required receiving water monitoring in Littlejohns Creek, but did not require monitoring within the jurisdictional wetlands. Nevertheless, during periods of discharge, the jurisdictional wetlands are comprised of effluent or raw water from Lake Tulloch; thus, it is not possible to collect ambient background monitoring data from within the ponds that is outside the influence of the discharge. Therefore, ambient background monitoring data was not used in the RPA and is not required by this Order.

c. Assimilative Capacity/Mixing Zone. The Central Valley Water Board finds that based on the available information and on the Discharger's application, that the jurisdictional wetlands are comprised primarily of effluent and raw water from Lake Tulloch; therefore, no credit for receiving water dilution is available. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water quality goals and aquatic life. Consistent with Order R5-2006-0081, dilution and assimilative capacity within the receiving water were not considered in establishing effluent limitations. For pollutants that demonstrated reasonable potential, effluent limitations were applied at the point of discharge.

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[1], the CTR[2] and State Water Board Order WQO 2008-0008 (City of Davis). The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 CFR § 131.38(c)(4)) The CTR does not define whether the term "ambient," as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions. Therefore, where reliable, representative data are available, the hardness value for calculating criteria can be the downstream receiving water hardness, after mixing with the effluent (Order WQO 2008-0008, p. 11). The Central Valley Water Board thus has considerable discretion in determining ambient hardness (Id., p.10).

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[3]. 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 Reasonable Potential Analysis (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.

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

[2] The CTR requires that, for waters with a hardness of 400 mg/L (as $CaCO_3$), 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.

[3] All effluent discharges will change the ambient downstream metals concentration and hardness. It is not possible to change the metals concentration without also changing the hardness.

(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 after completely mixed 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[1]. 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[2] developed procedures for calculating the effluent concentration allowance (ECA)[3] 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

[1] The pollutant must also be detected in the effluent.
[2] 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.
[3] 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.

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[1], is as follows:

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

Where:

H = hardness (as $CaCO_3$)[2]
WER = water-effect ratio
m, b = metal- and criterion-specific constants

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:

$$\text{ECA} = C \quad (\text{when } C \leq B)^{3} \quad \text{(Equation 2)}$$

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,

[1] 40 CFR § 131.38(b)(2).
[2] For this discussion, all hardness values are in mg/L as $CaCO_3$.
[3] The 2006 Study assumes the ambient background metals concentration is equal to the CTR criterion (i.e., $C \leq B$).

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[1]. 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)[2]. Consequently, for Concave Down Metals, the CTR criteria have been calculated using the downstream ambient hardness under this condition.

The effluent hardness ranged from 66 mg/L to 114 mg/L, based on 16 samples collected between May 2008 and April 2011. No ambient background monitoring data is available. However, because the jurisdictional wetlands are comprised primary of effluent or raw makeup water from Lake Tulloch, hardness data from Lake Tulloch is representative of the hardness of the receiving water and was used for determining hardness-dependent CTR criteria. The Lake Tulloch hardness varied from 23 mg/L to 75 mg/L, based on 10 samples collected between April 2011 and June 2012. Under the effluent dominated condition, the reasonable worst-case downstream ambient hardness is 66 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 <u>always</u> at the lowest observed upstream receiving water hardness (i.e., 23 mg/L)
- Upstream receiving water copper concentration <u>always</u> 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

[1] 2006 Study, p. 5700
[2] 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.

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[1].

Table F-6. Copper ECA Evaluation

Lowest Observed Effluent Hardness					**66 mg/L (as $CaCO_3$)**
Lowest Observed Upstream Receiving Water Hardness					**23 mg/L (as $CaCO_3$)**
Highest Assumed Upstream Receiving Water Copper Concentration					**2.7 µg/L[1]**
Copper $ECA_{chronic}$[2]					**6.5 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%	23	2.7	2.7	**Yes**
	5%	25	2.9	2.9	**Yes**
	15%	29	3.3	3.2	**Yes**
	25%	34	3.7	3.6	**Yes**
	50%	45	4.7	4.6	**Yes**
Low Flow	75%	55	5.6	5.6	**Yes**
	100%	66	6.5	6.5	**Yes**

1 Highest assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 23 mg/L.
2 ECA calculated using Equation 1 for chronic criterion at a hardness of 66 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,

[1] 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.

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).

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

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 66 mg/L. Hardness data from Lake Tulloch is representative of upstream receiving water hardness because the upstream receiving water hardness is not available. Lake Tulloch hardness ranged from 23 mg/L to 75 mg/L. In this case, the reasonable worst-case upstream receiving water hardness to use in Equation 4 to calculate the ECA is 23 mg/L.

In this case for lead, the lowest possible fully-mixed downstream hardness is 66 mg/L (see last row of Table F-7), which corresponds to a total recoverable chronic ECA of 1.7 µg/L, using Equations 1 and 2. However, a lower chronic ECA is required to ensure the discharge does not cause toxicity at any location in the receiving water, at or downstream of the discharge, which would be a violation the Basin Plan's narrative toxicity objective . This is because for concave up metals, mixing two waters with different hardness with metals concentrations at their respective CTR criteria will always result in CTR criterion exceedances. As shown in Table F-7, a chronic ECA of 1.7 µg/L is necessary to be protective under all discharge conditions. In this example for lead, for any receiving water flow condition (high flow to low flow), the fully-mixed downstream ambient lead concentration is in compliance with the CTR criteria.

Using the procedures discussed above to calculate the ECA for all Concave Up Metals will result in WQBELs that are protective under all potential effluent/receiving water flow conditions (high flow to low flow) and under all known hardness conditions, as demonstrated in Table F-7, for lead.

Table F-7. Lead ECA Evaluation

Lowest Observed Effluent Hardness					**66 mg/L**
Reasonable Worst-case Upstream Receiving Water Hardness					**23 mg/L**
Reasonable Worst-case Upstream Receiving Water Lead Concentration					**0.49 µg/L[1]**
Lead $ECA_{chronic}$[2]					**1.7 µg/L**
Effluent Fraction[6]		**Fully Mixed Downstream Ambient Concentration**			
		Hardness[3] (mg/L) (as $CaCO_3$)	**CTR Criteria[4] (µg/L)**	**Lead[5] (µg/L)**	**Complies with CTR Criteria**
High Flow	1%	23	0.55	0.50	**Yes**
	5%	25	0.56	0.55	**Yes**
	15%	30	0.67	0.66	**Yes**
	25%	34	0.80	0.78	**Yes**
	50%	45	1.1	1.1	**Yes**
	75%	55	1.5	1.4	**Yes**
Low Flow	100%	66	1.9	1.7	**Yes**

1 Reasonable worst-case upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 23 mg/L.
2 ECA calculated using Equation 4 for chronic criteria.
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 ECA 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	9.5	6.5
Chromium III	1,236	147
Cadmium	2.7	1.8
Lead	43	1.7
Nickel	330	37
Silver	1.4	--
Zinc	84	84

3. Determining the Need for WQBELs

a. The Central Valley Water Board conducted the RPA in accordance with section 1.3 of the SIP. Although the SIP applies directly to the control of CTR priority pollutants, the State Water Board has held that the Regional Water Boards may use the SIP as guidance for water quality-based toxics control.[1] The SIP states in the introduction "*The goal of this Policy is to establish a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency*." Therefore, in this Order the RPA procedures from the SIP were used to evaluate reasonable potential for both CTR and non-CTR constituents based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs.

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 those pollutants is established in this Order as required by the SIP. If the results of effluent monitoring demonstrate reasonable potential, this Order may be reopened and modified by adding an appropriate effluent limitation.

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. Chlorodibromomethane

(a) WQO. The CTR contains a criterion of 0.41 µg/L for chlorodibromomethane for the protection of human health for waters from which both water and organisms are consumed. Order R5-2006-0081 included effluent limitations for chlorodibromomethane based on the CTR human health criterion.

(b) RPA Results. Chlorodibromomethane was not detected in the effluent (minimum MDL 0.17 µg/L, minimum RL 0.5 µg/L) based on 15 samples collected between May 2008 and April 2011. Background receiving water monitoring data for chlorodibromomethane is not available. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above CTR water quality criteria for chlorodibromomethane and the effluent limitations for chlorodibromomethane 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).

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

ii. Chloroform

(a) WQO. Chloroform is a priority pollutant; however there are no applicable CTR criteria for MCLs for chloroform. DPH has developed a Primary MCL for total trihalomethanes (THMs), which includes chloroform, of 80 µg/L. In addition to chloroform, THMs include bromoform, chlorodibromomethane, and dichlorobromomethane. Order R5-2006-0081 established effluent limitations for chloroform based on the CalEPA Cancer Potency Factor as a Drinking Water Level of 1.1 µg/L. However, because the applicable MCL for THMs, which include chloroform, of 80 µg/L is considered by DPH to be the level necessary for protection of public health for drinking water, it is inappropriate to apply the Cancer Potency Factor of 1.1 µg/L to the discharge. Therefore, this Order uses the Primary MCL of 80 µg/L to interpret the narrative toxicity and chemical constituents objective in the Basin Plan for the protection of the MUN beneficial use.

(b) RPA Results. The maximum effluent concentration (MEC) for chloroform was 51 µg/L (minimum MDL 0.19 µg/L, minimum RL 0.5 µg/L) based on 15 samples collected between May 2008 and April 2011. Bromoform, chorodibromomethane were not detected in the effluent and dichlorobromomethane was detected with an MEC of 2.9 µg/L, and collectively they do not exceed the MCL for THMs. Therefore, chloroform in the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Primary MCL for THMs, and the effluent limitation for chloroform has not been retained in this Order. Removal of this effluent limitation is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

iii. Iron

(a) WQO. The Secondary MCL – Consumer Acceptance Limit for iron is 300 µg/L. Order R5-2006-0081 included an effluent limitation for iron based on the Secondary MCL.

(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. Iron 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 was conducted based on the calendar annual average iron concentrations. The maximum calendar annual average effluent concentration for iron was 58 µg/L (minimum MDL 20 µg/L, minimum RL 20 µg/L) based on 17 samples collected between May 2008 and April 2011. Background receiving water monitoring data for iron is not available. Therefore, the discharge does not demonstrate reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL for iron

and the effluent limitation for iron has not been retained in this Order. Removal of this effluent limitation is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

iv. Oil and Grease

(a) WQO. The Basin Plan contains a narrative oil and grease objective which states *"Waters shall not contain oils, greases, waxes, or other materials 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."* Order R5-2006-0081 includes effluent limitations for oil and grease.

(b) RPA Results. Order R5-2006-0081 included effluent limitations for oil and grease but did not include monitoring requirements. Therefore, no oil and grease data was available. In the past, oil and grease was a problem at many POTWs and effluent limitations were necessary to protect the treatment plant and receiving waters. The Discharger is required to be covered under State Water Board Order 2006-0003, a Statewide General WDR for Sanitary Sewer Systems, which requires each enrollee to evaluate its service area to determine whether a fats, oils and grease (FOGs) control program is needed. If an enrollee determines that a FOG control program is not needed, the enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. The Discharger's compliance with the requirements of WQO 2006-0003 will ensure minimal amounts of oil and grease are discharged into the Facility. During the term of Order R5-2006-0081, the Discharger upgraded to a tertiary treatment system, which should ensure that oil and grease is not discharged at concentrations that will cause or contribute to an exceedance of the narrative water quality objective. To be consistent with similar facilities that discharge tertiary treated wastewater, this Order does not retain effluent limitations from Order R5-2006-0081. This Order includes accelerated monitoring requirements for 2 years in order to determine if oil and grease is present in the effluent in concentrations that cause or contribute to an exceedance of the Basin Plan water quality objective for oil and grease. Removal of these effluent limitations is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

v. Settleable Solids

(a) WQO. For inland surface waters, the Basin Plan states that "[w]*ater shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses*." Order R5-2006-0081 established an AMEL of 0.1 ml/L and an MDEL of 0.2 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 54 samples collected between May 2008 and April 2011. Because settleable solids have not been detected in the effluent 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).

vi. Chlorine Residual

(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. 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)

Since the Discharger upgraded the Facility to use UV disinfection for all wastewater, chlorine is no longer used anywhere in the wastewater treatment process. Therefore, the discharge no longer has a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC, and the effluent limitations for residual chlorine 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).

vii. Dichlorobromomethane

(a) WQO. The CTR includes 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. Dichlorobromomethane is a disinfection byproduct generated through chlorine contact. Since the Discharger upgraded the Facility to use UV disinfection for all wastewater chlorine is no longer used anywhere in the wastewater treatment process and there is no longer the potential for the generation of dichlorobromomethane. Based on effluent data collected since the facility changes, dichlorobromomethane has not been detected in the effluent. Therefore, the discharge no longer has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health for dichlorobromomethane and the effluent limitations for dichlorobromomethane 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).

c. Constituents with Reasonable Potential. The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for aluminum, ammonia, BOD_5, electrical conductivity, manganese, nitrate plus nitrite, pH, total coliform organisms, and TSS. 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. 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, WQBEL's in the Central Valley Region's NPDES permits are based on the Basin Plans' narrative toxicity objective. The Basin Plans' *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 Ambient Water Quality Criteria (NAWQC) and subsequent Correction, (2) site-specific conditions of 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 chronic criterion at 87 µg/L based upon the following two toxicity tests. All tests were conducted in water that contained pH range of 6.0 to 6.6 and 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 a 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 an 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 acidic 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 a 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 data from the jurisdictional wetlands 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 the jurisdictional wetlands as in the previously described toxicity tests. The pH in Pond NC-2D ranged from 6.6 to 9.9 based on 94 monitoring results obtained between May 2008 and April 2011. Hardness data for Pond NC-2D is not available. However, hardness data from Lake Tulloch, which is representative of the hardness in Pond NC-2D, ranged from 23 mg/L to 52 mg/L based on 10 samples between 2002 and 2011, which is above the conditions, and thus less toxic, than the tests used to develop the chronic criterion. Brook trout and striped bass have not been surveyed nor expected to be present (http://bios.dfg.ca.gov/) since striped bass is non-native to California and brook trout is present in higher elevation lakes and streams.

Parameter	Units	Test Conditions for Applicability of Chronic Criterion	Effluent	Jurisdictional Wetlands
pH	standard units	6.0 – 6.5	5.8 – 8.4	6.6 – 9.9
Hardness, Total (as $CaCO_3$)	mg/L	12	66 – 114	23 – 75[1]

[1] Represents the hardness of the raw water from Lake Tulloch between 2002 and 2011.

Local Environmental Conditions and Studies. Twenty-one site-specific aluminum toxicity tests have been conducted within the Central Valley Region. The pH and hardness of the jurisdictional wetlands are similar, as shown in the table below, and thus the results of these site-specific aluminum toxicity tests is relevant and appropriate for the jurisdictional wetlands. As shown in the following table, all EC_{50} toxicity study result

values are at concentrations of aluminum above 5000 µg/L. Thus, the toxic effects of aluminum in surface waters within the Central Valley Region, including the jurisdictional wetlands, 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. 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 the jurisdictional wetlands.

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 titrimetic 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. The City of Auburn is located at an elevation of approximately 1,400 feet above sea level, and is surrounded by forest. As shown, the test water quality characteristics of Auburn Ravine are critically lower than the jurisdictional wetlands, with the pH at 7.4 and hardness at 16 mg/L as $CaCO_3$ in

comparison to the median pH at 7.8 and the mean hardness at 29 mg/L as $CaCO_3$, respectively. Thus results of site-specific studies conducted on Auburn Ravine would represent conservative assumptions for the jurisdictional wetlands since the jurisdictional wetlands' water quality characteristics (pH and hardness) are higher, and therefore, aluminum is less toxic to aquatic life in the jurisdictional wetlands. 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 the jurisdictional wetlands. 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. Thus, these results support the conclusion that the 87 µg/L chronic criterion is overly stringent for the jurisdictional wetlands.

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. USEPA has also adopted an NAWQC acute criterion of 750 µg/L for the protection of aquatic life.

(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 was conducted based on the calendar annual average aluminum concentrations. The maximum observed annual average aluminum concentration was 248 µg/L, based on 16 samples collected between May 2008 and April 2011. Receiving water data for aluminum is not available. Therefore, aluminum in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL and this Order contains effluent limitations for ammonia.

(c) WQBELs. Order R5-2006-0081 included an AMEL and MDEL of 87 µg/L and 174 µg/L, respectively, based on the NAWQC aluminum chronic criterion of 87 µg/L. As discussed in section IV.C.3.c.i.(a), above, the NAWQC chronic criteria of 87 µg/L is overly stringent for the jurisdictional wetlands. Therefore, this Order contains a final average weekly effluent limitation (AWEL) and AMEL for aluminum of 623 µg/L and 310 µg/L, respectively, based on the Secondary MCL. The relaxation of the effluent limitations for aluminum is in accordance with federal anti-backsliding regulations (see section IV.D.3 of the Fact Sheet).

(d) Plant Performance and Attainability. Based on analysis of the effluent data, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

ii. 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 Littlejohns Creek has a beneficial use of cold freshwater habitat and the presence of salmonids and early fish life stages in Littlejohns Creek 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 pH and temperature from the Discharger's monthly monitoring reports from May 2008 through April 2011. Rolling 30-day average criteria were calculated from the data 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 1.91 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 1.91 mg/L (as N), the 4-day average concentration that should not be exceeded is 4.77 mg/L (as N).

(b) RPA Results. 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, USPEA recommends that, "*POTWs should also be characterized for the possibility of chlorine and ammonia problems.*" (TSD, p. 50)

The Facility is a POTW that treats domestic wastewater. Untreated domestic wastewater contains ammonia. 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. Additionally, the MEC for ammonia was 6.4 mg/L (RL 0.500 mg/L) based on 53 samples collected between May 2008 and April 2011,which exceeds the most stringent ammonia criteria. 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 calculates WQBELs in accordance with SIP procedures for non-CTR constituents, and ammonia is a non-CTR constituent. The SIP procedure assumes a 4-day averaging period for calculating the long-term average discharge condition (LTA). However, USEPA recommends modifying the procedure for calculating permit limits for ammonia using a 30-day averaging period for the calculation of the LTA corresponding to the 30-day CCC. Therefore, while the LTAs corresponding to the acute and 4-day chronic criteria were calculated according to SIP procedures, the LTA corresponding to the 30-day CCC was calculated assuming a 30-day averaging period. The lowest LTA representing the acute, 4-day CCC, and 30-day CCC is then selected for deriving the AMEL and the MDEL. The remainder of the WQBEL calculation for ammonia was performed according to the SIP procedures. This Order contains a final AMEL and MDEL for ammonia of 0.74 mg/L and 2.2 mg/L, respectively, based on the NAWQC (chronic criterion).

(d) Plant Performance and Attainability. Analysis of effluent data shows that the MEC of 6.4 mg/L is greater than applicable WQBELs. However, the MEC was from a sample taken in May 2008. Since then, the Discharger has added aerators in Ponds 1, 2, 4, and 6 in Order to provide enhanced treatment and comply with effluent limitations for ammonia. Since May 2010, ammonia has been detected in the effluent in seven out of 20 samples with an MEC of 0.90 mg/L. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iii. BOD_5 and TSS

(a) WQO. Federal regulations, 40 CFR Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD_5 and TSS. Tertiary treatment is necessary to protect the beneficial uses of the receiving stream. The principal design parameter for wastewater treatment plants is the daily BOD_5 and TSS loading rate 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 in 40 CFR Part 133; the minimum 30-day average, weekly average, and maximum daily levels of effluent quality attainable by a tertiary system are 10 mg/L, 15 mg/L, and 30 mg/L, respectively.

(b) RPA Results. BOD_5 is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The Discharger is a POTW that treats domestic wastewater through a tertiary-level treatment system. The principal design parameter for wastewater treatment plants is the daily BOD_5 and TSS loading rate 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. BOD_5 and TSS are oxygen depleting substances that can lower dissolved oxygen levels in the receiving water causing toxicity to fish if not controlled; such discharges would violate the Basin Plan narrative toxicity objective. BOD_5 and TSS are inherent in the wastestream of a POTW. Levels of BOD_5 and TSS discharged without adequate treatment are toxic and must be controlled. Standard secondary wastewater treatment does not adequately remove BOD_5 and TSS to levels that are protective of fish and other aquatic life. Therefore it is appropriate to control BOD_5 and TSS for the protection of aquatic life by protecting water quality. Therefore, this Order contains effluent limitations for BOD_5 and TSS that are 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 also included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.

(c) WQBELs. This Order contains AMELs and average weekly effluent limitations (AWELs) for BOD_5 and TSS of 10 mg/L and 15 mg/L, respectively, which are technically based on the capability of a tertiary system. In addition to the AWELs and AMELs, MDELs for BOD_5 and TSS at 30 mg/L are included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities.

(d) Plant Attainability. Analysis of the effluent data shows the Facility can meet these WQBELs.

iv. Manganese

(a) WQO. The Secondary MCL – Consumer Acceptance Limit for manganese is 50 µg/L, which is used to implement the Basin Plan's chemical constituent objective for the protection of municipal and domestic supply.

(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. Manganese 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 was conducted based on the calendar annual average manganese concentrations. The maximum annual average effluent concentration for manganese was 102 µg/L (minimum RL 5.0 µg/L) based on 17 samples collected between May 2008 and April 2011. Receiving water data for manganese is not available. Therefore, manganese in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Secondary MCL.

(c) WQBELs. This Order contains a final AWEL and AMEL for manganese of 242 µg/L and 97 µg/L, respectively, based on the Basin Plan's narrative chemical constituents objective for the protection of the MUN beneficial use.

(d) Plant Performance and Attainability. Based on analysis of the effluent data, the Central Valley Water Board concludes that immediate compliance with these effluent limitations is feasible.

v. Nitrate and Nitrite

(a) WQO. DPH has adopted Primary MCLs for the protection of human health for nitrite and nitrate that are equal to 1 mg/L and 10 mg/L (measured as nitrogen), 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. 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 best 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 Facility is a POTW 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. 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/denitrification to remove ammonia, nitrite, and nitrate from the waste stream. Inadequate or incomplete denitrification may result in the discharge of nitrate and/or nitrite to the receiving stream. Discharges of nitrate plus nitrite in concentrations that exceed the primary MCL would violate the Basin Plan narrative chemical constituents objective. Although the Discharger denitrifies the discharge, inadequate or incomplete denitrification creates the potential for nitrate and nitrite 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 Primary MCL. Therefore, the Central Valley Water Board finds the discharge has reasonable potential for nitrate plus nitrite and WQBELs are required.

(c) WQBELs. This Order contains a final AMEL for nitrate plus nitrite of 10 mg/L, based on the protection of the Basin Plan's narrative chemical constituents objective and to assure the treatment process adequately nitrifies and denitrifies the waste stream.

(d) Plant Performance and Attainability. Data for nitrate and nitrite is not available. However, the Facility is designed to provide nitrification and denitrification. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

vi. Pathogens

(a) WQO. DPH has developed reclamation criteria, 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. To more effectively regulate total coliform organisms, this Order also contains additional effluent limitations; effluent total coliform organisms shall not exceed

23 MPN/100 mL more than once in any 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 that required by the DPH's reclamation criteria because the receiving water is used for irrigation of agricultural land and for contact recreation purposes. The stringent disinfection criteria of Title 22 are appropriate since the undiluted effluent may be used for the irrigation of food crops and/or for body-contact water recreation. 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. 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 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 best 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 the jurisdictional wetlands include municipal and domestic supply, water contact recreation, and agricultural irrigation supply, and there is, at times, less than 20:1 dilution. 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. In accordance with the requirements of Title 22, this Order includes effluent limitations for total coliform organisms 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 effluent limitations, operating specifications for turbidity have been included as a second indicator of the effectiveness of the treatment process and to assure compliance with the required level of treatment. The Facility uses a two-stage filtration system, which is capable of reliably meeting a turbidity of 2 nephelometric turbidity units (NTU) as a daily average. Failure of the filtration system such that virus removal is impaired would normally result in increased particles in the effluent, which result in higher effluent turbidity. Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. Coliform testing, by comparison, is not conducted continuously and requires several hours, to days, to identify high coliform concentrations. Therefore, to ensure compliance with equivalency to DPH recommended Title 22 disinfection criteria, this Order includes operating specifications for turbidity of 2 NTU as a daily average; 5 NTU, not to be exceeded more than 5% of the time within a 24-hour period; and 10 NTU as an instantaneous maximum.

This Order contains effluent limitations, operating specifications, 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.

(d) Plant Performance and Attainability. The Facility is designed to provide tertiary treatment and uses chlorine and UV disinfection prior to

discharging. 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. 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.*"

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 POTW that treats domestic wastewater. Although the Discharger has proper pH controls in place, the pH for the Facility's influent varies due to the nature of municipal 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. These are retained from Order R5-2006-0081.

(d) Plant Performance and Attainability. Based on 342 pH samples taken from May 2008 through April 2011, the minimum pH level reported was 6.7 and the maximum reported was 8.4. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

viii. Salinity

(a) WQO. The Basin Plan contains a chemical constituent 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 Ambient Water Quality Criteria 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, live stock, 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 studies conducted through this Order to establish an agricultural limit to implement the narrative objective will be reviewed by and consistent with the efforts currently underway by CV SALTS.

Table F-9. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Objective[1]	Secondary MCL[1]	USEPA NAWQC	Effluent	
				Average	Maximum
EC (µmhos/cm)	Varies	900, 1600, 2200	N/A	643	855
TDS (mg/L)	Varies	500, 1000, 1500	N/A	--	--
Sulfate (mg/L)	Varies	250, 500, 600	N/A	40	60
Chloride (mg/L)	Varies	250, 500, 600	860 1-hr 230 4-day	--	--

Parameter	Agricultural WQ Objective[1]	Secondary MCL[1]	USEPA NAWQC	Effluent	
				Average	Maximum

[1] Narrative chemical constituent objective of the Basin Plan. Procedures for establishing the applicable numeric limitation to implement the narrative objective can be found in the Policy for Application of Water Quality, 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.

(2) Electrical Conductivity. The Secondary MCL for EC 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 TDS is 500 mg/L as a recommended level, 1000 mg/L as an upper level, and 1500 mg/L as a short-term maximum.

(b) RPA Results

(1) Chloride. Effluent and upstream receiving water data for chloride is not available.

(2) Electrical Conductivity. A review of the Discharger's monitoring reports shows an average effluent electrical conductivity of 643 µmhos/cm, with a range from 289 µmhos/cm to 855 µmhos/cm. These levels do not exceed the Secondary MCL. Upstream receiving water data for electrical conductivity is not available.

(3) Sulfate. Sulfate concentrations in the effluent ranged from 23 mg/L to 60 mg/L, with an average of 40 mg/L. These levels do not exceed the Secondary MCL. Upstream receiving water data is not available.

(4) Total Dissolved Solids. Effluent and upstream receiving water data for total dissolved solids is not available.

(c) WQBELs. Based on the relatively low reported salinity, the discharge does not have reasonable potential to cause or contribute to an in-stream excursion of water quality objectives for salinity. However, allowing the

Discharger to increase its current salt loading may be contrary to the Region-wide effort to address salinity in the Central Valley. Therefore, this Order retains the AMEL of 900 µmhos/cm for electrical conductivity from Order R5-2006-0081 to maintain current levels. Based on the sample results for the effluent, it appears the Discharger can meet these effluent limitations.

In order to ensure that the Discharger will continue to control the discharge of salinity, this Order also includes a requirement to update and implement a salinity evaluation and minimization plan. Also water supply monitoring is required to evaluate the relative contribution of salinity from the source water to the effluent.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the maximum electrical conductivity of 855 µmhos/cm is less than the applicable WQBELs for electrical conductivity. The Central Valley Water Board concludes, therefore, that immediate compliance with this effluent limitation is feasible.

4. WQBEL Calculations

a. This Order includes WQBELs for aluminum, ammonia, BOD_5, electrical conductivity, manganese, nitrate plus nitrite, pH, total coliform organisms, and TSS. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.

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

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

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., LTAacute and LTAchronic) using statistical multipliers and the lowest LTA is used to calculate the AMEL and MDEL using additional statistical multipliers.

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

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

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

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

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]	79	119	158	--	--
pH	standard units	--	--	--	6.5	8.5

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day[1]	79	119	158	--	--
Non-Conventional Pollutants						
Aluminum, Total Recoverable	µg/L	310	623	--	--	--
Ammonia Nitrogen, Total (as N)	mg/L	0.74	--	2.2	--	--
	lbs/day[1]	5.9	--	17	--	--
Electrical Conductivity @ 25°C	µmhos/cm	900	--	--	--	--
Manganese, Total Recoverable	µg/L	97	242	--	--	--
Nitrate Plus Nitrite (as N)	mg/L	10	--	--	--	--
Total Coliform Organisms	MPN/100 mL	--	2.2[2]	23[3]	--	240

[1] Based upon a design flow of 0.95 MGD.
[2] Applied as a 7-day median effluent limitation.
[3] 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-8.00]) The Basin Plan also states that, "…*effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate*…".

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. Acute whole effluent toxicity is not a priority pollutant. 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)." The Facility is a POTW that treats domestic wastewater containing ammonia and other acutely toxic pollutants. Acute toxicity effluent limits 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*." Consistent with Order R5-2006-0081, effluent limitations for acute toxicity have been included in this Order 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-8.00) Based on chronic WET testing performed by the Discharger from November 2006 through December 2009, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective, as shown in the table below.

Table F-11. Whole Effluent Chronic Toxicity Testing Results

Date	Fathead Minnow		Water Flea		Green Algae
	Pimephales promelas		*Ceriodaphnia dubia*		*Selenastrum capricornutum*
	Survival (TUc)	Growth (TUc)	Survival (TUc)	Reproduction (TUc)	Growth (TUc)
14 November 2006	1	1	1	1	1
12 June 2007	2	2	1.3	8	4
14 August 2007	1	2	1	1.3	1
8 April 2008	1	1	1	1	1
2 June 2009	1	1	1	1.3	1
8 December 2009	1	1	1	1	1

No dilution has been granted for the chronic condition. Therefore, chronic toxicity testing results exceeding 1 chronic toxicity unit (TUc) demonstrates the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective.

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 limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region[1] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, "*In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits.*" The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. 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).

[1] 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)

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, the Special Provision contained at 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 Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE workplan. The numeric toxicity monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the 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 for ammonia, BOD_5, and TSS. 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, and TSS because they are oxygen-demanding substances. Mass-based effluent limitations were calculated based upon the design flow permitted in section IV.A.1.i of this Order. 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 average weekly and average monthly discharge limitations for POTWs unless impracticable. However, for toxic pollutants and pollutant parameters in water quality permitting, USEPA recommends the use of an MDEL in lieu of average weekly effluent limitations for two reasons. "*First, the basis for the 7-day average for POTWs derives from the secondary treatment requirements. This basis is not related to the need for assuring achievement of water quality standards. Second, a 7-day average, which could comprise up to seven or more daily samples, could average out peak toxic concentrations and therefore the discharge's potential for causing acute toxic effects would be missed.*" (TSD, pg. 96) This Order uses MDELs in lieu of average weekly effluent limitations

for ammonia as recommended by the TSD for the achievement of water quality standards and for the protection of the beneficial uses of the receiving stream. Furthermore, for BOD_5, pH, total coliform organisms, and TSS, weekly average effluent limitations have been replaced or supplemented with effluent limitations utilizing shorter averaging periods. The rationale for using shorter averaging periods for these constituents 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 R5-2006-0081, with the exception of effluent limitations for aluminum, ammonia, chlorine residual, chlorodibromomethane, chloroform, dichlorobromomethane, iron, manganese, oil and grease, settleable solids, and turbidity. The effluent limitations for these pollutants are less stringent than those in Order R5-2006-0081. 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 aluminum, ammonia, chlorodibromomethane, chloroform, dichlorobromomethane, iron, manganese, oil and grease, and settleable solids established in Order R5-2006-0081 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. There are no 303(d) listings for the jurisdictional wetlands, as described in section III.D.1 of this Fact Sheet. Thus the receiving water is an attainment water for aluminum, ammonia, chlorine residual, chlorodibromomethane, chloroform, dichlorobromomethane, iron, manganese, oil and grease, and settleable solids. The removal or relaxation of WQBELs aluminum, ammonia, chlorine residual, chlorodibromomethane, chloroform, dichlorobromomethane, iron, manganese, oil and grease, 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.

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 R5-2006-0081 was issued indicates that chlorine residual, chlorodibromomethane, chloroform, dichlorobromomethane, iron, oil and grease, and settleable solids do not exhibit reasonable potential to cause or contribute to an exceedance of water quality objectives in the receiving water. Furthermore, updated information supports relaxed effluent limitations for ammonia, aluminum, and manganese. The updated information that supports the relaxation of effluent limitations for these constituents includes the following:

i. Aluminum. Receiving water monitoring data for water quality characteristics (e.g., pH and hardness) collected between May 2008 and April 2011, as well as local environmental conditions and aluminum toxicity results indicates that the recommended NAWQC chronic criterion of 87 µg/L is not applicable to the jurisdictional wetlands. The relaxed effluent limitations in this Order are based on the Secondary MCL of 200 µg/L.

ii. Ammonia. Order R5-2006-0081 established a 1-hour average effluent limitation of 2.14 mg/L based on the NAWQC acute criterion determined using the maximum permitted effluent pH of 8.5 and an AMEL of 0.56 mg/L based on the NAWQC 30-day chronic criterion determined using the maximum permitted effluent pH of 8.5 and the maximum average effluent temperature of 78 F. Consistent with Order R5-2006-0081, the acute criterion used for this Order was determined using the maximum permitted effluent pH of 8.5; however, the chronic criterion was re-calculated using updated paired effluent monitoring data for pH and temperature from May 2008 through April 2011, which resulted in a 30-day chronic criterion of 1.91 mg/L. Whereas the acute and chronic criteria were established directly as 1-hour average and average monthly effluent limitations, this Order includes an MDEL and AMEL calculated according to SIP procedures, as described in section IV.C.3.c.ii.(c). Although the averaging period has been revised from a 1-hour average to an MDEL, the change in averaging period for ammonia is not less stringent than the previous Order because the previous Order required weekly grab samples. Continuous monitoring is necessary to evaluate compliance with a 1-hour average effluent limit. Therefore, the existing 1-hour average effluent limit was effectively a maximum daily effluent limit.

iii. **Chlorine Residual.** The Discharger has upgraded the Facility to employ UV disinfection to all wastewater leaving the Facility. Chlorine is no longer used anywhere in the wastewater treatment process, therefore, chlorine residual no longer has a reasonable potential to cause or contribute to an in-stream excursion above the NAWQC.

iv. **Chlorodibromomethane.** Effluent monitoring data collected between May 2008 through April 2011 indicates that chlorodibromomethane in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the CTR human health criteria.

v. **Chloroform.** Order R5-2006-0081 established effluent limitations for chloroform based on the CalEPA Cancer Potency Factor as a Drinking Water Level of 1.1 µg/L. However, as discussed in section IV.C.3.b.2 of this Fact Sheet, the appropriate water quality objective for the discharge is the Primary MCL for THMs. Effluent monitoring data collected between May 2008 through April 2011 indicates that chloroform in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Primary MCL for THMs.

vi. **Dichlorobromomethane.** Dichlorobromomethane is a disinfection byproduct generated through chlorine contact. Since the Discharger upgraded the Facility to use UV disinfection for all wastewater chlorine is no longer used anywhere in the wastewater treatment process and there is no longer the potential for the generation of dichlorobromomethane. Therefore, the discharge no longer has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

vii. **Iron.** Effluent monitoring data collected between May 2008 through April 2011 indicates that iron in the discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the Secondary MCL.

viii. **Oil and Grease.** The Discharger upgraded to tertiary treatment during the term of Order R5-2006-0081. Oil and grease is not expected to be present in tertiary treated wastewater at concentrations that will cause or contribute to an exceedance of the narrative water quality objective. Additionally, the Discharger's compliance with the requirements of the FOG control program required by WQO 2006-0003 will ensure minimal amounts of oil and grease are discharged into the Facility.

ix. **Settleable Solids.** Effluent monitoring data collected between May 2008 and April 2011 for settleable solids indicates 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 or relaxation of the effluent limitations for aluminum, ammonia, chlorodibromomethane, dichlorobromomethane, chloroform, chlorine residual,

iron, oil and grease, and settleable solids from Order R5-2006-0081 is in accordance with CWA section 402(o)(2)(B)(i), which allows for the relaxation of effluent limitations based on information that was not available at the time of permit issuance.

c. **Turbidity.** Order R5-2006-0081 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 limits 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. The revised Order does not include effluent limitations for turbidity. However, the performance-based specification in this Order is an equivalent limit that is not less stringent, and therefore does not constitute backsliding.

   The revised operational specifications for turbidity are the same as the effluent limitations in Order R5-2006-0081. These revisions are consistent with State regulations implementing recycled water requirements. The revision in the turbidity limitation is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16 because this Order imposes equivalent or more stringent requirements than Order R5-2006-0081 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. The Order requires compliance with applicable federal technology-based standards and with WQBELs where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted surface water 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 removes or relaxes existing effluent limitations for aluminum, chlorine residual, chlorodibromomethane, chloroform, dichlorobromomethane, iron, manganese, oil and grease, settleable solids, and turbidity. The Central Valley Water Board finds that the relaxation of the effluent limitations does not result in an allowed 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.

b. Groundwater. The Discharger utilizes an irrigation pond on the Saddle Creek Golf Course (Pond NC-2D). Title 22 disinfected tertiary recycled water contains constituents such as total dissolved solids (TDS), specific conductivity, and metals. Percolation from the pond may result in an increase in the concentration of these constituents in groundwater. The increase in the concentration of these constituents in groundwater must be consistent with Resolution No. 68-16. Any increase in pollutant concentrations in groundwater must be shown to be necessary to allow wastewater utility service necessary to accommodate housing and economic expansion in the area and must be consistent with maximum benefit to the people of the State of California. Some degradation of groundwater by the Discharger is consistent with Resolution No. 68-16 provided that:

i. the degradation is limited in extent;

ii. the degradation after effective source control, treatment, and control is limited to waste constituents typically encountered in municipal wastewater as specified in the groundwater limitations in this Order;

iii. the Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating best practicable treatment and control (BPTC) measures; and

iv. the degradation does not result in water quality less than that prescribed in the Basin Plan.

Based on monitoring data over the term of the previous permit, the discharge to Pond NC-2D is not causing the underlying groundwater to exceed constituent concentrations greater than background water quality. The discharge thus complies with State Water Board Resolution No. 68-16.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on flow and percent removal requirements for BOD_5 and TSS. The WQBELs consist of restrictions on aluminum, ammonia, BOD_5, electrical conductivity, manganese, nitrate plus nitrite, pH, total coliform organisms, and TSS. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order includes effluent limitations for BOD_5, total coliform organisms, and TSS to meet numeric objectives or protect beneficial uses.

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-12. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow	MGD	--	--	0.95	--	--	DC
Conventional Pollutants							
Biochemical Oxygen Demand (5-day @ 20°C)	mg/L	10	15	20	--	--	TTC
	lbs/day[2]	79	119	158	--	--	
	% Removal	85	--	--	--	--	CFR
pH	standard units	--	--	--	6.5	8.5	BP
Total Suspended Solids	mg/L	10	15	20	--	--	TTC
	lbs/day[2]	79	119	158	--	--	
	% Removal	85	--	--	--	--	CFR
Non-Conventional Pollutants							
Aluminum, Total Recoverable	µg/L	310	623	--	--	--	SEC MCL
Ammonia Nitrogen, Total (as N)	mg/L	0.74	--	2.2	--	--	NAWQC
	lbs/day[2]	5.9	--	17	--	--	
Electrical Conductivity @ 25°C	µmhos/cm	900	--	--	--	--	SEC MCL
Manganese, Total Recoverable	µg/L	97	242	--	--	--	SEC MCL
Nitrate Plus Nitrite (as N)	mg/L	10	--	--	--	--	MCL
Total Coliform Organisms	MPN/100 mL	--	2.2[3]	23[4]	--	240	Title 22

Parameter	Units	Effluent Limitations					Basis[1]
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	

[1] DC – Based on the design capacity of the Facility.
TTC – Based on tertiary treatment capability. These effluent limitations reflect the capability of a properly operated tertiary treatment plant.
CFR – Based on secondary treatment standards contained in 40 CFR Part 133.
BP – Based on water quality objectives contained in the Basin Plan.
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.
SEC MCL – Based on the Secondary Maximum Contaminant Level.
MCL – Based on the Primary Maximum Contaminant Level.
Title 22 – Based on CA Department of Public Health Reclamation Criteria, CCR, Division 4, Chapter 3 (Title 22).

[2] Based on a design average dry weather flow of 0.95 MGD.

[3] Applied as a 7-day median effluent limitation.

[4] Not to be exceeded more than once in any 30-day period.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications

1. Based on effluent data measured at REC-001 and groundwater data collected during the term of the previous Order, the land discharge specifications for discharges of tertiary treated wastewater to Pond NC-2D have been found to be unnecessary to protect the beneficial uses of the groundwater. This Order requires treatment meeting Title 22 tertiary recycled water and effluent limitations to protect all beneficial uses.

G. Water Reclamation Requirements

1. The Discharger uses tertiary treated wastewater for golf course irrigation. The State Water Board adopted Resolution No. 2009-0011 on 3 February 2009 adopting the Recycled Water Policy. The purpose of the Recycled Water Policy was to increase the use of recycled water from municipal wastewater sources that meets the definition in Water Code Section 13050(n), in a manner that implements state and federal water quality laws. When used in compliance with the Policy, Title 22, and all applicable state and federal water quality laws, the State Water Board found that recycled water is safe for the approved uses, and strongly supports recycled water as a safe alternative to potable water for such approved uses. On 7 July 2009, the State Water Board adopted Water Quality Order (WQO) No. 2009-0006-DWQ, General WDRs for Landscape Irrigation Uses of Municipal Recycled Water, the purpose of which was to streamline the regulatory process for uses of recycled water for landscape irrigation. In keeping with the intent of the Recycled Water Policy, this Order contains recycled water prohibitions consistent with WQO No. 2009-0006-DWQ. These requirements are necessary to ensure that the use of reclaimed water does not unreasonably affect present and anticipated beneficial uses of groundwater and surface water.

2. The Discharger uses tertiary treated wastewater for golf course irrigation. In keeping with the intent of the Recycled Water Policy, this Order contains recycled water

specifications consistent with WQO No. 2009-006-DWQ. These requirements are necessary to ensure that the use of reclaimed water does not unreasonably affect present and anticipated uses of groundwater and surface water.

3. 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.

4. 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 fo filtration. The Reclamation Specifications in this Order require that effluent meet Title 22 requirements for disinfected tertiary recycled water, suitable for use on a restricted access golf course and as a source for landscape impoundments.

5. Section 60323(a) of Title 22 states that no person shall produce or supply reclaimed water for direct reuse from a proposed water reclamation plant unless an engineering report is submitted for review and approval by DPH and Central Valley Water Board. Irrigation of golf courses and other landscaping is considered a beneficial reuse, which DPH has granted approval for.

6. The Basin Plan encourages water recycling. The Facility uses treated tertiary effluent for golf course irrigation.

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 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 substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

B. Groundwater

1. The beneficial uses of the underlying ground water are municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

2. Basin Plan water quality objectives to protect the beneficial uses of groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity of groundwater, and taste and odor. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the MCLs in Title 22, CCR. The Basin Plan requires the application of the most stringent objective necessary to ensure that groundwaters do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect municipal and domestic water supply, agricultural supply, or any other beneficial use.

3. State Water Board Resolution No. 68-16 (hereafter Resolution 68-16) requires the Central Valley Water Board in regulating discharge of waste to maintain high quality waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Central Valley Water Board's policies (e.g., quality that exceeds water quality objectives). Resolution 68-16 requires that the discharge be regulated to meet best practicable treatment or control to assure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the State be maintained.

4. The Discharger utilizes aeration lagoons and disposal ponds. Domestic wastewater contains constituents such as total dissolved solids, specific conductivity, pathogens, nitrates, organics, metals and oxygen demanding substances (BOD). Percolation from the lagoons and ponds may result in an increase in the concentration of these constituents in groundwater. The increase in the concentration of these constituents in groundwater must be consistent with Resolution 68-16. Any increase in pollutant concentrations in groundwater must be shown to be necessary to allow wastewater

utility service necessary to accommodate housing and economic expansion in the area and must be consistent with maximum benefit to the people of the State of California. Some degradation of groundwater by the Discharger is consistent with Resolution 68-16 provided that:

a. The degradation is limited in extent;

b. The degradation after effective source control, treatment, and control is limited to waste constituents typically encountered in municipal wastewater as specified in the groundwater limitations in this Order;

c. The Discharger minimizes the degradation by fully implementing, regularly maintaining, and optimally operating best practicable treatment and control (BPTC) measures; and,

d. The degradation does not result in water quality less than that prescribed in the Basin Plan.

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), electrical conductivity (weekly), TSS (weekly), and pH (weekly) have been retained from Order R5-2006-0081. Influent monitoring requirements for total dissolved solids have not been retained from Order R5-2006-0081 as they are not necessary to determine compliance with permit requirements.

B. Effluent Monitoring

1. Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to assess the impacts of the discharge on the receiving stream and groundwater.

2. Effluent monitoring frequencies and sample types for flow (continuous), aluminum (monthly), ammonia (weekly), BOD_5 (weekly), electrical conductivity (weekly), hardness (monthly), manganese (monthly), pH (continuous), temperature (weekly),

total coliform organisms (daily), and TSS (weekly) have been retained from Order R5-2006-0081 to determine compliance with effluent limitations for these parameters, where applicable, and to characterize the effluent.

3. Quarterly monitoring for the first 2 years following the date of permit adoption is included in this Order for oil and grease to verify that oil and grease is not present in the effluent in concentrations that exceed the Basin Plan narrative objective.

4. Monitoring data collected over the term of Order R5-2006-0081 for chlorodibromomethane, fluoride, iron, mercury, methylene blue active substances, methylmercury, settleable solids, standard minerals, sulfates, and tributyltin did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order R5-2006-0081.

5. Monthly monitoring requirements for nitrate and nitrite have been established in this Order to determine compliance with newly established effluent limitations for nitrate plus nitrite.

6. Turbidity is included in this Order as an operational specification as an indicator of the treatment process. The Facility provides UV disinfection prior to discharging to Pond NC-2D. This Order establishes turbidity monitoring requirements prior to the UV disinfection system, as discussed in section VI.E.2 of this Fact Sheet. Therefore, effluent monitoring requirements for turbidity at Discharge Point No. 001 have not been retained from Order R5-2006-0081.

7. Priority pollutant data for the effluent has been provided by the Discharger over the term of Order R5-2006-0081 and was 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. Consistent with Order R5-2006-0081, this Order requires monitoring once during the term of the Order at Discharge Point No. 001 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.

8. 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).

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 §§ 13370, subd. (c), 13372, 13377.) Section 13176 is inapplicable to NPDES permits to the extent it is inconsistent with CWA requirements. (Water Code § 13372, subd. (a).) The holding time requirements are 15 minutes for chlorine residual, dissolved oxygen, and pH, and immediate analysis is required for temperature. (40 C.F.R. § 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 section 13176 for constituents with short holding times.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Annual 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity. Order R5-2006-0081 included quarterly acute toxicity monitoring requirements. However, because of the discharge is infrequent (e.g., typically from June – August), annual monitoring is sufficient to determine compliance with acute toxicity requirements in this Order.

2. **Chronic Toxicity.** Annual chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective. Order R5-2006-0081 included quarterly chronic toxicity monitoring requirements. However, because of the discharge is infrequent (e.g., typically from June – August), annual monitoring is sufficient to determine compliance with chronic toxicity requirements in this Order.

D. Receiving Water Monitoring

1. Surface Water

Order R5-2006-0081 contained receiving water monitoring requirements for Littlejohns Creek. As described in section II.B.2 of this Fact Sheet, although the jurisdictional wetlands are tributary to Littlejohns Creek and during severe wet weather events the wetlands can overflow, Pond NC-2D does not overflow to Littlejohns Creek. If the wetlands do overflow to Littlejohns Creek, the fraction of reclaimed water in the overflows is expected to be minimal because reclaimed water is supplemented with raw water from Lake Tulloch, is used for make-up water only as necessary, is only supplied during summer months, and will be diluted/replaced by the large amounts of storm water runoff into the wetlands. Due to the de minimis amount of reclaimed water expected in overflows from the wetlands to Littlejohns Creek and because this Order includes effluent limitations which must be met at the point of discharge to Pond NC-2D, the Order discontinues receiving water monitoring for Littlejohns Creek.

2. Groundwater

a. Water Code section 13267 states, in part, "(a) A Regional Water Board, in establishing…waste discharge requirements… may investigate the quality of any waters of the state within its region" and "(b) (1) In conducting an investigation…, the Regional Water Board may require that any person who… discharges… waste…that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Water Board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports." The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained

from the reports. In requiring those reports, Regional Water Boards shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports. The Monitoring and Reporting Program is issued pursuant to Water Code section 13267. Based on effluent data measured at REC-001 and groundwater data collected during the term of the previous Order, the groundwater monitoring for irrigation of the Saddle Creek Golf Course have been found to be unnecessary to protect the beneficial uses of the groundwater, and thus has been removed.

E. Other Monitoring Requirements

1. Water Supply Monitoring

Water supply monitoring requirements for the Facility are contained in Order R5-2010-0070. Therefore, consistent with Order R5-2006-0081, this Order does not contain water supply monitoring requirements.

2. UV Disinfection System Monitoring

UV system specifications and monitoring and reporting is required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses) in the wastewater. UV disinfection system monitoring requirements are imposed pursuant to requirements established by the DPH for Title 22 tertiary disinfected recycled water, and the National Water Research Institute (NWRI), and American Water Works Association Research Foundation NWRI/AWWARF's "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*".

3. Land Discharge Monitoring

Previous Order R5-2006-0081 included monitoring of Pond NC-2D to ensure compliance with the land discharge specifications in this Order. Weekly monitoring for freeboard, berm seepage, dissolved oxygen, electrical conductivity, and odors were required in Order R5-2006-0081. Based on the review of the data, it has been found that the monitoring is unnecessary and has not been continued in this Order.

4. Reclamation Monitoring

Reclamation monitoring is required to assess compliance with Reclamation 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. The reclamation monitoring in this Order is consistent with the State Water Board's General Waste Discharge Requirements for Landscape Irrigation Uses of Municipal Recycled Water.

5. Effluent Characterization Study

An effluent monitoring study is required to ensure adequate information is available for the next permit renewal. Once during the third or fourth year following the date of permit adoption, the Discharger is required to conduct monitoring of the effluent at Monitoring Location REC-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 TRE. This Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity limitation based on that objective.

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 for select metals. 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.

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-8.00) Based on whole effluent chronic toxicity testing performed by the Discharger from November 2006 through December 2009, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

This provision requires the Discharger to develop a TRE Workplan in accordance with USEPA guidance. In addition, the provision provides a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if toxicity has been 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.

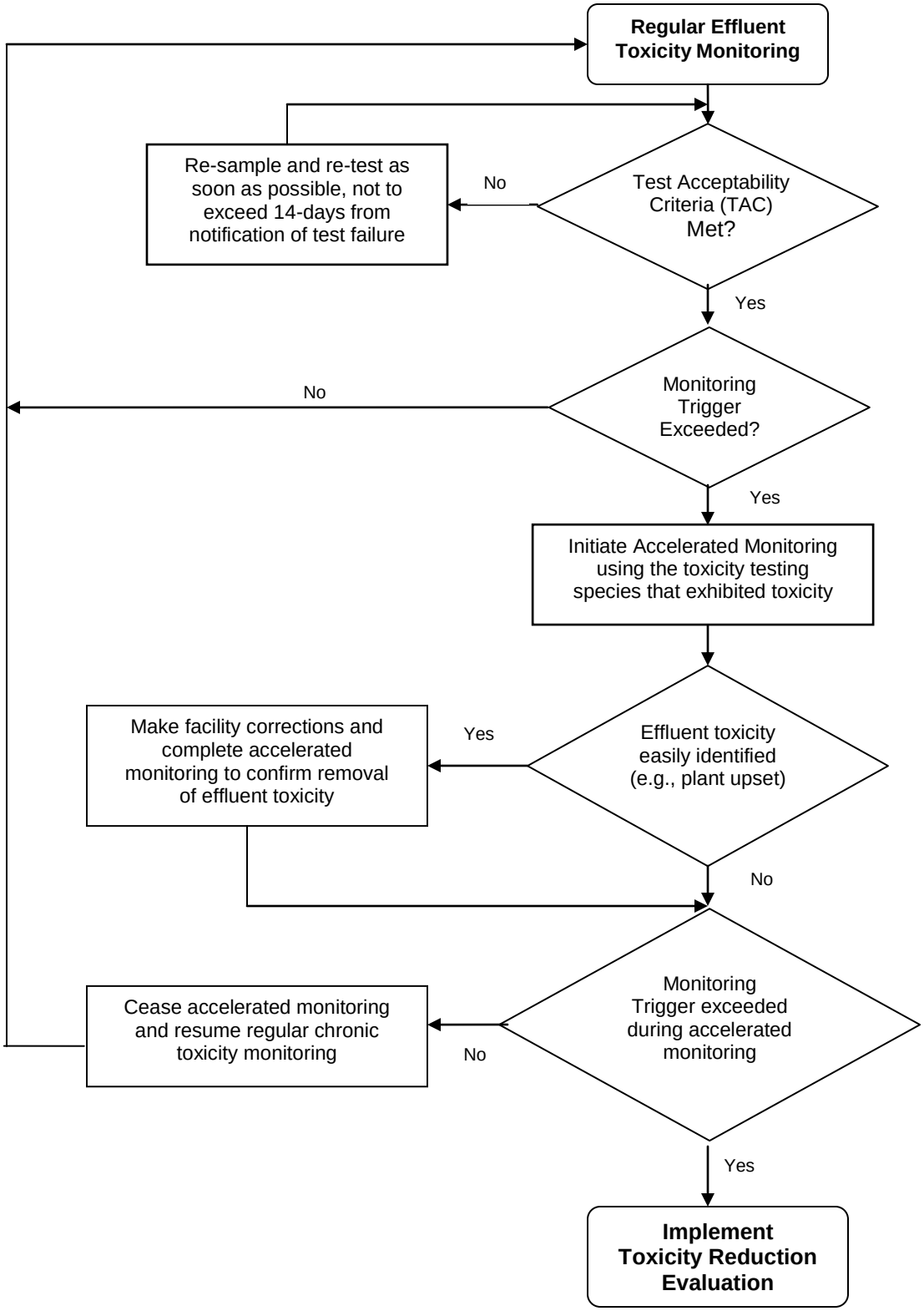
The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water 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 Workplan 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



b. Pond NC-2D Management Plan. By **1 September 2013**, the Discharger shall update and submit the Pond Management Plan describing how the reclaimed water irrigation receiving pond, Pond NC-2D, will be managed consistent with the 404 permit. This requirement is retained from Order R5-2006-0081.

3. Best Management Practices and Pollution Prevention

a. Salinity Evaluation and Minimization Plan. 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 the jurisdictional wetlands.

4. Construction, Operation, and Maintenance Specifications

a. UV Disinfection System Operating Specifications. UV disinfection system specifications and monitoring and reporting requirements are required to ensure that adequate UV dosage is applied to the wastewater to inactivate pathogens (e.g., viruses) in the wastewater. UV dosage is dependent on several factors such as UV transmittance, UV power setting, wastewater turbidity, and wastewater flow through the UV disinfection system. Monitoring and reporting of these parameters is necessary to determine compliance with minimum dosage requirements established by the DPH and the NWRI and AWWARF's "*Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse*" first published in December 2000 revised as a Second Edition dated May 2003. In addition, a memorandum dated 1 November 2004 issued by DPH to Central Valley Water Board executive officers recommended that provisions be included in permits to water recycling treatment plants employing UV disinfection requiring dischargers to establish fixed cleaning frequency of quartz sleeves as well as include provisions that specify minimum delivered UV dose that must be maintained (as recommended by the NWRI/AWWARF UV Disinfection Guidelines).

Turbidity has a major advantage for monitoring filter performance, allowing immediate detection of filter failure and rapid corrective action. The operational specification requires that turbidity prior to disinfection shall not exceed 2 NTU as a daily average; 5 NTU, more than 5 percent of the time within a 24-hour period; and an instantaneous maximum of 10 NTU.

Minimum UV dosage and turbidity specifications are included as operating criteria in section VI.C.4.b of this Order and section IX.B of the Monitoring and Reporting Program (Attachment E) to ensure that adequate disinfection of wastewater is achieved.

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

a. Sludge/Biosolids Discharge Specifications. The current biosolids treatment and controls are regulated by WDR Order R5-2010-0070.

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 an NPDES permit for the Facility. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDRs. The Central Valley Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through the following **[Describe Notification Process (e.g., newspaper name and date)]**

B. Written Comments

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

To be fully responded to by staff and considered by the Central Valley Water Board, written comments must be received at the Central Valley Water Board offices by 5:00 p.m. on **8 April 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: 30/31 May 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 www.waterboards.ca.gov/centralvalley where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Central Valley Water Board regarding the final WDRs. The petition must be received by the State Water Board within 30 days of the Regional 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 address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (916) 464-3291.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Central Valley Water Board, reference this Facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Kathleen Harder at (916) 464-4778.

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	248[1]	NA	200	750[2]	--	--	--	--	200	Yes
Ammonia Nitrogen, Total (as N)	mg/L	6.4	NA	1.9	2.14[2]	4.77[3]/1.91[4]	--	--	--	--	Yes
Chloroform	µg/L	51	NA	80[5]	--	--	--	--	--	80[5]	No
Copper, Total Recoverable	µg/L	5.8	NA	6.5	9.5	6.5	1,300	--	--	1,000	No
Chlorodibromomethane	µg/L	<0.17	NA	0.41	--	--	0.41	34	--	80[5]	No
Dichlorobromomethane	µg/L	ND	NA	0.56	--	--	0.56	46	--	80[5]	No
Electrical Conductivity @ 25°C	µmhos/cm	855	NA	900	--	--	--	--	--	900	Yes[6]
Iron, Total Recoverable	µg/L	50[1]	NA	300	--	--	--	--	--	300	No
Manganese, Total Recoverable	µg/L	121[1]	NA	50	--	--	100	--	--	50	Yes
Nitrate plus Nitrite (as N)	mg/L	NA	NA	10	NA	NA	10	NA	NA	10	Yes[6]
Sulfate	mg/L	33[1]	NA	250	--	--	--	--	--	250	No

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) Represents the maximum observed annual average concentration for comparison with the MCL.
(2) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 1-hour Average.
(3) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 4-day Average.
(4) USEPA National Recommended Ambient Water Quality Criteria, Freshwater Aquatic Life Protection, 30-day Average.
(5) Represents the Primary MCL for total trihalomethanes, which includes bromoform, chlorodibromomethane, chloroform, and dichlorobromomethane.
(6) See section IV.C.3.c of the Fact Sheet.

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	1.91	--	--	--	2.14	0.14	0.3	1.91	0.54	1.03	0.3	2.45	0.74	7.15	2.2	0.74	2.2

[1] As discussed in section IV.C.4 of the Fact Sheet (Attachment F), calculation of effluent limitations for the protection of human health and aquatic life are determined without the allowance of dilution credits.

Secondary MCL WQBEL's Calculations									
Parameter	Units	Criteria	Mean Background Concentration	Dilution Factor	MDEL/AMEL Multiplier	AMEL Multiplier	AMEL	MDEL	AWEL
Aluminum, Total Recoverable	µg/L	200	--	--	2.01	1.55	310[1]	--	623[1]
Manganese, Total Recoverable	µg/L	50	--	--	2.50	1.93	97[1]	--	242[1]

[1] Calculated by setting the LTA equal to the Secondary MCL and using the AMEL multiplier to set the AMEL. The AWEL was calculated from the AMEL using the MDEL/AMEL multiplier. (Table 2 of the SIP)

ATTACHMENT I – EFFLUENT 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/iswp/index.html). 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. Drinking water constituents. Constituents for which drinking water Maximum Contaminant Levels (MCLs) have been prescribed in the California Code of Regulation are included in the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (Basin Plan). The Basin Plan defines virtually all surface waters within the Central Valley Region as having existing or potential beneficial uses for municipal and domestic supply. The Basin Plan further requires that, at a minimum, water designated for use as domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the MCLs contained in the California Code of Regulations.

B. Effluent temperature. This is both a concern for application of certain temperature-sensitive constituents, such as fluoride, and for compliance with the Basin Plan's thermal discharge requirements.

C. Effluent hardness and pH. These are necessary because several of the CTR constituents are hardness and pH dependent.

II. Monitoring Requirements.

A. Once Per Permit Term Monitoring. Once during the third or fourth year following adoption of the permit, priority pollutant samples shall be collected from the effluent at Monitoring Location REC-001 and analyzed for the constituents listed in Table I-1. The results of such monitoring shall be submitted to the Central Valley Water Board within 6 months following sampling event. Each individual monitoring event shall provide representative sample results for the effluent.

B. Sample type. All effluent samples shall be taken in accordance with an approved work plan required in the Monitoring Reporting Program (Attachment E, section X.D.4).

C. Additional Monitoring and 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 and Other Constituents of Concern

CTR #	Constituent	CAS Number	Maximum Reporting Levels µg/L or noted
28	1,1-Dichloroethane	75343	1
30	1,1-Dichloroethene	75354	0.5
41	1,1,1-Trichloroethane	71556	2
42	1,1,2-Trichloroethane	79005	0.5
37	1,1,2,2-Tetrachloroethane	79345	0.5
75	1,2-Dichlorobenzene (volatile)	95501	2
75	1,2-Dichlorobenzene (semivolatile)	95501	2
29	1,2-Dichloroethane	107062	0.5
	cis-1,2-Dichloroethene	156592	--
31	1,2-Dichloropropane	78875	0.5
101	1,2,4-Trichlorobenzene	120821	1
76	1,3-Dichlorobenzene (volatile)	541731	2
76	1,3-Dichlorobenzene (semivolatile)	541731	2
32	1,3-Dichloropropene	542756	0.5
77	1,4-Dichlorobenzene (volatile)	106467	2
77	1,4-Dichlorobenzene (semivolatile)	106467	2
17	Acrolein	107028	2
18	Acrylonitrile	107131	2
19	Benzene	71432	0.5
20	Bromoform	75252	2
34	Bromomethane	74839	2
21	Carbon tetrachloride	56235	0.5
22	Chlorobenzene (mono chlorobenzene)	108907	2
24	Chloroethane	75003	2
25	2- Chloroethyl vinyl ether	110758	1
26	Chloroform	67663	2
35	Chloromethane	74873	2
23	Dibromochloromethane	124481	0.5
27	Dichlorobromomethane	75274	0.5
36	Dichloromethane	75092	2
33	Ethylbenzene	100414	2
88	Hexachlorobenzene	118741	1
89	Hexachlorobutadiene	87683	1
91	Hexachloroethane	67721	1
94	Naphthalene	91203	10
38	Tetrachloroethene	127184	0.5

CTR #	Constituent	CAS Number	Maximum Reporting Levels µg/L or noted
39	Toluene	108883	2
40	trans-1,2-Dichloroethylene	156605	1
43	Trichloroethene	79016	2
44	Vinyl chloride	75014	0.5
	Methyl-tert-butyl ether (MTBE)	1634044	--
	Trichlorofluoromethane	75694	--
	1,1,2-Trichloro-1,2,2-Trifluoroethane	76131	--
	Styrene	100425	--
	Xylenes	1330207	--
60	1,2-Benzanthracene	56553	5
85	1,2-Diphenylhydrazine	122667	1
45	2-Chlorophenol	95578	5
46	2,4-Dichlorophenol	120832	5
47	2,4-Dimethylphenol	105679	2
49	2,4-Dinitrophenol	51285	5
82	2,4-Dinitrotoluene	121142	5
55	2,4,6-Trichlorophenol	88062	10
83	2,6-Dinitrotoluene	606202	5
50	2-Nitrophenol	25154557	10
71	2-Chloronaphthalene	91587	10
78	3,3'-Dichlorobenzidine	91941	5
62	3,4-Benzofluoranthene	205992	10
52	4-Chloro-3-methylphenol	59507	5
48	4,6-Dinitro-2-methylphenol	534521	10
51	4-Nitrophenol	100027	10
69	4-Bromophenyl phenyl ether	101553	10
72	4-Chlorophenyl phenyl ether	7005723	5
56	Acenaphthene	83329	1
57	Acenaphthylene	208968	10
58	Anthracene	120137	10
59	Benzidine	92875	5
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	2
63	Benzo(g,h,i)perylene	191242	5
64	Benzo(k)fluoranthene	207089	2
65	Bis(2-chloroethoxy) methane	111911	5
66	Bis(2-chloroethyl) ether	111444	1

CTR #	Constituent	CAS Number	Maximum Reporting Levels µg/L or noted
67	Bis(2-chloroisopropyl) ether	39638329	10
68	Bis(2-ethylhexyl) phthalate	117817[1]	5
70	Butyl benzyl phthalate	85687	10
73	Chrysene	218019	5
81	Di-n-butylphthalate	84742	10
84	Di-n-octylphthalate	117840	10
74	Dibenzo(a,h)-anthracene	53703	0.1
79	Diethyl phthalate	84662	10
80	Dimethyl phthalate	131113	10
86	Fluoranthene	206440	10
87	Fluorene	86737	10
90	Hexachlorocyclopentadiene	77474	5
92	Indeno(1,2,3-c,d)pyrene	193395	0.05
93	Isophorone	78591	1
98	N-Nitrosodiphenylamine	86306	1
96	N-Nitrosodimethylamine	62759	5
97	N-Nitrosodi-n-propylamine	621647	5
95	Nitrobenzene	98953	10
53	Pentachlorophenol	87865	1
99	Phenanthrene	85018	5
54	Phenol	108952	50
100	Pyrene	129000	10
	Aluminum	7429905	--
1	Antimony	7440360	5
2	Arsenic	7440382	10
15	Asbestos	1332214	--
	Barium	7440393	--
3	Beryllium	7440417	2
4	Cadmium	7440439	0.5
5a	Chromium (total)	7440473	50
5b	Chromium (VI)	18540299	10
6	Copper	7440508	2
14	Cyanide	57125	5
	Fluoride	7782414	--
	Iron	7439896	--
7	Lead	7439921	0.5

CTR #	Constituent	CAS Number	Maximum Reporting Levels µg/L or noted
8	Mercury	7439976	0.5
	Manganese	7439965	--
	Molybdenum	7439987	--
9	Nickel	7440020	5
10	Selenium	7782492	5
11	Silver	7440224	1
12	Thallium	7440280	1
	Tributyltin	688733	--
13	Zinc	7440666	20
110	4,4'-DDD	72548	0.05
109	4,4'-DDE	72559	0.05
108	4,4'-DDT	50293	0.01
112	alpha-Endosulfan	959988	0.02
103	alpha-Hexachlorocyclohexane (BHC)	319846	0.01
	Alachlor	15972608	--
102	Aldrin	309002	0.005
113	beta-Endosulfan	33213659	0.01
104	beta-Hexachlorocyclohexane	319857	0.005
107	Chlordane	57749	0.1
106	delta-Hexachlorocyclohexane	319868	0.005
111	Dieldrin	60571	0.01
114	Endosulfan sulfate	1031078	0.05
115	Endrin	72208	0.01
116	Endrin Aldehyde	7421934	0.01
117	Heptachlor	76448	0.01
118	Heptachlor Epoxide	1024573	0.01
105	Lindane (gamma-Hexachlorocyclohexane)	58899	0.02
119	PCB-1016	12674112	0.5
120	PCB-1221	11104282	0.5
121	PCB-1232	11141165	0.5
122	PCB-1242	53469219	0.5
123	PCB-1248	12672296	0.5
124	PCB-1254	11097691	0.5
125	PCB-1260	11096825	0.5
126	Toxaphene	8001352	0.5
	Atrazine	1912249	--

CTR #	Constituent	CAS Number	Maximum Reporting Levels µg/L or noted
	Bentazon	25057890	--
	Carbofuran	1563662	--
	2,4-D	94757	--
	Dalapon	75990	--
	1,2-Dibromo-3-chloropropane (DBCP)	96128	--
	Di(2-ethylhexyl)adipate	103231	--
	Dinoseb	88857	--
	Diquat	85007	--
	Endothal	145733	--
	Ethylene Dibromide	106934	--
	Glyphosate	1071836	--
	Methoxychlor	72435	--
	Molinate (Ordram)	2212671	--
	Methylene Blue Activated Substances (MBAS)		--
	Oxamyl	23135220	--
	Picloram	1918021	--
	Simazine (Princep)	122349	--
	Thiobencarb	28249776	--
16	2,3,7,8-TCDD (Dioxin)	1746016	--
	2,4,5-TP (Silvex)	93765	--
	Diazinon	333415	--
	Chlorpyrifos	2921882	--
	Ammonia (as N)	7664417	--
	Chloride	16887006	--
	Flow		--
	Hardness (as $CaCO_3$)		--
	Foaming Agents (MBAS)		--
	Nitrate (as N)	14797558	--
	Nitrite (as N)	14797650	--
	pH		--
	Phosphorus, Total (as P)	7723140	--
	Specific conductance (EC)		--
	Sulfate		--
	Sulfide (as S)		--
	Sulfite (as SO_3)		--
	Temperature		--

CTR #	Constituent	CAS Number	Maximum Reporting Levels µg/L or noted
	Total Dissolved Solids (TDS)		--

[1] Sampling and analysis of bis (2-ethylhexyl) phthalate shall be conducted using ultra-clean techniques that reduce the possibility of sample contamination.

ATTACHMENT J - RECYCLED WATER USE SIGNAGE