CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

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ORDER NO. R5-2007-XXXX
NPDES NO. CA0078671

WASTE DISCHARGE REQUIREMENTS FOR THE EL DORADO IRRIGATION DISTRICT EL DORADO HILLS WASTEWATER TREATMENT PLANT EL DORADO COUNTY

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

Table 1. Discharger Information

Discharger	El Dorado Irrigation District
Name of Facility	El Dorado Hills Wastewater Treatment Plant (WWTP)
Facility Address	4625 Latrobe Road
	El Dorado, CA 95762
	El Dorado County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a **major** discharge.	

The discharge by the El Dorado Irrigation District from the discharge point 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	38º, 38', 12" N	121º, 3', 40" W	Carson Creek

Table 3. Administrative Information

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

IT IS HEREBY ORDERED, that Order No. **R5-01-135** is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code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 Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

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

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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	El Dorado Irrigation District
Name of Facility	El Dorado Hills Wastewater Treatment Plant (WWTP)
Facility Address	4625 Latrobe Road
	El Dorado, CA 95762
	El Dorado County
Facility Contact, Title, and Phone	David Powell, Assistant Director-Facilities, 530-622-4513
Mailing Address	2890 Mosquito Road, Placerville CA 95667
Type of Facility	Publicly Owned Treatment Works
Facility Design Flow	4.0 Million Gallons Per Day (mgd) Average ~~Daily Discharge~~Dry Weather Flow (AD~~D~~WF)

II. FINDINGS

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

A. Background. El Dorado Irrigation District (hereinafter Discharger) is currently discharging pursuant to Order No. R5-01-135 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0078671. The Discharger submitted a Report of Waste Discharge, dated 27 December 2005**,** and applied for a NPDES permit renewal to discharge up to 4.0 mgd AD~~D~~WF of treated wastewater from El Dorado Hills Wastewater Treatment Plant**,** hereinafter Facility. The application was deemed complete on 26 April 2006.

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 the Publicly Owned Wastewater Treatment Works. The treatment system consists of headworks, screening and grit removal, primary clarifiers, activated sludge basins with nitrification, biological nutrient removal tanks, secondary clarifiers, tertiary filters, dissolved air flotation sludge thickening, belt filter press, anaerobic digester, and chlorine contact disinfection. Chlorine contact disinfection will be replaced with ultraviolet (UV) disinfection during the term of this permit. Wastewater is discharged from Discharge 001 (see table on cover page) to the Carson Creek, a water of the United States, and a tributary to Cosumnes River within the San Joaquin River Watershed. Attachment B provides a map of the area around the Facility. Attachment C-1 provides a flow schematic of the Facility.

C. Legal Authorities. This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California 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 Regional 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 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 (CFR)[1] 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 Part 133 and Best Professional Judgment (BPJ) in accordance with Part 125, section 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

G. Water Quality-based Effluent Limitations. Section 301(b) of the CWA and section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards. 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 Regional Water Board has considered the factors listed in CWC 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 Section IV.C.3.u.

Section 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,

[1] All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

water quality-based effluent limitations (WQBELs) must be established using: (1) EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed State criterion or policy interpreting the State's narrative criterion, supplemented with other relevant information, as provided in 40 CFR section 122.44(d)(1)(vi).

H. Water Quality Control Plans. The Regional Water Board adopted a Water Quality Control Plan, Fourth Edition (Revised August 2006), 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." The Basin Plan does not specifically identify beneficial uses for Carson Creek, but does identify present and potential uses for Cosumnes River, to which Carson Creek, via Deer Creek, is tributary. These beneficial uses are as follows: municipal and domestic supply; agricultural supply; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; cold and warm freshwater migration of aquatic organisms; cold and warm freshwater spawning, reproduction, and /or early development; and wildlife habitat. 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 Carson Creek are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Carson Creek, a tributary of Cosumnes River, via Dear Creek	Existing: Municipal and domestic water supply (MUN); Agricultural supply (AGR); contact (REC-1) and non-contact (REC-2) water recreation; Warm freshwater habitat (WARM); Cold freshwater habitat (COLD); Warm and cold freshwater migration of aquatic organisms (MIGR); Warm and cold freshwater spawning, reproduction, and/or early development (SPWN); and wildlife habitat (WILD). Existing Groundwater: Municipal and domestic water supply (MUN); Industrial service supply (IND); Industrial process supply (PRO); Agricultural supply(AGR).

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." Carson Creek is listed as a WQLS for manganese and aluminum in the 303(d) list of impaired water bodies. Requirements and Effluent Limitations for these constituents and waste discharge requirements in 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 forty 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 April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on 18 May 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on 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 Clean Water Act section 301 and with 40 CFR 122.44(d). There are exceptions to this general rule. The State Water Board has concluded that where the Regional Water Board's Basin Plan allows for schedules of compliance and the Regional Water Board is newly interpreting a narrative standard, it may include schedules of compliance in the permit to meet effluent limits that implement a narrative standard. See In the Matter of Waste Discharge Requirements for Avon Refinery (State Board Order WQ 2001-06 at pp. 53-55). See also Communities for a Better Environment et al. v. State Water Resources Control Board, 34 Cal.Rptr.3d 396, 410 (2005). The Basin Plan for the Sacramento and San Joaquin Rivers includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives that are adopted after the date of adoption of the Basin Plan, which was 25 September 1995 (See Basin Plan at page IV-16). Consistent with the State Water Board's Order in the CBE matter, the Regional Water Board has the discretion to include compliance schedules in NPDES permits when it is

including an effluent limitation that is a "new interpretation" of a narrative water quality objective. This conclusion is also consistent with the United States Environmental Protection Agency policies and administrative decisions. See, e.g., Whole Effluent Toxicity (WET) Control Policy. The Regional Water Board, however, is not required to include a schedule of compliance, 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 Regional 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 Basin Plan, should consider feasibility of achieving compliance, and must impose a schedule that is as short as practicable to achieve compliance with the objectives, criteria, or effluent limit based on the objective or criteria.

For CTR constituents, Section 2.1 of the SIP provides that, based on a Discharger's request and demonstration that it is infeasible for an existing Discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or 18 May 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation that exceeds 1 year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new or revised water quality objective. This Order includes compliance schedules and interim effluent limitations and/or discharge specifications. A detailed discussion of the basis for the compliance schedule(s) and interim effluent limitation(s) and/or discharge specifications is included in the Fact Sheet.

L. Alaska Rule. On 30 March 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes. (40 C.F.R. § 131.21; 65 Fed. Reg. 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. ~~M.~~ Stringency of Requirements for Individual Pollutants. This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD_5 and TSS. The water quality-based effluent limitations consist of restrictions on turbidity and pathogens. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards. These limitations are

more stringent than required by the CWA. Specifically, this Order includes effluent limitations for BOD, TSS, turbidity and pathogens that are more stringent than applicable federal standards, but that are nonetheless necessary to meet numeric objectives or protect beneficial uses. The rationale for including these limitations is explained in the Fact Sheet.

In addition, the Regional Water Board has considered the factors in Water Code section 13241 in establishing these requirements. The Regional Water Board finds that more stringent than federal effluent limitations for BOD, and TSS are necessary to protect the beneficial uses of the receiving waters. In Finding No. 6 of the previous Order, the Regional Water Board found that the Discharger implemented tertiary activated sludge treatment technology for the purpose of removing pollutants that exceeded, or had the reasonable potential to exceed water quality objectives. Also, in Finding No. 11 of the previous Order, the Regional Water Board found that, in order to protect the beneficial uses of public contact recreation (REC-1) the California Department of Health Services (DHS) recommended that wastewater be oxidized, coagulated, filtered and disinfected for adequate pathogen reduction. The Discharger currently provides tertiary treatment for discharge to surface water when the receiving stream to effluent ratio is less than 20:1 and when wastewater is reclaimed for non-restricted. (The Discharger reclaims wastewater under a Master Reclamation Permit issued to the Discharger in accordance with Title 22 of the California Code of Regulations.) Lastly, the Discharger plans to implement ultraviolet (UV) disinfection to meet water quality based effluent limitations for total trihalomethanes (TTHMs) and DHS requirements for pathogen reduction to protect the REC-1 beneficial use of the receiving water.

~~The rationale for including these limitations is explained in the Fact Sheet. In addition, the Regional Water Board has considered the factors in Water Code section 13241 in establishing these requirements.~~

Water quality-based effluent limitations 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 water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to 40 CFR section 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the CTR-SIP, which was approved by USEPA on 1 May 2001. 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 section 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. ~~**N.**~~ **Antidegradation Policy.** Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 is consistent with 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 Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The Discharger submitted an Antidegradation Analysis Report in accordance with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16 stating that in order to maintain beneficial uses of the receiving water and to limit degradation of the receiving water, the Discharger operates a wastewater treatment process that meets or exceeds the highest statutory and regulatory requirements which meets or exceeds Best Practical Treatment or Control (BPTC).

The Regional Water Board finds that the Discharger implements water conservation measures, utilizes tertiary treatment technology, and reclaims treated wastewater as the means or minimizing degradation and discharges in accordance with federal and State antidegradation policies. Therefore, the Regional Water Board finds that the Dsicharger is implementing all reasonable alternatives to discharge, and ~~As discussed in detail in the Fact Sheet~~ the permitted discharge allows important economic and social development to occur. Therefore, this Order is in accordance with ~~is consistent with~~ the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

O. Anti-Backsliding Requirements. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

P. Monitoring and Reporting. Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

Q. Standard and Special Provisions. Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet.

R. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections IV.B, IV.C, V.B, and VI.C.2.d 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.

S. Notification of Interested Parties. The Regional 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. Details of notification are provided in the Fact Sheet of this Order.

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

III. DISCHARGE PROHIBITIONS

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

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).

C. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.

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

E. The Discharger shall not bypass the Ultraviolet (UV) disinfection system once operational prior to discharge to the receiving water except as allowed by Federal Standard Provisions I.G. (Attachment D). "Bypass" for preventive or operational maintenance is not allowed unless it meets the conditions of Section I.G.3 (Attachment D).

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached Monitoring and Reporting Program (Attachment E):

a. The Discharger shall maintain compliance with the following effluent limitations:

Table 6a. Concentration Based Final Effluent Limitations

Parameter	Units	Final Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Settleable Solids	ml/L	0.1	---	0.2	---	---
pH	standard units	---	---	---	6.5	8.5
Bis (2-Chloroethyl) ether	µg/L	0.031	---	0.062	---	---
Bis (2-ethylhexyl) phthalate	µg/L	1.8	---	3.6	---	---
Carbon Tetrachloride	µg/L	0.25	---	0.50	---	---
Cyanide	µg/L	4.26	---	8.54	---	---
Dibromochloromethane	µg/L	0.41	---	0.80	---	---
Dichlorobromomethane	µg/L	0.56	---	0.93	---	---
Nitrate (N)	mg/L	10	---	---	---	---
Persistent Chlorinated Hydrocarbon Pesticides	µg/L	ND[1]	---	---	---	---
Total Trihalomethanes (TTHM)	µg/L	80	---	---	---	---
Zinc, Total Recoverable	µg/L	23.9	---	69.0	---	---

[1]Detection limits shall be equal to or less than the lowest minimum level published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (known as the State Implementation Plan or SIP). For persistent chlorinated hydrocarbon pesticides not listed in Appendix 4, the lowest possible detectable level shall be used with a maximum acceptable detection level of 0.05 µg/L. Persistent chlorinated hydrocarbon pesticides include, but are not limited to aldrin, alpha BHC, beta BHC, delta BHC, lindane (gamma BHC), captan, 2,4-D, 2,4-DB, 2,4-D Compounds, 4,4'-DDD, 4,4'-DDE, 4,4' DDT, chlordane, dalapon, dicamba, dichloran, dichloroprop, dicofol, dieldrin, dinoseb, endrin, endrin aldehyde, alpha endosulfan, beta endosulfan, endosulfan sulfate, heptachlor, heptachlor epoxide, hexachlorobenzene, isodrin (an isomer of aldrin), kepone (chlordecone), MCPA, MCPP, methoxychlor, mirex, PCNB (pentachloronitrobenzene), perthane, strobane, 2,4,5-T, 2,4,5,TP (silvex), 2,4,5-T compounds, and toxaphene. All peaks detected during the laboratory analysis other than those identified as persistent chlorinated hydrocarbon pesticides listed above are also to be reported, along with any explanation provided by the laboratory pertaining to what pollutants those peaks may indicate a presence of.

Table 6b. Concentration and Mass Based Final Effluent Limitations (based on 3.0 mgd ADDWF)

Parameter	Units	Final Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Aluminum, Total Recoverable	µg/L	59	---	161	---	---
	lbs/day	1.48	---	4.03	---	---
Ammonia (as Nitrogen)	mg/L	0.431.07	---	0.872.14	---	---
	lbs/day[1]	10.825.0	---	21.853.5	---	---
Copper, Total Recoverable	µg/L	4.62	---	7.6	---	---
	lbs/day	0.12	---	0.19	---	---
When flow in Carson Creek provides less than a minimum stream flow-to-effluent dilution of 20:1[2]:						
Biochemical Oxygen Demand (BOD) 5-day @ 20°C	mg/L	10	15	30	---	---
	lbs/day[1]	250	375	750	---	---
Total Suspended Solids (TSS)	mg/L	10	15	30	---	---
	lbs/day[1]	250	375	750	---	---
When flow in Carson Creek provides a minimum stream flow-to-effluent dilution of 20:1[2]:						
Biochemical Oxygen Demand (BOD) 5-day @ 20°C	mg/L	30	45	60	---	---
	lbs/day[1]	750	1130	1500	---	---
Total Suspended Solids (TSS)	mg/L	30	45	60	---	---
	lbs/day[1]	750	1130	1500	---	---

[1] Based on an ADWF of 3.0 mgd (see Section VII.J. for compliance determination regarding ADWF).
[2] The coagulation system and filters shall be used to the maximum extent possible on a year-round basis.

Table 6c. Concentration and Mass- Based Final Effluent Limitations (based on 4.0 mgd ADDWF)

Parameter	Units	Final Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Aluminum, Total Recoverable	µg/L	59.0	---	161.0	---	---
	lbs/day	2.0	---	5.4	---	---
Ammonia (as Nitrogen)	mg/L	0.431.07	---	0.872.14	---	---
	lbs/day[1]	14.435.7	---	29.071.4	---	---
Copper, Total Recoverable	µg/L	4.62	---	7.6	---	---
	lbs/day	0.154	---	0.255	---	---
When flow in Carson Creek provides less than a minimum stream flow-to-effluent dilution of 20:1[2]:						
BOD 5-day @ 20°C	mg/L	10	15	30	---	---
	lbs/day[1]	334	500	1000	---	---
TSS	mg/L	10	15	30	---	---

Parameter	Units	Final Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
	lbs/day[1]	334	500	1000	---	---
When flow in Carson Creek provides a minimum stream flow-to-effluent dilution of 20:1[2]:						
Biochemical Oxygen Demand (BOD) 5-day @ 20°C	mg/L	30	45	60	---	---
	lbs/day[1]	1000	1500	2000	---	---
Total Suspended Solids (TSS)	mg/L	30	45	60	---	---
	lbs/day[1]	1000	1500	2000	---	---

[1] Based on an ADWF of 4.0 mgd (see Section VII.J. for compliance determination regarding ADWF).
[2] The coagulation system and filters shall be used to the maximum extent possible on a year-round basis.

b. **Percent Removal:** The average monthly percent removal of BOD 5-day 20°C and total suspended solids 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. **Total Residual Chlorine.** Effluent total residual chlorine shall not exceed:

   i. 0.01 mg/L, as a 4-day average; and
   ii. 0.02 mg/L, as a 1-hour average.

e. **Turbidity[1].** When flow in Carson Creek provides less than a minimum stream flow-to-effluent dilution of 20:1, effluent total coliform organisms shall not exceed:

   i. 2 NTU, as a daily average; and
   ii. 5 NTU, more than 5% of the time within a 24-hour period; and
   iii. 10 NTU, at any time.

   1 The coagulation system and filters shall be used to the maximum extent possible on a year-round basis.

f. **Total Coliform Organisms[1].** When flow in Carson Creek provides less than a minimum stream flow-to-effluent dilution of 20:1, effluent total coliform organisms shall not exceed:

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

   When flow in Carson Creek provides a minimum stream flow-to-effluent dilution of 20:1, effluent total coliform organisms shall not exceed:

   ~~i.2.2 most probable number (MPN) per 100 mL, as a 7-day median; and~~

iv. 23 MPN/100 mL, ~~more than once in any 30-day period~~as a monthly median, and

~~iii.~~v. ~~240~~ 500 MPN/100 mL, at any time.

1 The coagulation system and filters shall be used to the maximum extent possible on a year-round basis.

g. **Average ~~Daily~~ Dry ~~Discharge~~ Weather Flow (AD~~D~~WF).** The Average ~~Daily~~ Dry ~~Discharge~~ Weather Flow shall not exceed 3.0 mgd until completion of WWTP expansion whereupon Average ~~Daily~~ Dry ~~Discharge~~ Weather Flow shall not exceed 4.0 mgd.

h. **Total Mercury.** The total monthly mass discharge of total mercury shall not exceed 0.0039 pounds/month~~ at 3.0 mgd ADDF and 0.0052 pounds/month at 4.0 mgd ADDF~~. This performance-based limitation shall be in effect until the Regional Water Board establishes final effluent limitations after adoption of a mercury Delta TMDL.

i. **Iron, Total Recoverable.** The Average Annual Effluent Limitation (AAEL) concentration for total recoverable iron shall not exceed 300 µg/L.

j. **Manganese, Total Recoverable.** The Average Annual Effluent Limitation (AAEL) concentration for total recoverable manganese shall not exceed 50 µg/L. The average annual mass discharge of total recoverable manganese shall not exceed 1.25 lbs/day at 3.0 mgd AD~~D~~WF. The average annual mass discharge of total recoverable manganese shall not exceed 1.67 lbs/day at 4.0 mgd AD~~D~~WF.

2. Interim Effluent Limitations

a. During the period beginning with the permit effective date ~~-~~and ending on 17 May 2010, the Discharger shall maintain compliance with the following limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP. These interim effluent limitations shall ~~only~~ apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this provision~~. Interim limitations only apply to an effluent flow of 3.0 mgd ADDF. Upon completion of construction of WWTP expansion to 4.0 mgd ADDF final effluent limitations apply per Section IV.A.1.~~

Table 7. Interim Effluent Limitations ending 17 May 2010

Parameter	Units	Interim Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Bis (2-Chloroethyl) ether	µg/L	---	---	9.95	---	---
Bis (2-ethylhexyl) phthalate	µg/L	---	---	8.09	---	---
Carbon Tetrachloride	µg/L	---	---	1.31	---	---
Copper, Total Recoverable	µg/L	---	---	23.88	---	---
	~~lbs/day~~	~~---~~	~~---~~	~~0.600~~	~~---~~	~~---~~
Cyanide	µg/L	---	---	20.84	---	---
Dibromochloromethane	µg/L	---	---	3.28	---	---
Dichlorobromomethane	µg/L	---	---	23.95	---	---
Total Trihalomethanes (TTHM)	µg/L	---	---	178	---	---
Zinc, Total Recoverable	µg/L	---	---	330	---	---

b. **Total Ammonia**: During the period beginning with the permit effective date and ending on 18 May 2008 effluent ammonia (as N) shall not exceed the following:

i. ~~10.6 mg/L as a daily maximum~~A monthly average in accordance with Table 7A; and

ii. ~~265 lbs/day as~~ A~~a~~ daily maximum in accordance with Table 7B.

Table 7A. Ammonia Monthly Avearage Concentration Limitation (mg N//)

	Temperature, ºC (ºF)									
pH	**0** (32)	**14** (57)	**16** (61)	**18** (64)	**20** (68)	**22** (72)	**24** (75)	**26** (79)	**28** (82)	**30** (86)
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17

7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

$$CCC = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}} \right) x\ MIN\left(2.85, 1.45 \cdot 10^{0.028(25-T)}\right)$$

Where: CCC = criteria continuous concentration
T = temperature in degrees Celsius (ºC)

pH-Dependent Effluent Limits for Ammonia
Criterion Maximum Concentration, Maximum Daily Effluent Limitation

pH	Ammonia Concentration Limit (mg N/*l*)
6.5	**32.6**
6.6	**31.3**
6.7	**29.8**
6.8	**28.0**
6.9	**26.2**
7.0	**24.1**
7.1	**21.9**
7.2	**19.7**
7.3	**17.5**
7.4	**15.3**
7.5	**13.3**
7.6	**11.4**
7.7	**9.64**
7.8	**8.11**
7.9	**6.77**
8.0	**5.62**
8.1	**4.64**
8.2	**3.83**
8.3	**3.15**
8.4	**2.59**
8.5	**2.14**

8.6	**1.77**
8.7	**1.47**
8.8	**1.23**
8.9	**1.04**
9.0	**0.885**

b. **Electrical Conductivity (EC)**: During the period beginning with the permit effective date and ending upon expiration of the permit the maximum daily electrical conductivity (EC) shall not exceed 1041 μmhos/cm.

c. **Aluminum (Total Recoverable)**: During the period beginning with the permit effective date and ending on 18 May 2012 total recoverable aluminum shall not exceed the following:

i. 841 μg/L as a daily maximum; and

~~21 lbs/day as a daily maximum.~~

d. **Persistent Chlorinated Hydrocarbon Pesticides**: During the period beginning with the permit effective date and ending on 17 May 2010, the following individual persistent chlorinated hydrocarbon pesticides shall not exceed the following instantaneous maximum effluent limitation:

Persistent Chlorinated Hydrocarbon Pesticide	Instantaneous Maximum Concentration
i. 4,4'-DDT	0.146 ug/L
ii. Aldrin;	0.050 ug/L
iii. alpha-BHC;	0.040 ug/L
iv. alpha-Endosulfan;	0.165 ug/L
v. beta-BHC;	0.056 ug/L
vi. beta-Endosulfan;	0.212 ug/L
vii. Chlorodane;	0.031 ug/L
viii. delta-BHC;	0.152 ug/L
ix. Endrin Aldehyde;	0.529 ug/L
x. Endrin;	0.053 ug/L
xi. gamma-BHC; and	0.208 ug/L
xii. Heptachlor	0.243 ug/L

During the period beginning 18 May 2010 and ending on 18 May 2012, the following individual CTR persistent chlorinated hydrocarbon pesticides shall not exceed the following instantaneous maximum effluent limitation:

Persistent Chlorinated Hydrocarbon	Instantaneous Maximum

	Pesticide	Concentration
i.	4,4'-DDT	0.001 ug/L
ii.	Aldrin;	0.0003 ug/L
iii.	alpha-BHC;	0.008 ug/L
iv.	beta-BHC;	0.03 ug/L
v.	Chlorodane;	0.001 ug/L
vi.	gamma-BHC; and	0.04 ug/L
vii.	Heptachlor	0.0004 ug/L

During the period beginning with the permit effective date and ending on 18 May 2012, the following non-CTR persistent chlorinated hydrocarbon pesticide shall not exceed the following instantaneous maximum effluent limitation:

	Persistent Chlorinated Hydrocarbon Pesticide	Instantaneous Maximum Concentration
i.	Dalapon	3.1 ug/L
~~ii.~~		

~~d.**Persistent Chlorinated Hydrocarbon Pesticides**: During the period beginning with the permit effective date and ending on 18 May 2012 the instantaneous maximum effluent limitation for persistent chlorinated hydrocarbon pesticides applies to each individual pesticide listed below:~~

~~Persistent Chlorinated Hydrocarbon Pesticide~~	~~Instantaneous Maximum Daily Concentration~~
~~i.4,4'-DDT~~	~~0.146 ug/L~~
~~ii.Aldrin;~~	~~0.050 ug/L~~
~~iii.alpha-BHC;~~	~~0.040 ug/L~~
~~iv.alpha-Endosulfan;~~	~~0.165 ug/L~~
~~v.beta-BHC;~~	~~0.056 ug/L~~
~~vi.beta-Endosulfan;~~	~~0.212 ug/L~~
~~vii.Chlorodane;~~	~~0.031 ug/L~~
~~viii.Dalapon;~~	~~23.1 ug/L~~
~~ix.delta-BHC;~~	~~0.152 ug/L~~
~~x.Endrin Aldehyde;~~	~~0.529 ug/L~~
~~xi.Endrin;~~	~~0.053 ug/L~~
~~xii.gamma-BHC; and~~	~~0.208 ug/L~~
~~**xiii.**Heptachlor~~	~~0.243 ug/L~~

B. Land Discharge Specifications-Discharge Points 002, 003, 004, 005

1. The discharge of waste classified as "hazardous" as defined in section 2521(a) of Title 23, California Code of Regulations (CCR), or "designated", as defined in section 13173 of the CWC, to the treatment ponds is prohibited.

2. Objectionable odors originating at this facility shall not be perceivable beyond the limits of the wastewater treatment and disposal areas *(or property owned by the Discharger)*.

3. As a means of discerning compliance with Land Discharge Specification 2, the dissolved oxygen content in the upper zone (1 foot) of wastewater in ponds shall not be less than 1.0 mg/L.

4. Ponds shall not have an average pH less than 6.5 or greater than 9.0.

C. Reclamation Specifications – Discharge Point 006

1. All uses of reclaimed water shall be in accordance with a Master Reclamation Permit issued to the Discharger in accordance with Title 22 and the California Water Code.

2. Conformance to reclaimed water effluent limitations shall be determined by the Master Reclamation Permit issued to the Discharger in accordance with Title 22 and the California Water Code.

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 Carson 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 ten 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, raised above 8.5, nor changed by more than 0.5 units. A one-month averaging period may be applied when calculating the pH change of 0.5.

9. **Pesticides**:

   a. Pesticides to be present, individually or in combination, in concentrations that adversely affect beneficial uses;
   b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses;
   c. Total identifiable persistent chlorinated hydrocarbon pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by USEPA or the Executive Officer**/**prescribed in *Standard Methods for the Examination of Water and Wastewater, 18th Edition or latest edition, methods defined in 40 CFR 126*, or other equivalent methods approved by the Executive Officer.
   d. Pesticide concentrations to exceed those allowable by applicable antidegradation policies (see State Water Board Resolution No. 68-16 and 40 CFR §131.12.).
   e. Pesticide concentrations to exceed the lowest levels technically and economically achievable.
   f. Pesticides to be present in concentration in excess of the maximum contaminant levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15 specified in Table 64444-A (Organic Chemicals) of Section 64444 of Title 22 of the California Code of Regulations.
   g. Thiobencarb to be present in excess of 1.0 µg/L.

10. **Radioactivity**:

   a. Radionuclides to be present in concentrations that are harmful**/**deleterious 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 specified in Table 4 (MCL Radioactivity) 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 to domestic or municipal water supplies.

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**. The turbidity to increase as follows:

    a. More than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTUs.
    b. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
    c. More than 10 NTU where natural turbidity is between 50 and 100 NTUs.
    d. More than 10 percent where natural turbidity is greater than 100 NTUs.

    When wastewater is treated to a tertiary level (including coagulation) or equivalent, a one-month averaging period may be used when determining compliance with this Receiving Surface Water Limitation for turbidity**.**

B. Groundwater Limitations

1. Release of waste constituents from any storage, treatment, or disposal component associated with the WWTP, in combination with other sources, shall not cause the underlying groundwater to contain waste constituents in concentrations greater than background water quality. Any increase in Total Dissolved Solids (TDS), Nitrate + Nitrite (as N), or Total Ammonia (as NH_4) concentrations within the monitoring points, when compared to background, shall not exceed the increase typically caused by the percolation discharge of domestic wastewater, and shall not violate water quality objectives, impact beneficial uses, or cause pollution or nuisance. For purposes of this limitation, the monitoring points will be established per the Provisions in Section VI.C.2.d for Groundwater Monitoring.

2. Release of waste constituents from any storage, treatment, or disposal component associated with the WWTP shall not, in combination with other sources of the waste constituents, cause groundwater within influence of the WWTP to contain waste constituents in concentrations in excess of natural background quality or that listed

below, whichever is greater:

a. Total coliform organisms median of 2.2 MPN/100 mL over any seven-day period.

b. Chemical constituents in concentrations that adversely affect beneficial uses, including:

   i. Constituent concentrations listed below:

Parameter	Units	Limitation
~~Ammonia, Total (as NH_4)~~	~~mg/L~~	~~0.5~~
Total Dissolved Solids[1]	mg/L	450
Nitrate + Nitrite (as N)	mg/L	10

1 A cumulative constituent comprised of dissolved matter consisting mainly of inorganic salts, small amounts of organic matter, and dissolved gases (*e.g.*, ammonia, bicarbonate alkalinity, boron, calcium, chloride, copper, iron, magnesium, manganese, nitrate, phosphorus, potassium, sodium, silica, sulfate, total alkalinity).

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all Standard Provisions 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 Clean Water Act, 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 Code of Federal Regulations (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 Regional Water Board may review and revise this Order at any time upon application of any affected person or the Regional 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 Regional 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. The discharge of any radiological, chemical or biological warfare agent or high-level, radiological waste is prohibited.

i. 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.

j. 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 Regional 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 five 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 Regional Water Board.

iii. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Regional Water Board not approve the existing safeguards, the Discharger shall, within ninety days of having been advised in writing by the Regional Water Board that the existing safeguards are inadequate, provide to the Regional 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 Regional Water Board, become a condition of this Order.

k. The Discharger, upon written request of the Regional 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 Regional Water Board Standard Provision VI.A.2.m.

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 Regional 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.

l. A publicly owned treatment works (POTW) 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 three 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 four years, the Discharger shall notify the Regional 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 Regional Water Board may extend the time for submitting the report.

m. 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.

n. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Regional Water Board and USEPA.

o. 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.

p. 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.

q. All monitoring and analysis 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.

r. The Discharger shall file with the Regional Water Board technical reports on self-monitoring performed according to the detailed specifications contained in the Monitoring and Reporting Program attached to this Order.

s. The results of all monitoring required by this Order shall be reported to the Regional 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.

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

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

v. 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 Regional Water Board by telephone (916) 464-3291 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Regional Water Board waives confirmation. The written notification shall include the information required by Attachment D, Section V.E.1 [40 CFR section 122.41(l)(6)(i)].

B. Monitoring and Reporting Program (MRP) Requirements

1. The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

a. 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.

b. Conditions that necessitate a major modification of a permit are described in 40 CFR section 122.62, including:

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.

c. **Ammonia.** Floating Ammonia Effluent Concentration Limitations. If Regional Water Board staff determines that floating ammonia effluent limitations (based on pH and Temperature of the effluent and/or receiving water) are appropriate, this Order may be reopened to include revised final ammonia effluent limitations and monitoring requirements.

d. **Mercury.** If mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted, this Order shall be reopened and the interim mass effluent limitation modified (higher or lower) or an effluent concentration limitation imposed. If the Regional Water Board determines that a mercury offset program is feasible for Dischargers subject to a NPDES permit, then this Order may be reopened to reevaluate the interim mercury mass loading limitation(s) and the need for a mercury offset program for the Discharger.

e. **Pollution Prevention.** This Order requires the Discharger prepare and implement pollution prevention plans following CWC section 13263.3(d)(3) for Aluminum, Ammonia, Bis (2-Chloroethyl) ether, Bis (2-ethylhexyl) phthalate, Carbon Tetrachloride, Copper, Cyanide, Dibromochloromethane, Dichlorobromomethane, Persistent Chlorinated Hydrocarbon Pesticides, Total Trihalomethanes (TTHM), and Zinc. Based on a review of the pollution prevention plans, this Order may be reopened for addition and/or modification of effluent limitations and requirements for these constituents. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

f. **Salinity Evaluation and Minimization Plan.** This Order requires that the Discharger prepare and implement a salinity evaluation and minimization plan to address sources of salinity from the municipal wastewater treatment system. The plan shall be completed and submitted to the Regional Water Board within 9 months of the effective date of this Order for approval by the Executive Officer. Based on a review of the results of implementation of the salinity evaluation and minimization plan this Order may be reopened for addition and/or modification of effluent limitations and requirements for salinity.

g. **Whole Effluent Toxicity.** As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if 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.

h. **Water Effects Ratios (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant 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 aluminum, copper, and zinc. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

i. **Constituent Study.** If after review of the study results it is determined that the discharge has reasonable potential to cause or contribute to an exceedance of a water quality objective this Order may be reopened and effluent limitations added for the subject constituents.

j. **Salinity/EC Site-Specific Studies.** This Order requires the Discharger complete and submit a report on the results of Salinity/EC Site-Specific studies to determine appropriate Salinity/EC levels necessary to protect downstream beneficial uses. The studies shall be completed and submitted to the Regional Water Board within 39 months of the adoption date of this Order. Based on a review of the results of the report on the Salinity/EC Site-Specific studies this Order may be reopened for addition of effluent limitations and requirements for salinity and/or EC.

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 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 exceeds the toxicity numeric monitoring trigger established in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE), in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and prevent reoccurrence 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 whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This Provision includes requirements for the Discharger to develop and submit a TRE Work Plan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

i. **Initial Investigative Toxicity Reduction Evaluation (TRE) Work Plan. Within 90 days of the effective date of this Order,** the Discharger shall submit to the Regional Water Board an Initial Investigative TRE Work Plan for

approval by the Executive Officer. This should be a one to two page document including, at minimum:

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

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

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

ii. **Accelerated Monitoring and TRE Initiation.** When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring as required in the Accelerated Monitoring Specifications. WET testing results exceeding the monitoring trigger during accelerated monitoring demonstrates a pattern of toxicity and requires the Discharger to initiate a TRE to address the effluent toxicity.

iii. **Numeric Monitoring Trigger.** The numeric toxicity monitoring trigger is a statistically significant ~~difference between~~reduction in the 100% effluent test concentration response ~~and~~ relative to the laboratory control test response. The toxicity threshold that determines a statistically significant difference between the two tests mentioned above is established 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 (Appendix H), and its subsequent amendments or revisions. 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.

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

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

b) If the source(s) of the toxicity is easily identified (i.e. 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 initiate 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 the test results exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Regional Water Board including, at minimum:

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

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

3) A schedule for these actions.

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

~~b.**Constituent Study**. There are indications that the discharge may contain the following constituents at concentrations that have a reasonable potential to cause or contribute to an exceedance of water quality objectives: **selenium**, and **nitrite**. The Discharger shall comply with the following time schedule in conducting a study of these constituents' potential effect in surface waters:~~

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

~~Task~~	~~Compliance Date~~
~~1. Submit Workplan and Time Schedule~~	~~Within 6 months of effective date of this Order for approval by the Executive Officer.~~
~~2. Begin Study~~	~~Upon approval by the Executive Officer.~~
~~3. Complete Study~~	~~Within two (2) years following Workplan approval.~~
~~4. Submit Study Report~~	~~Within three (3) months of completion of study.~~

~~c.~~**~~Best Practicable Treatment or Control (BPTC) Evaluation Tasks~~**~~. The Discharger shall propose a work plan and schedule for providing BPTC as required by Resolution 68-16. The technical report describing the work plan and schedule shall contain a preliminary evaluation of each component and propose a time schedule for completing the comprehensive technical evaluation.~~

~~Following completion of the comprehensive technical evaluation, the Discharger shall submit a technical report describing the evaluation's results and critiquing each evaluated component with respect to BPTC and minimizing the discharge's impact on groundwater quality. Where deficiencies are documented, the technical report shall provide recommendations for necessary modifications (*e.g.*, new or revised salinity source control measures, WWTP component upgrade and retrofit) to achieve BPTC and identify the source of funding and proposed schedule for modifications. The schedule shall be as short as practicable but in no case shall completion of the necessary modifications exceed four years past the Executive Officer's determination of the adequacy of the comprehensive technical evaluation, unless the schedule is reviewed and specifically approved by the Regional Water Board. The technical report shall include specific methods the Discharger proposes as a means to measure processes and assure continuous optimal performance of BPTC measures. The Discharger shall comply with the following compliance schedule in implementing the work required by this Provision:~~

~~Task~~	~~Compliance Date~~
~~1.Submit technical report (work plan and schedule) for comprehensive evaluation~~	~~**Within 6 months** following effective date of this Order~~
~~2.Commence comprehensive evaluation~~	~~**30 days** following Executive Officer approval of Task 1.~~

~~Task~~	~~Compliance Date~~
~~3.Complete comprehensive evaluation~~	~~As established by Task 1 and/or 2 years following Task 2, whichever is sooner~~
~~4.Submit technical report: comprehensive evaluation results~~	~~**60 days** following completion of Task 3.~~
~~5.Submit annual report describing the overall status of BPTC implementation and compliance with groundwater limitations over the past reporting year~~	~~To be submitted in accordance with the MRP (Attachment E, Section X.D.1.)~~

~~d.~~b. **Groundwater Monitoring.** To determine compliance with Groundwater Limitations V.B., the Discharger shall establish and implement a groundwater monitoring network that shall include one or more background monitoring wells and a sufficient number of designated monitoring wells downgradient of every treatment, storage, and disposal unit that does or may release waste constituents to groundwater. All monitoring wells shall comply with the appropriate standards as described in California Well Standards Bulletin 74-90 (June 1991) and Water Well Standards: State of California Bulletin 74-81 (December 1981), and any more stringent standards adopted by the Discharger or County pursuant to CWC section 13801.

The Discharger, after one year of monitoring, shall characterize natural background quality of monitored constituents in a technical report, to be submitted by **24 months after the effective date of this Order**. For each groundwater monitoring parameter/constituent identified in the MRP (Attachment E, Section VIII.C.), the report shall present a summary of monitoring data, calculation of the concentration in background monitoring wells, and a comparison of background groundwater quality to that in wells used to monitor the facility. Determination of background quality shall be made using the methods described in Title 27 California Code of Regulations Section 20415(e)(10), and shall be based on data from at least four consecutive quarterly (or more frequent) groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare measured concentrations for compliance monitoring wells with the calculated background concentration.

If the monitoring shows that any constituent concentrations are increased above background water quality, the Discharger shall submit a technical report by **30 months after the effective date of this Order**, as specified in Item c. below, describing the groundwater technical report results and critiquing each evaluated component of the Facility with respect to BPTC and minimizing the discharge's impact on groundwater quality. In no case shall the discharge be

allowed to exceed the Groundwater Limitations. This Order may be reopened and additional groundwater limitations added.

c. **Best Practicable Treatment or Control (BPTC) Evaluation Tasks (As Applicable)**. If groundwater monitoring, as required in Item b. above, shows that any constituent concentrations are increased above background groundwater quality, the Discharger shall propose a work plan and schedule for providing BPTC as required by Resolution 68-16. A technical report describing the work plan and schedule shall contain a preliminary evaluation of each component and propose a time schedule for completing the comprehensive technical evaluation.

Following completion of the comprehensive technical evaluation, the Discharger shall submit a technical report describing the evaluation's results and critiquing each evaluated component with respect to BPTC and minimizing the discharge's impact on groundwater quality. Where deficiencies are documented, the technical report shall provide recommendations for necessary modifications (*e.g.*, new or revised salinity source control measures, WWTP component upgrade and retrofit) to achieve BPTC and identify the source of funding and proposed schedule for modifications. The schedule shall be as short as practicable but in no case shall completion of the necessary modifications exceed four years past the Executive Officer's determination of the adequacy of the comprehensive technical evaluation, unless the schedule is reviewed and specifically approved by the Regional Water Board. The technical report shall include specific methods the Discharger proposes as a means to measure processes and assure continuous optimal performance of BPTC measures. The Discharger shall comply with the following compliance schedule in implementing the work required by this Provision:

Task	Compliance Date
1. Submit technical report (work plan and schedule) for comprehensive evaluation	**Within 30 months** following effective date of this Order
2. Commence comprehensive evaluation	**30 days** following Executive Officer approval of Task 1.
3. Complete comprehensive evaluation	As established by Task 1 and/or 2 years following Task 2, whichever is sooner
4. Submit technical report: comprehensive evaluation results	**60 days** following completion of Task 3.
5. Submit annual report describing the overall status of BPTC implementation and compliance with groundwater limitations over the past reporting year	To be submitted in accordance with the MRP (Attachment E, Section X.D.1.)

~~e.~~d. **Salinity/EC Site-Specific Studies.** The Discharger shall complete and submit a report on the results of a site-specific investigation of appropriate Salinity/EC levels to protect beneficial uses in areas irrigated with Carson Creek waters diverted downstream from the Discharger's effluent discharge. The study shall determine the sodium adsorption ratio of soils in the affected area, the effects of rainfall and flood-induced leaching, and background water quality. The study shall evaluate how climate, soil chemistry, background water quality, rainfall, and flooding affect Salinity/EC requirements. Based on these factors, the study shall recommend site-specific numeric values for Salinity/EC that fully protect Carson Creek's agricultural irrigation use designation. The Regional Water Board will evaluate the recommendations, select appropriate values, reevaluate reasonable potential for Salinity/EC, and reopen the permit, as necessary, to include appropriate effluent limitations for these constituents. The Discharger shall comply with the following time schedule to complete the study:

Task	Compliance Date
1. Submit Workplan and Time Schedule	Within **12 months** following the adoption date of this Order.
2. Complete Study	Within **36 months** following the adoption date of this Order.
3. Submit Study Report	Within **three months** of completion of Study.

3. Best Management Practices and Pollution Prevention

a. **Pollutant Minimization Program**. The Discharger shall develop and conduct a Pollutant Minimization Program (PMP) as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either: 1) A sample result is reported as DNQ and the effluent limitation is less than the RL; or 2) A sample result is reported as ND and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in MRP Attachment E Section X.A.4.

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

i. An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;

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

iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;

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

v. An annual status report that shall be sent to the Regional Water Board including:

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

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

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

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

b. **Pollution Prevention Plan for mercury.** The Discharger shall prepare and implement a pollution prevention plan for mercury in accordance with CWC section 13263.3(d)(3). The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet, Attachment F, Section VII.B.3.a. A work plan and time schedule for preparation of the pollution prevention plan shall be completed and submitted **within 6 months of the effective date of this Order** for approval by the Executive Officer. The Pollution Prevention Plan shall be completed and submitted to the Regional Water Board **within two (2) years following work plan approval by the Executive Officer**, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.). The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

c. **Salinity Evaluation and Minimization Plan.** The Discharger shall prepare and implement a salinity evaluation and minimization plan to address sources of salinity from the municipal wastewater treatment system. The plan shall be completed and submitted to the Regional Water Board **within 9 months of the effective date of this Order for approval by the Executive Officer**.

4. **Construction, Operation and Maintenance Specifications**

a. **Treatment Pond Operating Requirements**.

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

ii. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives.

iii. Ponds shall be managed to prevent breeding of mosquitoes. In particular,

a) An erosion control program should assure that small coves and irregularities are not created around the perimeter of the water surface.
b) Weeds shall be minimized.
c) Dead algae, vegetation, and debris shall not accumulate on the water surface.

iv. Freeboard shall never be less than two feet (measured vertically to the lowest point of overflow.

v. Ponds shall have sufficient capacity to accommodate allowable wastewater flow and design seasonal precipitation and ancillary inflow and infiltration during the non-irrigation season. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns. Freeboard shall never be less than two feet (measured vertically to the lowest point of overflow).

vi. Prior to the onset of the rainy season of each year, available pond storage capacity shall at least equal the volume necessary to comply with Land Discharge Specification v.

b. **Ultraviolet Disinfection (UV) System Operating Requirements.**

Once in operation the Discharger shall operate the UV disinfection system to provide a minimum UV dose per bank of 100 millijoules per square centimeter (mJ/cm^2) at peak daily flow, unless otherwise approved by the California Department of Health Services, and shall maintain an adequate dose for disinfection while discharging to Carson Creek, unless otherwise approved by the California Department of Health Services.

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

ii. 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.

iii. The quartz sleeves and cleaning system components must be visually inspected ~~every 3 months~~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.

iv. The lamp sleeves must be cleaned periodically as necessary to meet the requirements specified in paragraph ~~iv. The lamp cleaning fluid must be replaced every six months.~~

v. Lamps must be replaced ~~after they have reached 5000 hours of operation,~~per the manufacturer's operations manual, or sooner, if there are indications the lamps ~~is~~ are failing to provide adequate disinfection. Lamp age and lamp replacement records must be maintained.

vi. The facility must be operated in accordance with an operations and maintenance ~~manual approved by the Regional Board and DHS~~program that assures adequate disinfection.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. **Pretreatment Requirements.**

i. The Discharger shall implement its ~~approved~~ pretreatment program, in accordance with USEPA approvals, and the program shall be an enforceable condition of this Order. (The District is in the process of obtaining an approved Industrial Pretreatment Program (IPP). If the Discharger fails to perform the pretreatment functions, the Regional Water Board, the State Water Board or the U.S. Environmental Protection Agency (U.S. EPA) may take enforcement actions against the Discharger as authorized by the CWA.

ii. The Discharger shall enforce the Pretreatment Standards promulgated under sections 307(b), 307(c), and 307(d) of the Clean Water Act. The Discharger shall perform the pretreatment functions required by 40 CFR Part 403 including, but not limited to:

a) Adopting the legal authority required by 40 CFR 403.8(f)(1);

b) Enforcing the Pretreatment Standards of 40 CFR 403.5 and 403.6;

c) Implementing procedures to ensure compliance as required by 40 CFR 403.8(f)(2); and

d) Providing funding and personnel for implementation and enforcement of the pretreatment program as required by 40 CFR 403.8(f)(3).

iii. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the necessary legal authorities, programs, and controls to ensure that the following incompatible wastes are not introduced to the treatment system, where incompatible wastes are:

a) Wastes which create a fire or explosion hazard in the treatment works;

b) Wastes which will cause corrosive structural damage to treatment works, but in no case wastes with a pH lower than 5.0, unless the works is specially designed to accommodate such wastes;

c) Solid or viscous wastes in amounts which cause obstruction to flow in sewers, or which cause other interference with proper operation or treatment works;

d) Any waste, including oxygen demanding pollutants (BOD, *etc*.), released in such volume or strength as to cause inhibition or disruption in the treatment works, and subsequent treatment process upset and loss of treatment efficiency;

e) Heat in amounts that inhibit or disrupt biological activity in the treatment works, or that raise influent temperatures above 40°C (104°F), unless the Regional Water Board approves alternate temperature limits;

f) Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

g) Pollutants which result in the presence of toxic gases, vapors, or fumes within the treatment works in a quantity that may cause acute worker health and safety problems; and:

h) Any trucked or hauled pollutants, except at points predesignated by the Discharger.

iv. The Discharger shall implement, as more completely set forth in 40 CFR 403.5, the legal authorities, programs, and controls necessary to ensure that indirect discharges do not introduce pollutants into the sewerage system that, either alone or in conjunction with a discharge or discharges from other sources:

a) Flow through the system to the receiving water in quantities or concentrations that cause a violation of this Order, or:

b) Inhibit or disrupt treatment processes, treatment system operations, or sludge processes, use, or disposal and either cause a violation of this Order or prevent sludge use or disposal in accordance with this Order.

b. **Sludge/Biosolids Discharge Specifications**

i. Collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with *Consolidated Regulations for*

Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in Title 27, CCR, Division 2, Subdivision 1, section 20005, et seq. Removal for further treatment, disposal, or reuse at sites (i.e., landfill, composting sites, soil amendment sites) that are operated in accordance with valid waste discharge requirements issued by a regional water quality control board will satisfy these specifications.

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

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

iv. The use and disposal of biosolids shall comply with existing Federal and State laws and regulations, including permitting requirements and technical standards included in 40 CFR 503. If the State Water Board and the Regional Water Board are given the authority to implement regulations contained in 40 CFR 503, this Order may be reopened to incorporate appropriate time schedules and technical standards. The Discharger must comply with the standards and time schedules contained in 40 CFR 503 whether or not they have been incorporated into this Order.

c. **Biosolids Disposal Requirements**

i. The Discharger shall comply with the Monitoring and Reporting Program for biosolids disposal contained in Attachment E.

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

iii. The Discharger is encouraged to comply with the “Manual of Good Practice for Agricultural Land Application of Biosolids” developed by the California Water Environment Association.

d. **Biosolids Storage Requirements**

i. Facilities for the storage of Class B biosolids shall be located, designed and maintained to restrict public access to biosolids.

ii. Biosolids storage facilities shall be designed and maintained to prevent washout or inundation from a storm or flood with a return frequency of 100 years.

iii. Biosolids storage facilities, which contain biosolids, shall be designed and maintained to contain all storm water falling on the biosolids storage area during a rainfall year with a return frequency of 100 years.

iv. Biosolids storage facilities shall be designed, maintained and operated to minimize the generation of leachate.

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

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

~~Limited~~ All existing portions of the wastewater collection system ~~may be outside~~are within the service area of the Discharger. In order to assure compliance with Discharge Prohibitions against overflows and bypasses, and to assure protection of the entire collection system and treatment works from industrial discharges, it is necessary that the Discharger control discharges into the system. If future portions of the wastewater collection system are outside the service area of the Discharger, t~~T~~o control discharges into the entire collection system, the Discharger shall establish interagency agreements with the collection system users. The interagency agreements shall contain, at a minimum, requirements for reporting of unauthorized releases of wastewater, maintenance of the collection system, backup power or adequate wet well capacity at all pump stations to prevent overflows during power outages and pump failures, and pump station high water alarm notification systems. The agreements shall also require implementation of an industrial pretreatment program that meets the minimum requirements of this permit. If/when applicable, t~~T~~he Discharger shall comply with the following time schedule:

Task	Compliance Date
Submit interagency agreements for new connections	**30 days prior to connection**

This permit, and the Monitoring and Reporting Program which is a part of this permit, requires that certain parameters be monitored on a continuous basis. The wastewater treatment plant is currently staffed on a full time basis. However, the Discharger has indicated that in the future the Facility may not be staffed on a full time basis. Permit violations or system upsets can go undetected during this period. The Discharger is required to establish an electronic system for operator notification for continuous recording device alarms. For existing continuous monitoring systems, the electronic notification system shall be installed **within six months of adoption** of this permit. For systems installed following permit adoption, the notification system shall be installed simultaneously.

6. Other Special Provisions

a. Wastewater shall be oxidized, coagulated, filtered, and adequately disinfected pursuant to the DHS reclamation criteria, California Code of Regulations, Title 22, Division 4, Chapter 3, (Title 22), or equivalent.

b. 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 Regional 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 Regional 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 California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

7. Compliance Schedules

a. **Compliance Schedules for Final Effluent Limitations for Aluminum, Ammonia, Bis (2-Chloroethyl) ether, Bis (2-ethylhexyl) phthalate, Carbon**

Tetrachloride, Copper, Cyanide, Dibromochloromethane, Dichlorobromomethane, Persistent Chlorinated Hydrocarbon Pesticides, Total Trihalomethanes (TTHM), and Zinc.

i. **By 18 May 2010,** the Discharger shall comply with the final effluent limitations for Bis (2-Chloroethyl) ether, Bis (2-ethylhexyl) phthalate, Carbon Tetrachloride, Copper, Cyanide, Dibromochloromethane, Dichlorobromomethane, Total Trihalomethanes (TTHM), and Zinc. On 1 December 2006, the Discharger submitted a compliance schedule justification for Bis (2-Chloroethyl) ether, Bis (2-ethylhexyl) phthalate, Carbon Tetrachloride, Copper, Cyanide, Dibromochloromethane, Dichlorobromomethane, Total Trihalomethanes (TTHM), and Zinc. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of section 2.1 of the SIP. As this compliance schedule is greater than one year, the Discharger shall submit annual progress reports in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).

ii. **By 18 May 2008,** the Discharger shall comply with the final effluent limitations for Ammonia. On 1 December 2006, the Discharger submitted a compliance schedule justification for Ammonia. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of section 2.1 of the SIP. As this compliance schedule is greater than one year, the Discharger shall submit annual progress reports in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).

iii. **By 18 May 2012,** the Discharger shall comply with the final effluent limitations for Aluminum and Persistent Chlorinated Hydrocarbon Pesticides. On 1 December 2006, the Discharger submitted a compliance schedule justification for Aluminum and Persistent Chlorinated Hydrocarbon Pesticides. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of section 2.1 of the SIP. As this compliance schedule is greater than one year, the Discharger shall submit annual progress reports in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).

iv. **Corrective Action Plan/Implementation Schedule.** The Discharger shall submit to the Regional Water Board a corrective action plan and implementation schedule to assure compliance with the final effluent limitations for pollutants listed in Limitation and Discharge Requirements Section VI.C.7.a. within 6 months of the effective date of this Order for approval by the Executive Officer.

v. **Pollution Prevention Plan.** The Discharger shall prepare and implement a pollution prevention plan for pollutants listed in Limitation and Discharge Requirements Section VI.C.7.a., in accordance with CWC section 13263.3(d)(3). The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet, Attachment F, Section VII.B.3.b. A work plan

and time schedule for preparation of the pollution prevention plan shall be completed and submitted to the Regional Water Board **within 6 months of the effective date of this Order** for approval by the Executive Officer. The Pollution Prevention Plan shall be completed and submitted to the Regional Water Board **within two (2) years following work plan approval by the Executive Officer**, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.). The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

vi. **Treatment Feasibility Study.** The Discharger is required to perform an engineering treatment feasibility study examining the feasibility, costs and benefits of different treatment options that may be required to remove pollutants listed in Limitation and Discharge Requirements Section VI.C.7.a. from the discharge. A work plan and time schedule for preparation of the treatment feasibility study shall be completed and submitted to the Regional Water Board **within 6 months of the effective date of this Order** for approval by the Executive Officer. The treatment feasibility study shall be completed and submitted to the Regional Water Board **within two (2) years following work plan approval by the Executive Officer**, and progress reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).

VII. COMPLIANCE DETERMINATION

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

A. **Persistent Chlorinated Hydrocarbon Pesticides Effluent Limitations (Section IV.A.1.a and Section IV.A.2.e.)**. The non-detectable (ND) limitation applies to each individual pesticide listed in appendix 4 of the SIP. Individual pesticides of particular concern are 4,4'-DDT, Aldrin, alpha-BHC, alpha-Endosulfan, beta-BHC, beta-Endosulfan, Chlorodane, Dalapon, delta-BHC, Endrin Aldehyde, Endrin, gamma-BHC, and Heptachlor. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with the lowest possible detectable level for persistent chlorinated hydrocarbon pesticides with a minimum acceptable reporting level as indicated in appendix 4 of the SIP.

B. **Persistent Chlorinated Hydrocarbon Pesticides Instantaneous Maximum Effluent Limitation (Section IV.A.1.a and Section IV.A.2.e.)**. The non-detectable (ND) instantaneous maximum effluent limitation for persistent chlorinated hydrocarbon pesticides applies to each individual pesticide listed in appendix 4 of the SIP. Individual pesticides of particular concern are 4,4'-DDT, Aldrin, alpha-BHC, alpha-Endosulfan, beta-BHC, beta-Endosulfan, Chlorodane, Dalapon, delta-BHC, Endrin Aldehyde, Endrin, gamma-BHC, and Heptachlor. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard

analytical techniques with the lowest possible detectable level for persistent chlorinated hydrocarbon pesticides with a maximum acceptable detection level of 0.05 µg/L. If the analytical result of a single effluent grab sample is detected for any persistent chlorinated hydrocarbon pesticide, a violation will be flagged and the discharger will be considered out of compliance for that single sample. Non-compliance for each sample will be considered separately (*e.g.*, the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of non-compliance with the instantaneous maximum effluent limitation).

C. **Total Trihalomethanes Limitations.** Total Trihalomethanes include the sum of concentrations of bromoform, chloroform, dibromochloromethane, and dichlorobromomethane.

D. **BOD and TSS Effluent Limitations**. Compliance with the final effluent limitations for BOD and TSS required in Sections IV.A.1.a. shall be ascertained by 24-hour composite samples. Compliance with effluent limitations Sections IV.A.1.b. for percent removal shall be calculated using the arithmetic mean of 20°C BOD (5-day) and total suspended solids 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.

E. **Aluminum Effluent Limitations (Section IV.A.1.a. and Section IV.A.2.d.)**. 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 US EPA'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.

F. **Total Mercury Mass Loading Effluent Limitations (Section IV.A.1.h.)**. The procedures for calculating mass loadings are as follows:

1. The total pollutant mass load for each individual calendar month shall be determined using an average of all concentration data collected that month and the corresponding total monthly flow. All monitoring data collected under the monitoring and reporting program, pretreatment program and any special studies shall be used for these calculations.
2. In calculating compliance, the Discharger shall count all non-detect measures at one-half of the detection level. If compliance with the effluent limitation is not attained due to the non-detect contribution, the Discharger shall improve and implement available analytical capabilities and compliance shall be evaluated with consideration of the detection limits.

G. **Average ~~Daily Discharge~~Dry Weather Flow Effluent Limitations (Section IV.A.1.g.)**. The Average ~~Daily Discharge~~Dry Weather Flow represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the

Average Dry Weather Flow effluent limitations will be determined annually based on the average daily flow over three consecutive dry weather months (e.g. July, August, and September). ~~Compliance with the Average Daily Discharge Flow effluent limitations will be measured at times when groundwater is at or near normal and runoff is not occurring.~~

H. **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 seven days for which analyses have been completed. 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 for that parameter for that 1 day only within the reporting period.

I. **Total Residual Chlorine Effluent Limitations (Section IV.A.1.d.)**. Continuous monitoring analyzers for chlorine residual or for dechlorination agent residual in the effluent are appropriate methods for compliance determination. A positive residual dechlorination agent in the effluent indicates that chlorine is not present in the discharge, which demonstrates compliance with the effluent limitations. This type of monitoring can also be used to prove that some chlorine residual exceedances are false positives. Continuous monitoring data showing either a positive dechlorination agent residual or a chlorine residual at or below the prescribed limit are sufficient to show compliance with the total residual chlorine effluent limitations, as long as the instruments are maintained and calibrated in accordance with the manufacturer's recommendations.

Any excursion above the 1-hour average or 4-day average total residual chlorine effluent limitations is a violation. If the Discharger conducts continuous monitoring and the Discharger can demonstrate, through data collected from a back-up monitoring system, that a chlorine spike recorded by the continuous monitor was not actually due to chlorine, then any excursion resulting from the recorded spike will not be considered an exceedance, but rather reported as a false positive.

J. **Mass Effluent Limitations**. Compliance with the mass effluent limitations will be determined during average dry weather periods only when groundwater is at or near normal and runoff is not occurring.

ATTACHMENT A – DEFINITIONS

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

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

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

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

Best Practicable Treatment or Control (BPTC): BPTC is a requirement of State Water Resources Control Board Resolution 68-16 – "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (referred to as the "Antidegradation Policy"). BPTC is the treatment or control of a discharge necessary to assure that, *"(a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained."* Pollution is defined in CWC Section 13050(l). In general, an exceedance of a water quality objective in the Basin Plan constitutes "pollution".

Bioaccumulative pollutants are 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*) 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 one day (a calendar day or other 24-hour period defined as a day) or by the

arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

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

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

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) 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 U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

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

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters include~~d~~, 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 are 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) means 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 is 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) 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 title 40 of the Code of Federal Regulations, Part 136, Attachment B, revised as of 3 July 1999.

Minimum Level (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 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) are those sample results less than the laboratory's MDL.

Ocean Waters are 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 are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP) means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling,

alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements. The Pollution Prevention Plan required herein is not incorporated by reference into this Order

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) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Satellite Collection System is 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 is any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

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

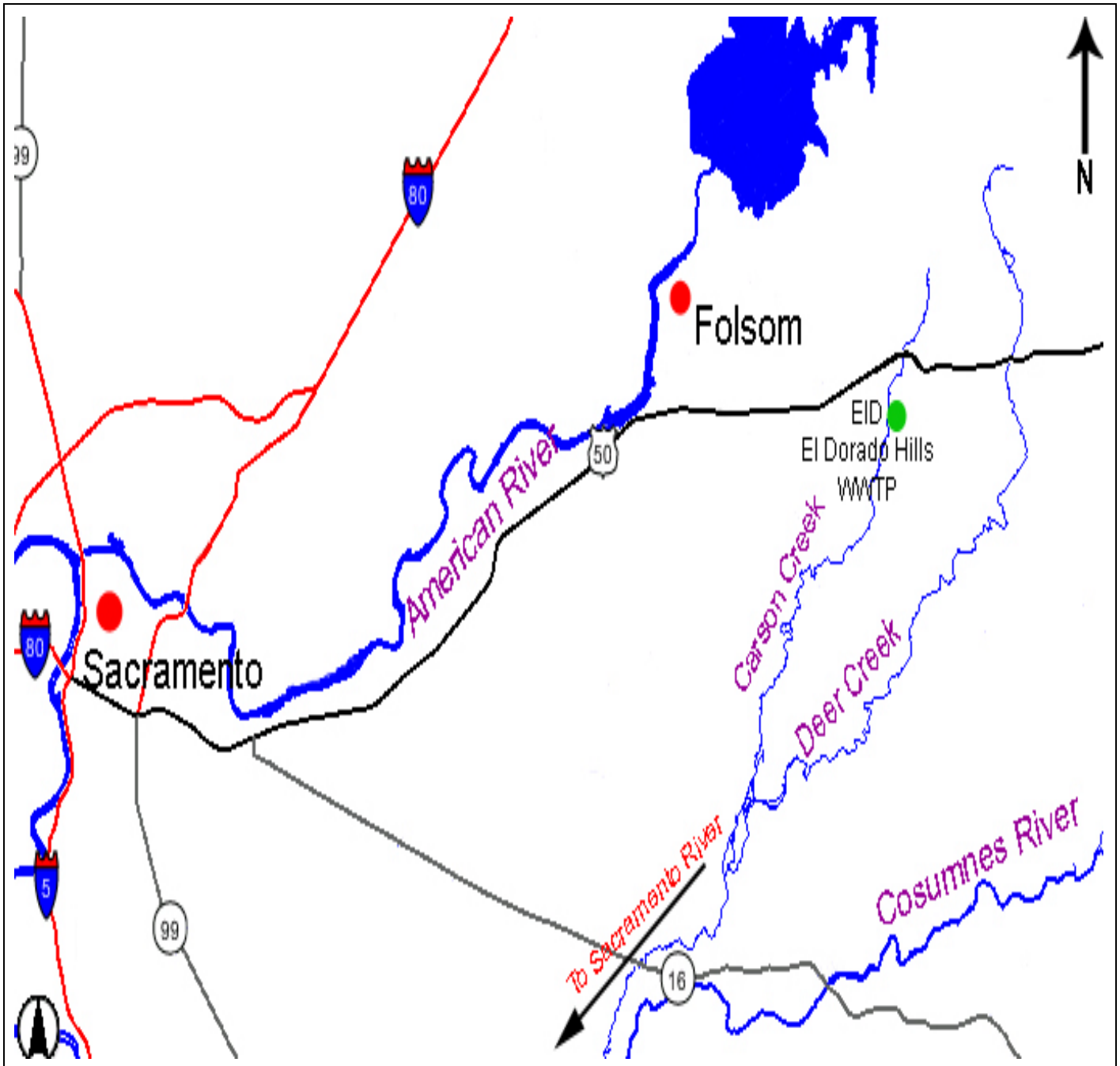
$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

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

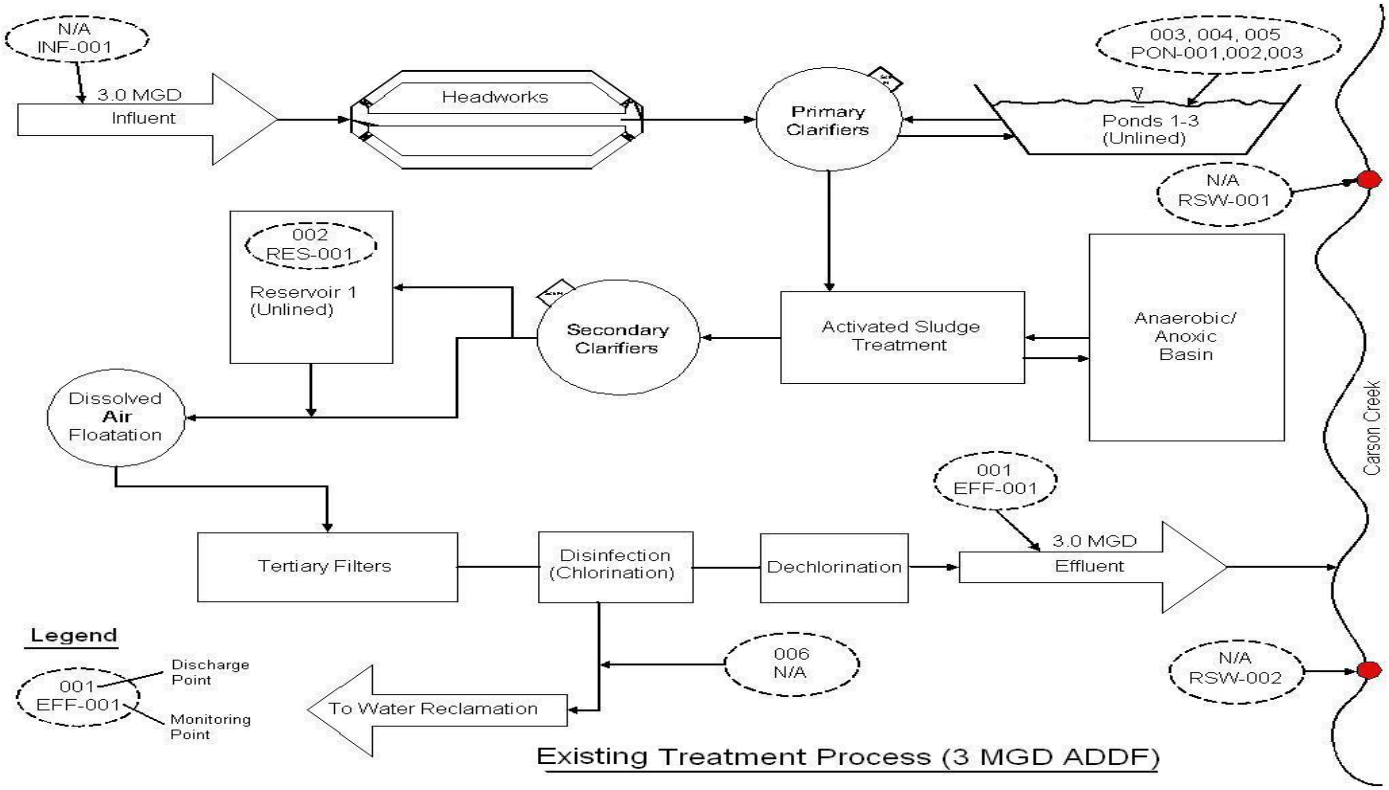
Toxicity Reduction Evaluation (TRE) is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps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

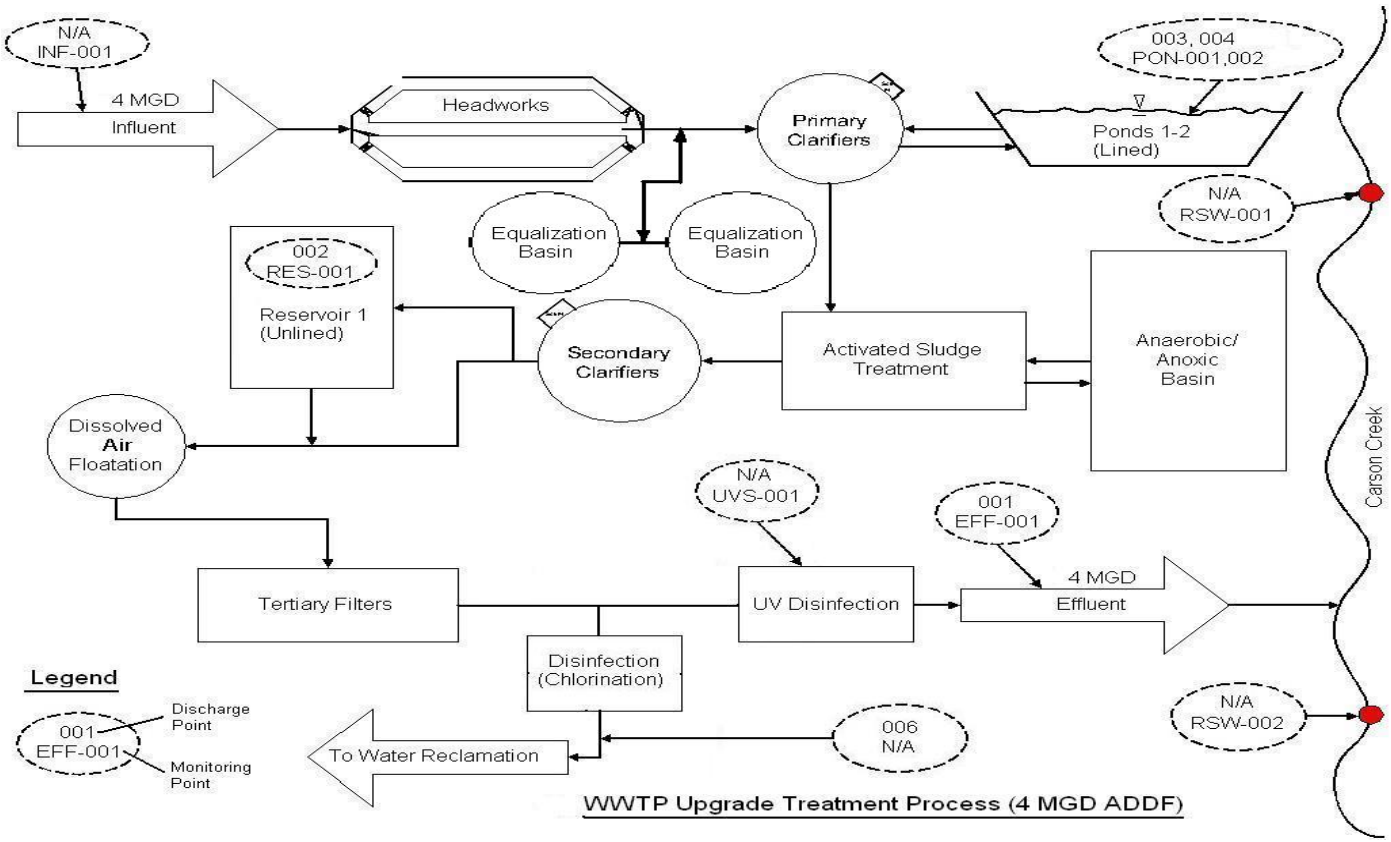
ATTACHMENT B – MAP



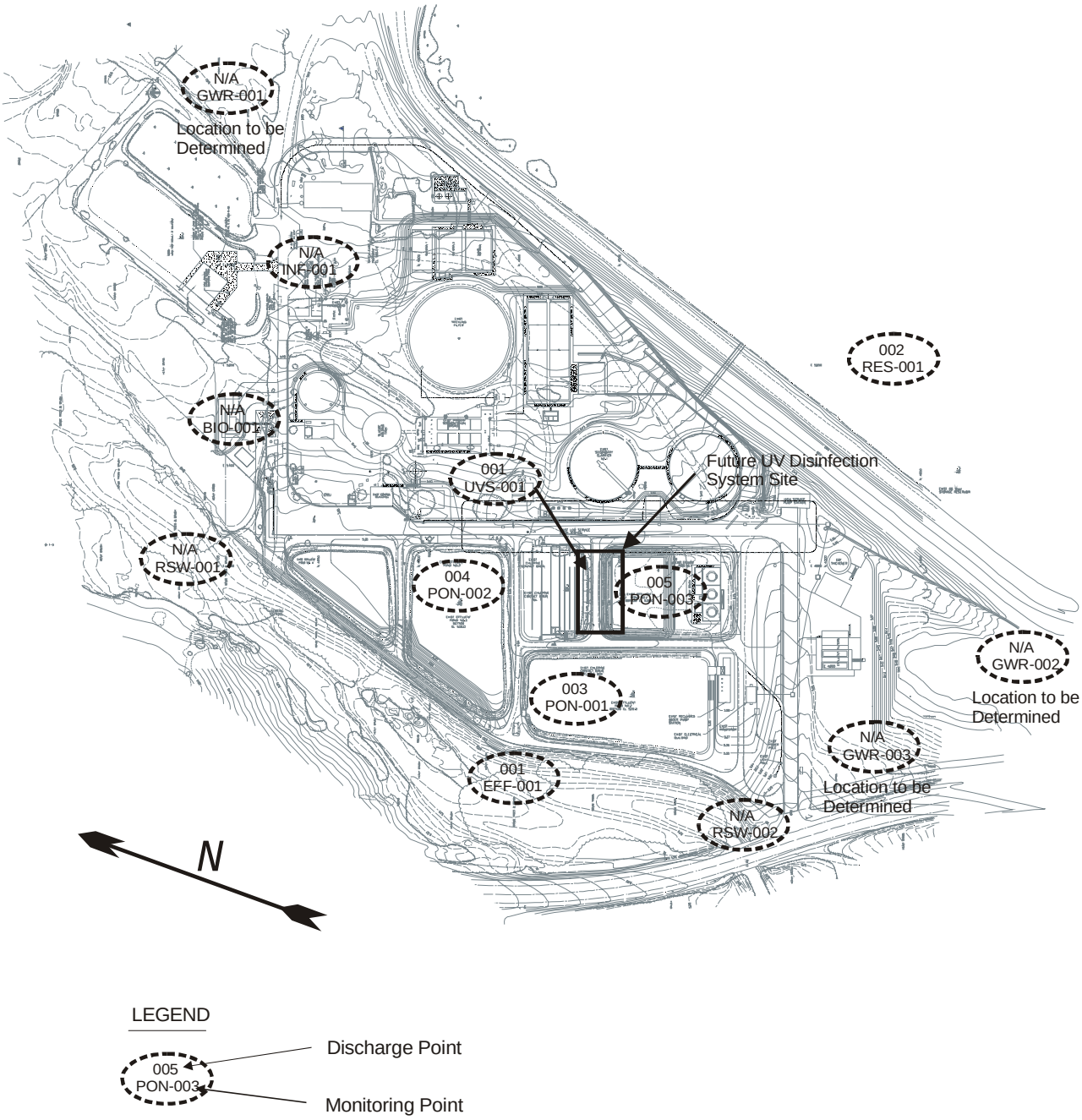
Drawing Reference: CLARKSVILLE U.S.G.S TOPOGRAPHIC MAP 7.5 MINUTE QUADRANGLE *Not to scale*	SITE LOCATION MAP EL DORADO IRRIGATION DISTRICT EL DORADO HILLS WASTEWATER TREATMENT PLANT EL DORADO COUNTY	N W E S

ATTACHMENT C-1 – FLOW SCHEMATIC





ATTACHMENT C-2 – DISCHARGE AND MONITORING POINTS



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 and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 C.F.R. § 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 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(e).)

E. Property Rights

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

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

F. Inspection and Entry

The 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 C.F.R. § 122.41(i); Wat. Code, § 13383):

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

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

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

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 C.F.R. § 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 C.F.R. § 122.41(m)(1)(i).)

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

2. Bypass not exceeding limitations. The 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 C.F.R. § 122.41(m)(2).)

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

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

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

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

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

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 C.F.R. § 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 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

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

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

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

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

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

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

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

If the 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 C.F.R. § 122.41(b).)

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

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

IV. STANDARD PROVISIONS – RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by Part 503), the 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 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

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

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

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

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

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

6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

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

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The 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 C.F.R. § 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or 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 C.F.R. § 122.41(k).)

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

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or 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 C.F.R. § 122.22(b)(1));

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

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

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)

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

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

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.22(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 C.F.R. § 122.41(l)(4)(i).)

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

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided 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 C.F.R. § 122.41(l)(6)(i).)

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

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

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

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

F. Planned Changes

The 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 C.F.R. § 122.41(l)(1)):

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

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

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R.§ 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.42(b)):

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

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

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

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations section 122.48 requires that all NPDES permits specify monitoring and reporting requirements. Water Code Sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and state 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 this Regional Water Board.

B. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the Discharger, 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 must be kept in the laboratory and shall be available for inspection by Regional Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board.

C. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services. Laboratories that perform sample analyses shall be identified in all monitoring reports.

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 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. Monitoring results shall be reported in the units specified in this Monitoring and Reporting Program.

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 (See Attachment C-2)

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	**INF-001**	Influent @ 38º, 38', 19" N, 121º, 3', 36" W
001	**EFF-001**	Effluent @ 38º, 38', 13" N, 121º, 3', 40" W
---	**UVS-001**	Ultraviolet Disinfection System
002	**RES-001**	73 mg Storage Pond @ 38º, 38', 14" N, 121º, 3', 32" W
003	**PON-001**	Storage Pond @ 38º, 38', 13" N, 121º, 3', 39" W
004	**PON-002**	Storage Pond @ 38º, 38', 15" N, 121º, 3', 38" W
005	**PON-003**	Storage Pond @ 38º, 38', 14" N, 121º, 3', 38" W
006	**--**	Not Applicable, Monitored under separate Master Reclamation Permit
--	**BIO-001**	Biosolids
--	**RSW-001**	Receiving Water, Upstream @ 38º, 38', 16" N, 121º, 3', 41" W
--	**RSW-002**	Receiving Water, Downstream @ 38º, 38', 9" N, 121º, 3', 39" W
--	**GWR-001**	See Effluent Limitations Section VI.C.2.d
--	**GWR-002**	See Effluent Limitations Section VI.C.2.d
--	**GWR-003**	See Effluent Limitations Section VI.C.2.d

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

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

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
BOD 5-day 20°C	mg/L, lbs/day	24-hr Composite[1]	~~1~~5~~/~~days/week	
TSS	mg/L, lbs/day	24-hr Composite[1]	~~1/~~5 days/week	
Flow	mgd	Meter	Continuous	
Electrical Conductivity @ 25°C	µmhos/ cm	Grab	1/week	

[1] 24-hour flow proportional composite

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor 001 at EFF-001 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:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
BOD 5-day @ 20°C	mg/L, lbs/day	24-hr Composite[8]	5 days/week~~1/day~~	
TSS	mg/L, lbs/day	24-hr Composite[8]	5 days/week~~1/day~~	
Total Coliform Organisms[0]	MPN/100 mL	Grab	5 days/week~~1/day~~	
Settleable Solids	mL/L	Grab	~~1/~~5 day/week	
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/week	
Persistent Chlorinated Hydrocarbon Pesticides[10]	µg/L	Grab	1/month	
Ammonia (as N) [3, 4]	mg/L, lbs/day	Grab	5 days/week[4] 1/week[4]	
Nitrate (as N)	mg/L	Grab	1/week	
Copper, Total Recoverable[5]	µg/L, ~~lbs/day~~	Grab	1/~~week~~month	
Manganese, Total Recoverable	µg/L, lbs/day	Grab	1/~~week~~month	
Manganese, Dissolved	µg/L, lbs/day	Grab	1/month	
Bis (2-Chloroethyl) ether	µg/L	Grab	1/~~week~~month	
Bis (2-ethylhexyl) phthalate	µg/L	Grab	1/~~week~~month	
Carbon Tetrachloride	µg/L	Grab	1/~~week~~month	
Cyanide	µg/L	Grab	1/~~week~~month	
Dibromochloromethane	µg/L	Grab	1/~~week~~month	
Dichlorobromomethane	µg/L	Grab	1/~~week~~month	
Iron, Total Recoverable	µg/L	Grab	1/~~week~~month	
Total Trihalomethanes (TTHM)	µg/L	Grab	1/~~week~~month	
Zinc, Total Recoverable	µg/L	Grab	1/~~week~~month	
Aluminum, Total Recoverable	µg/L, lbs/day	Grab	1/~~week~~month	
Standard Minerals[6,9]	mg/L	Grab	1/year	
Priority Pollutants[5, 7,9]	µg/L	Grab	1/year	

Flow	mgd	Meter	Continuous	
Total Residual Chlorine[1]	mg/L	Meter	Continuous	
Parameter	**Units**	**Sample Type**	**Minimum Sampling Frequency**	**Required Analytical Test Method and (Minimum Level, units), respectively**
Temperature[2]	°F	~~Meter~~Grab	~~Continuous~~Daily	
Turbidity	NTU	Meter	Continuous	
Dissolved Oxygen	mg/L	~~Meter~~Grab	~~Continuous~~Daily	
pH	standard units	~~Meter~~Grab	~~Continuous~~Daily	
1,1-Dichloroethylene	ug/l	Grab	1/year~~Bimonthly~~	
1,2-Diphenylhydrazine	ug/l	Grab	1/year~~Bimonthly~~	
2,3,7,8-TCDD (Dioxin)	ug/l	Grab	1/year~~Bimonthly~~	
2,6-Dinitrotoluene	ug/l	Grab	1/year~~Bimonthly~~	
3,3'-Dichlorobenzidine	ug/l	Grab	1/year~~Bimonthly~~	
Acrylonitrile	ug/l	Grab	1/year~~Bimonthly~~	
Benzidine	ug/l	Grab	1/year~~Bimonthly~~	
Benzo(a)Anthracene	ug/l	Grab	1/year~~Bimonthly~~	
Benzo(a)Pyrene	ug/l	Grab	1/year~~Bimonthly~~	
Benzo(b)Fluoranthene	ug/l	Grab	1/year~~Bimonthly~~	
Benzo(k)Fluoranthene	ug/l	Grab	1/year~~Bimonthly~~	
Chlorpyrifos (Dursban)	ug/l	Grab	1/year~~Bimonthly~~	
Chrysene	ug/l	Grab	1/year~~Bimonthly~~	
Dibenzo(a,h)anthracene	ug/l	Grab	1/year~~Bimonthly~~	
Dibromochloropropane	ug/l	Grab	1/year~~Bimonthly~~	
Diquat	ug/l	Grab	1/year~~Bimonthly~~	
Indeno(1,2,3-cd) Pyrene	ug/l	Grab	1/year~~Bimonthly~~	
N-Nitrosodimethylamine	ug/l	Grab	1/year~~Bimonthly~~	
N-Nitrosodi-n-Propylamine	ug/l	Grab	1/year~~Bimonthly~~	
Polychlorinated biphenyls (PCBs)	ug/l	Grab	1/year~~Bimonthly~~	
Thiobencarb	ug/l	Grab	1/year~~Bimonthly~~	

[0] Total coliform organisms must be monitored downstream of the disinfection process and may be monitored prior to the dechlorination process.

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

[2] Effluent Temperature monitoring shall be at the Outfall location.

[3] Concurrent with biotoxicity monitoring.

[4] Ammonia effluent monitoring shall be conducted 5 days/week at the same time as pH and Temperature grab sampling to determine compliance with interim ammonia limitations. Upon effective date of final fixed ammonia limitations, ammonia effluent monitoring shall be conducted 1/week.

[4] ~~Report as total.~~

[5] For priority pollutant constituents with effluent limitations, detection limits shall be below the effluent limitations. If the lowest minimum level (ML) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP) is not below the effluent limitation, the detection limit shall be the lowest ML. For priority pollutant constituents without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP.

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

[7] Concurrent with receiving surface water sampling.

[8] 24-hour flow proportioned composite

[9] Samples taken in alternate months e.g. November, January, March, May, July, and September.

[10] Detection limits shall be equal to or less than the lowest minimum level published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (known as the State Implementation Plan or SIP). For persistent chlorinated hydrocarbon pesticides not listed in Appendix 4, the lowest possible detectable level shall be used with a maximum acceptable detection level of 0.05 µg/L. Persistent chlorinated hydrocarbon pesticides include, but are not limited to aldrin, alpha BHC, beta BHC, delta BHC, lindane (gamma BHC), captan, 2,4-D, 2,4-DB, 2,4-D Compounds, 4,4'-DDD, 4,4'-DDE, 4,4' DDT, chlordane, dalapon, dicamba, dichloran, dichloroprop, dicofol, dieldrin, dinoseb, endrin, endrin aldehyde, alpha endosulfan, beta endosulfan, endosulfan sulfate, heptachlor, heptachlor epoxide, hexachlorobenzene, isodrin (an isomer of aldrin), kepone (chlordecone), MCPA, MCPP, methoxychlor, mirex, PCNB (pentachloronitrobenzene), perthane, strobane, 2,4,5-T, 2,4,5,TP (silvex), 2,4,5-T compounds, and toxaphene. All peaks detected during the laboratory analysis other than those identified as persistent chlorinated hydrocarbon pesticides listed above are also to be reported, along with any explanation provided by the laboratory pertaining to what pollutants those peaks may indicate a presence of.

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 data for all of the constituents listed above, except for priority pollutants and standard minerals, 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 bimonthly (every two months) acute toxicity testing, concurrent with effluent ammonia sampling during periods of discharge to Carson Creek.

2. *Sample Types* – For static non-renewal and static renewal testing, the samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location EFF-001.

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

4. *Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition, and its subsequent amendments or revisions. Temperature, hardness, dissolved oxygen, alkalinity, 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 ~~monthly~~ quarterly three species chronic toxicity testing during periods of discharge to Carson Creek.

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 the effluent monitoring location specified in the Monitoring and Reporting Program. The receiving water control shall be a grab sample obtained from the R-001 sampling location, as identified in the 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 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 using statistical analyses 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 (Appendix H), and its subsequent amendments or revisions.

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* – The regular chronic toxicity testing shall be performed using the dilution series identified in Table E-~~5~~4, below. Due to low flow in the receiving water no dilution credit is allowed. Therefore, toxicity of the undiluted effluent is of interest. ~~As such, no serial dilutions of the effluent need to be tested.~~ The receiving water is included in the test matrix to determine its toxicity and, if pathogen related mortality (PRM) is observed in the effluent, the receiving water may provide a relevant comparison.

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 Special Provisions VI.~~-~~C.2.a.iii.)

Table E-4. Chronic Toxicity Testing Dilution Series

Sample	Dilutions (%)					Controls	
	100	85[1]	75[1]	50[1]	25[1]	Receiving Water	Laboratory Water
% Effluent	100	85	75	50	25	0	0
% Receiving Water	0	15	25	50	75	100	0
% Laboratory Water	0	0	0	0	0	0	100

[1] Dilution series of 85%, 75%, 50%, and 25% optional during the regular quarterly 3-species toxicity testing only. The complete dilution series is required for accelerated monitoring chronic toxicity testing and TRE requirements.

1

~~Table E-4. Chronic Toxicity Testing Dilution Series~~

~~Sample~~	~~Dilutions (%)~~	~~Controls (%)~~	
	~~100~~	~~Receiving Water~~	~~Laboratory Water~~
~~% Effluent~~	~~100~~	~~0~~	~~0~~
~~% Receiving Water~~	~~0~~	~~100~~	~~0~~
~~% Laboratory Water~~	~~0~~	~~0~~	~~100~~

C. **WET Testing Notification Requirements**. The Discharger shall notify the Regional Water Board within 24-hrs 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 Regional Water Board within 30 days following completion of the test, and shall contain, at minimum:

   a. The results expressed as test endpoints (i.e. survival, reproduction, growth) and indicating any statistical significance.

   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, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or TRE.

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports and reported as percent survival.

3. **TRE Reporting.** Reports for Toxicity Reduction Evaluations shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Work 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

A. Monitoring Locations RES-001, PON-001, PON-002, and PON-003

1. The Discharger shall monitor Treatment Ponds at RES-001, PON-001, PON-002, and PON-003 as follows:

Table E-5. Land Discharge Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	Grab	Monthly	
pH	Std. Units	Grab	Monthly	
Specific Conductance (EC)	umhos/cm	Grab	Monthly	
Standard Minerals[1]	mg/L	Grab	1/year	
Title 22 Metals[2]	mg/L	Grab	1/year	
Freeboard	feet	Observation	Monthly	
Color	-	Observation	Monthly	
Odor	-	Observation	Monthly	
Levee Condition	-	Observation	Monthly	

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

2 Title 22 metals shall include the analyses of arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc.

VII. RECLAMATION MONITORING REQUIREMENTS (NOT APPLICABLE)

Reclamation monitoring is covered under a separate Master Reclamation Permit issued to the Discharger in accordance with Title 22 and the California Water Code.

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Location RSW-001, RSW-002

1. The Discharger shall monitor Carson Creek at RSW-001 and RSW-002 (simultaneously) , when discharging to Carson Creek, and at RSW-001 when not discharging to Carson Creek, as follows:

Table E-6a. Surface Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	
Dissolved Oxygen	mg/L	Grab	1/week	
pH	Standard Units	Grab	1/week	
Temperature	°F (°C)	Grab	1/week	
Radionuclides[4]	Pci/l	Grab	Annually	
Standard Minerals[2,4] (RSW-001 Only)	mg/L	Grab	Annually	
Priority Pollutants[1, 3 ,4] (RSW-001 Only)	µg/L	Grab	Annually	
Turbidity	NTU	Grab	1/Week	
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/week	
Fecal coliform	MPN/100 ml	Grab	5/Month~~ly~~[4]	
Floating or suspended matter	Narrative	Visual	1/Week	
Discoloration	Narrative	Visual	1/Week	
Bottom deposits	Narrative	Visual	1/Week	
Aquatic life	Narrative	Visual	1/Week	
Visible films, sheens or coatings	Narrative	Visual	1/Week	
Fungi, slimes, or objectionable growths	Narrative	Visual	1/Week	
Potential nuisance conditions	Narrative	Visual	1/Week	
Foam	Narrative	Visual	1/Week	

1 For priority pollutant constituents with effluent limitations, detection limits shall be below the effluent limitations. If the lowest minimum level (ML) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP) is not below the effluent limitation, the detection limit shall be the lowest ML. For priority pollutant constituents without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP.

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

3 Concurrent with effluent water sampling.

4 ~~Samples taken in alternate months e.g. November, January, March, May, July, and September~~In accordance with page III-3.0 of Basin Plan.

B. Monitoring Location GWR-001, GWR-002, GWR-003, etc. (as required in Effluent Limitations Section VI.C.2.d)

1. The Discharger shall monitor underlying groundwater at GWR-001, GWR-002, GWR-003, etc. as required in Effluent Limitations Section VI.C.2.d regardless of whether the Discharger is discharging to Carson Creek as follows:

Table E-6b. Groundwater Monitoring Requirements

Parameter[1]	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Coliform	MPN/100 ml	Grab	Bimonthly	
~~Ammonia, Total (as NH_4)~~	~~mg/l~~	~~Grab~~	~~Bimonthly~~	
Total Dissolved Solids	mg/l	Grab	Bimonthly	
Nitrate + Nitrite (as N)	mg/l	Grab	Bimonthly	

[1]Prior to sampling, the groundwater monitoring wells shall be pumped until the temperature, specific conductivity, and pH have stabilized to ensure representative samples.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

1. A composite sample of sludge shall be collected annually at Monitoring Location BIO-001 in accordance with EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for priority pollutants listed in 40 CFR section 122 Appendix D, Tables II and III (excluding total phenols).

2. A composite sample of sludge shall be collected when sludge is removed from the ponds for disposal in accordance with USEPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for the metals listed in Title 22.

3. Sampling records shall be retained for a minimum of **five years**. A log shall be kept of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report.

4. Upon removal of sludge, the Discharger shall submit characterization of sludge quality, including sludge percent solids and quantitative results of chemical analysis for the priority pollutants listed in 40 CFR 122 Appendix D, Tables II and III (excluding total phenols). Suggested methods for analysis of sludge are provided in USEPA publications titled "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods" and "Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater". Recommended analytical holding times for sludge samples should reflect those specified in 40 CFR 136.6.3(e). Other guidance is available in USEPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989.

B. Ultraviolet Disinfection System

1. Monitoring Location UVS-001

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow rate	MGD	Meter	Continuous
Turbidity	NTU	Meter	Continuous
Number of UV banks in operation	#	Meter	Continuous
UV Transmittance	%	Meter	Continuous
UV Power Setting	%	Meter	Continuous
UV Dose[1]	mW-sec/cm^2	Calculated	Continuous

[1] Report daily minimum UV dose, daily average UV dose, and weekly average UV dose. For the daily minimum UV dose, also report associated number of banks, gallons per minute per lamp, power settings, and UV transmittance used in the calculation. If effluent discharge has received less than the minimum UV dose and is not diverted from discharging to Carson Creek, report the duration and dose calculation variables associated with each incident.

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 Regional 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 Regional 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 Regional Water Board by letter when it returns to compliance with the compliance time schedule.

4. The Discharger shall report to the Regional 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 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 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 ($\pm$ a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

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

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

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

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

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

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

2. Monitoring results shall be submitted to the Regional Water Board by the **first day** of the second month following sample collection. Quarterly, semi-annual, and annual monitoring results shall be submitted by the **first day of the second month following each calendar quarter, semi-annual period, and year**, respectively.

3. 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. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, and removal efficiencies (%) for BOD and Total Suspended Solids, shall be determined and recorded as needed to demonstrate compliance.

4. With the exception of flow, all constituents monitored on a continuous basis (metered), shall be reported as daily maximums, daily minimums, and daily

averages; flow shall be reported as the total volume discharged per day for each day of discharge.

5. If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

6. A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions.

7. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

   Regional Water Quality Control Board
   Central Valley Region
   Attn: NPDES Compliance and Enforcement Unit
   11020 Sun Center Dr., Suite #200
   Rancho Cordova, CA 95670-6114

8. 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**
Hourly	**Permit effective date**	**Hourly**	**Submit with monthly SMR**
Daily	**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**
Weekly	**Sunday following permit effective date or on permit effective date if on a Sunday**	**Sunday through Saturday**	**Submit with monthly SMR**
Monthly	**First day of calendar month following permit effective date or on permit effective date if that date is first day of the month**	**1st day of calendar month through last day of calendar month**	**Submit with quarterly SMR**

Bimonthly (every two months)	**First day of calendar month following permit effective date or on permit effective date if that date is first day of the month**	**1st day of calendar month through last day of following calendar month**	**Submit with quarterly SMR**
Quarterly	**Closest of 1 January, 1 April, 1 July, or 1 October following (or on) permit effective date**	**1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December**	**first day of the second month**
Semiannually	**Closest of 1 January or 1 July following (or on) permit effective date**	**1 January through 30 June 1 July through 31 December**	**first day of the second month**
Annually	**1 January following (or on) permit effective date**	**1 January through 31 December**	**first day of the second month**

C. Discharge Monitoring Reports (DMRs)

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

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

Standard Mail	**FedEx/UPS/ Other Private Carriers**
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated cannot be accepted unless they follow the exact same format as the EPA Form 3320-1.

D. Other Reports

1. **Progress Reports.** As specified in the compliance time schedules required in Special Provisions VI, progress reports shall be submitted in accordance with the following reporting requirements. At minimum, the progress reports shall include a discussion of the status of final compliance, whether the Discharger is on schedule to meet the final compliance date, and the remaining tasks to meet the final compliance date.

Table E-8. Reporting Requirements for Special Provisions Progress Reports

Special Provision	Reporting Requirements
Pollution Prevention Plan for mercury per Section VI.C.3.b	**1 December**, annually, after approval of work plan
BPTC Evaluation Tasks	**1 February**, annually**,** following completion of Task 4 of BPTC Evaluation Compliance Schedule
Progress Reports: Compliance Schedules for Final Effluent Limitations for **Aluminum, Ammonia, Bis (2-Chloroethyl) ether, Bis (2-ethylhexyl) phthalate, Carbon Tetrachloride, Copper, Cyanide, Dibromochloromethane, Dichlorobromomethane, Electrical Conductivity (EC), Persistent Chlorinated Hydrocarbon Pesticides, Total Trihalomethanes (TTHM), and Zinc**.	**1 June**, annually, until final compliance
Pollution Prevention Plan: Compliance Schedules for Final Effluent Limitations for **Aluminum, Ammonia, Bis (2-Chloroethyl) ether, Bis (2-ethylhexyl) phthalate, Carbon Tetrachloride, Copper, Cyanide, Dibromochloromethane, Dichlorobromomethane, Electrical Conductivity (EC), Persistent Chlorinated Hydrocarbon Pesticides, Total Trihalomethanes (TTHM), and Zinc**.	**1 June**, annually, after approval of work plan until final compliance
Treatment Feasibility Study: Compliance Schedules for Final Effluent Limitations for **Aluminum, Ammonia, Bis (2-Chloroethyl) ether, Bis (2-ethylhexyl) phthalate, Carbon Tetrachloride, Copper, Cyanide, Dibromochloromethane, Dichlorobromomethane, Electrical Conductivity (EC), Persistent Chlorinated Hydrocarbon Pesticides, Total Trihalomethanes (TTHM), and Zinc**.	**1 June**, annually, after approval of work plan until final compliance

2. Within **60 days** of permit adoption, the Discharger shall submit a report outlining minimum levels, method detection limits, and analytical methods for approval, with a goal to achieve detection levels below applicable water quality criteria. At a minimum, the Discharger shall comply with the monitoring requirements for CTR constituents as outlined in Section 2.3 and 2.4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, adopted March 2, 2000 by the State Water Resources Control Board. All peaks or spikes identified by analytical methods shall be reported. Peaks or spikes that do not conform to the standards shall be reported. Peaks or spikes that do not conform to the standards, including any unknown complex mixtures that elute at times which vary from the standards must be reported. These mixtures may not compare to the standards and may not be readily identified; however, they are to be reported.

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. **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 Regional 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.

5. **Annual Pretreatment Reporting Requirements.** The Discharger shall submit annually a report to the Regional Water Board, with copies to US EPA Region 9 and the State Water Board, describing the Discharger's pretreatment activities over the previous 12 months. In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

   An annual report shall be submitted by **28 February** and include at least the following items:

   a. A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTW's influent and effluent for those pollutants EPA has identified under Section 307(a) of the CWA which are known or suspected to be discharged by industrial users.

Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto.

b. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant, which the Discharger knows or suspects were caused by industrial users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of, the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or noncompliance with sludge disposal requirements.

c. The cumulative number of industrial users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.

d. An updated list of the Discharger's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Discharger shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent than the federal categorical standards. The Discharger shall also list the noncategorical industrial users that are subject only to local discharge limitations. The Discharger shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:

   i. complied with baseline monitoring report requirements (where applicable);
   ii. consistently achieved compliance;
   iii. inconsistently achieved compliance;
   iv. significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);
   v. complied with schedule to achieve compliance (include the date final compliance is required);
   vi. did not achieve compliance and not on a compliance schedule; and
   vii. compliance status unknown.

A report describing the compliance status of each industrial user characterized by the descriptions in items iii. through vii. above shall be submitted for each calendar ~~quarter~~ year **within 21 days of the end of the ~~quarter~~calendar year**. The report shall identify the specific compliance status of each such industrial user and shall also identify the compliance status of the POTW with regards to audit/pretreatment compliance inspection requirements. If none of the aforementioned conditions exist, at a minimum, a letter indicating that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the ~~quarter~~ year must be submitted. ~~The information required in the fourth quarter report shall be included as part of the annual report.~~ This ~~quarterly~~ annual reporting requirement shall commence upon issuance of this Order.

e. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding the industrial users. The summary shall include:

   i. the names and addresses of the industrial users subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and
   ii. the conclusions or results from the inspection or sampling of each industrial user.

f. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:

   i. Warning letters or notices of violation regarding the industrial users' apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations.
   ii. Administrative Orders regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
   iii. Civil actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
   iv. Criminal actions regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
   v. Assessment of monetary penalties. For each industrial user identify the amount of the penalties.
   vi. Restriction of flow to the POTW.

vii. Disconnection from discharge to the POTW.

g. A description of any significant changes in operating the pretreatment program which differ from the information in the Discharger's approved Pretreatment Program including, but not limited to, changes concerning: the program's administrative structure, local industrial discharge limitations, monitoring program or monitoring frequencies, legal authority or enforcement policy, funding mechanisms, resource requirements, or staffing levels.

h. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.

Duplicate signed copies of these Pretreatment Program reports shall be submitted to the Regional Water Board and the:

State Water Resources Control Board
Division of Water Quality
P.O. Box 944213
Sacramento, CA 94244-2130

and the

Regional Administrator
U.S. Environmental Protection Agency W-5
75 Hawthorne Street
San Francisco, CA 94105

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

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

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	**5B090102005**
Discharger	El Dorado Irrigation District
Name of Facility	El Dorado Hills Wastewater Treatment Plant, El Dorado Hills
Facility Address	4625 Latrobe Road
	El Dorado, CA 95762
	El Dorado
Facility Contact, Title and Phone	David Powell, Assistant Director-Facilities, 530-622-4513
Authorized Person to Sign and Submit Reports	Ane D. Deister, General Manager, 530-622-4513
Mailing Address	2890 Mosquito Road, Placerville, CA 95667
Billing Address	SAME
Type of Facility	POTW
Major or Minor Facility	Major
Threat to Water Quality	A
Complexity	1
Pretreatment Program	Y
Reclamation Requirements	Producer
Facility Permitted Flow	4.0 million gallons per day (mgd) Average Daily Design Flow (AD~~D~~WF)
Facility Design Flow	4.0 mgd AD~~D~~WF
Watershed	San Joaquin
Receiving Water	Carson Creek
Receiving Water Type	Inland surface water

A. El Dorado Irrigation District (hereinafter Discharger) is the owner and operator of El Dorado Hills Wastewater Treatment Plant (hereinafter Facility), a Publicly Owned Treatment Works.

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 Carson Creek, a water of the United States, and is currently regulated by Order R5-01-135 which was adopted on 14 June 2001 and expired on 1 June 2006. The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements and NPDES permit are adopted pursuant to this Order.

C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on 27 December 2005. Supplemental information was requested and received between 10 October 2006 and 16 April 2007. A site visit was conducted on 28 November 2006, to observe operations and to develop permit limitations and conditions.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the community of El Dorado Hills and serves a population of approximately 40,000 through the use of two wastewater treatment plants. The WWTP permitted by this Order has a design daily average flow capacity is 3.0 mgd. The Facility produces reclaimed water in accordance with Title 22 and the California Water Code for reuse in the Discharger's reclaimed water distribution system. When the facility is not reclaiming the wastewater for reuse the facility discharges to surface waters in accordance with this Order. The Facility typically discharges to the receiving water between November and April, and reclaims water for reuse between May and October. During the time when the Facility is reclaiming the wastewater for reuse there are no discharges to the receiving water.

A. Description of Wastewater and Biosolids Treatment or Controls

The treatment system consists of headworks, screening and grit removal, primary clarifiers, activated sludge basins with nitrification, biological nutrient removal tanks, secondary clarifiers, tertiary filters, dissolved air flotation sludge thickening, belt filter press, anaerobic digester, and chlorine contact disinfection. Chlorine contact disinfection will be replaced with ultraviolet (UV) disinfection during the term of this permit. Sludge is anaerobically digested and dewatered using a belt filter press. Dried biosolids are hauled away for use in biosolids land applications. Wastewater is either treated and recycled by the Discharger for use in their reclaimed water distribution system or treated and discharged from Discharge 001 (see table on cover page) to the Carson Creek, a water of the United States, and a tributary to Cosumnes River within the San Joaquin River Watershed. The specifications and use of reclaimed water is covered under a separate Master Reclamation Permit issued to the Discharger in accordance with Title 22 and the California Water Code. The Attachment B provides a map of the area around the Facility. Attachment C-1 provides a flow schematic of the existing Facility.

B. Discharge Points and Receiving Waters

1. The Facility is located in Section 14, T9N, R8E, MDB&M, as shown in Attachment B (Figure B-1), a part of this Order.

2. Treated municipal wastewater is discharged at Discharge Point 001 to Carson Creek, a water of the United States *and a tributary to* Cosumnes River at a point Latitude 38°, 38', 12" N and longitude 121°, 3', 40" W.

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

Effluent limitations contained in the existing Order for discharges from 001 (Monitoring Location EFF-001) and representative monitoring data from the term of the previous Order are as follows:

Table F-2a. Historic Effluent Limitations and Monitoring Data

		Effluent Limitation			Monitoring Data From <06/14/2001 – To 06/13/2006		
Parameter	**Units**	**Average Monthly**	**Average Weekly**	**Maximum Daily**	**Highest Average Monthly Discharge**	**Highest Average Weekly Discharge**	**Highest Daily Discharge**
BOD	mg/L	10	15	30	5	10	24
	lbs/day	250	376	750	78	117	518
% BOD Removal	%	85			97% minimum		
TSS	mg/L	10	15	30	3	6	20
	lbs/day	250	376	750	51	97	395
% TSS Removal	%				98% minimum		
Settleable Solids	ml/L	0.1	-	0.2	0.05	-	0.05
Total Coliform Organisms	MPN/ 100 ml	-	2.2 (7 day median)	23	-	70	1600
Turbidity	NTU	-	2 (average daily)	5	-	1.2 (average daily)	4.6
Ammonia	mg/L	Floating limits based on pH and Temperature			1.1	-	3.4
Nitrate	mg/L	10	-	-	6.8	-	-
PH		-	-	Instantaneous range of 6.5 to 8.5	-	-	6.2 to 7.7
Chlorine Residual	mg/L	-	.01	.02 (1 hr average)	-	<.01	<.02

		Effluent Limitation			Monitoring Data From <06/14/2001 – To 06/13/2006		
Parameter	**Units**	**Average Monthly**	**Average Weekly**	**Maximum Daily**	**Highest Average Monthly Discharge**	**Highest Average Weekly Discharge**	**Highest Daily Discharge**
Acute Toxicity	%	70% minimum for any one bioassay 90% median for any three consecutive bioassays			100 % survival rate in 100% effluent		
EPA Priority Pollutants	No effluent limits for EPA Priority Pollutants				See Table F-5a		

Table F-2b. Historic Downstream Receiving Water Limitations and Monitoring Data

Parameter	Units	Receiving Water Limitation	Monitoring Data (From 06/14/2001 – To 06/14/2006)		
		Criteria	**Lowest Recorded Value**	**Highest Recorded Value**	**Maximum Change/ Increase**
DO	mg/L	Cannot fall below 7.0	2.5	13.9	-
Turbidity	NTU	Cannot increase 1 NTU when natural turbidity between 0 and 5	-	-	.5
		Cannot increase 20% over natural turbidity when natural turbidity between 5 and 50	-	-	12.3
		Cannot increase 10 NTU when natural turbidity between 50 and 100	-	-	0
		Cannot increase 10% over natural turbidity when natural turbidity greater than 100	-	-	140
PH	Std units	Instantaneous range of 6.5 to 8.5	6.9	8.1	-
		Cannot change by more than .5	-	-	.5
Temperature	°F	Cannot change by more than 5°	46	75	6.1

Table F-2c. Historic Pond Limitations and Monitoring Data

Parameter	Units	Pond Limitation	Monitoring Data (From 01/04/2002 – To 06/14/2006)	
		Criteria	**Lowest Recorded Value**	**Highest Recorded Value**
Reclamation Storage Pond				
DO	mg/L	Cannot fall below 1.0	4.3	16.4
Storage Pond #1				
DO	mg/L	Cannot fall below 1.0	2.7	15.6
Storage Pond #2				
DO	mg/L	Cannot fall below 1.0	1.3	19.5
Storage Pond #3				
DO	mg/L	Cannot fall below 1.0	1.0	12.2

D. Compliance Summary

During the term of the previous Order the Discharger reported the following results of non-compliance:

1. Two (2) instances of exceeding pH limitations in effluent;
2. Four (4) instances of exceeding total coliform limitations in effluent;
3. Seven (7) instances of exceeding DO limitations in receiving water;
4. Three (3) instances of exceeding temperature limitations in receiving water;
5. Three (3) instances of exceeding natural turbidity limitations in receiving water;
6. Twelve (12) instances of exceeding DO limitations in storage ponds;
7. Three (3) instances of exceeding DO limitations in storage reservoir; and
8. Five (5) instances of not conducting three species chronic toxicity monitoring four (4) times per year.

The previous Order required effluent monitoring only during periods of discharge to the receiving water. The previous Order implied that receiving water monitoring was required even during periods where the Discharger was not discharging to the receiving water. The Discharger did not monitor the receiving water during periods when there was no discharge to the receiving water. This Order clarifies monitoring and reporting requirements for the receiving water.

E. Planned Changes

The Discharger plans to expand their facility from 3.0 mgd AD~~D~~WF to 4.0 mgd AD~~D~~WF during the term of this permit. The expansion will replace their existing headworks with a new headworks to accommodate increase in influent flows. The headworks will be housed in a new building with odor control. The Discharger also plans to add two flow equalization basins with appropriate flow handling system (pumping station) and odor control. Odor control for the equalization basins and the headworks will be handled by addition of a biofilter. The Discharger also plans to add an additional algae Disolved Air Flotation (DAF) Thickener with associated appurtenant equipment building. The Discharger also plans to add two new secondary effluent pump stations providing additional flow to/from their 73 million gallon storage reservoir. The Discharger also plans to add one new tertiary filter bank including a filter feed pump station and add Ultraviolet (UV) disinfection to meet new effluent limits. Finally, during the proposed expansion the Discharger will clean out two existing unlined storage ponds and replace them with lined storage ponds to prevent percolation of wastewater into groundwater aquifers. The proposed changes are documented in Attachment C-1.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the applicable plans, policies, and regulations identified in section II of the Limitations and Discharge Requirements (Findings). This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

A. Legal Authority

See Limitations and Discharge Requirements - Findings, Section II.C.

B. California Environmental Quality Act (CEQA)

See Limitations and Discharge Requirements - Findings, Section II.E.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans**. The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised August 2006), for the Sacramento and San Joaquin River Basins* (Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Board Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. 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*." The Basin Plan does not list beneficial uses for Carson Creek, but does identify present and potential uses for Cosumnes River, to which Carson Creek, via Deer Creek, is tributary. Therefore the beneficial uses of the Carson Creek downstream of the discharge are municipal and domestic supply; agricultural supply; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; cold and warm freshwater migration of aquatic organisms; cold and warm freshwater spawning, reproduction, and /or early development; and wildlife habitat. The Department of Fish and Game has identified several species either threatened or endangered in the United States Geological Survey Quadrant 3812161 in which the receiving water is located during periods where there is hydraulic continuity between Carson Creek, Deer Creek, and the Cosumnes River, Carson Creek adds to the quantity and may impact the quality of water flowing downstream in Cosumnes River. In areas along Carson Creek where groundwater elevations are below the stream bottom water from the stream will percolate to groundwater. Since Carson Creek is at times dry, it is reasonable to assume that the stream water is lost by evaporation, and percolation to groundwater.

   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.

This Order contains Effluent Limitations requiring a tertiary level of treatment, or equivalent, which is necessary to protect the beneficial uses of the receiving water. The Regional Water Board has considered the factors listed in CWC section 13241 in establishing these requirements, as discussed in more detail in the Fact Sheet, Attachment F, IV.C.3.u.

2. **Antidegradation Policy.** Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in detail in the Section IV.D.4., the discharge is consistent with the antidegradation provisions of 40 CFR section 131.12 and State Water Board Resolution 68-16.

3. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. Compliance with the Anti-Backsliding requirements is discussed in Section IV.D.3.

4. **Emergency Planning and Community Right to Know Act**. Section 13263.6(a), California 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) (EPCRKA) 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 Emergency Planning and Community Right to Know Act (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 CWC 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.

5. **Stormwater Requirements.** USEPA promulgated Federal Regulations for storm water on November 16, 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 stormwater program and are obligated to comply with the Federal Regulations.

6. **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.

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

1. Under Section 303(d) of the 1972 Clean Water Act, 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 July 25, 2003 USEPA gave final approval to California's 2002 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 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 listing for the Carson Creek includes: aluminum and manganese.

2. **Total Maximum Daily Loads.** The US EPA requires the Regional Water Board to develop total maximum daily loads (TMDLs) for each 303(d) listed pollutant and water body combination. The Regional Water Board estimates completion of the TMDLs for aluminum and manganese by 2019.

E. Other Plans, Polices and Regulations

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

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

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

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

2. The State Water Board adopted the *Water Quality Control Policy for the Enclosed Bays and Estuaries of California*. The requirements within this Order are consistent with the Policy.

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 Clean Water Act (CWA) and amendments thereto are applicable to the discharge.

The Federal 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 Section 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 discharges to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations

and other requirements in NPDES permits. There are two principal bases for effluent limitations: 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 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 Regional Water Board's Basin Plan, 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 Regional Water Board must establish effluent limitations using one or more of three specified sources, including (1) EPA'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 contains a narrative objective requiring that: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*" (narrative toxicity objective). The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, discoloration, toxic substances, radionuclides, or taste and odor producing substances that adversely affect beneficial uses. 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 Basin Plan also limits chemical constituents in concentrations that adversely affect surface water beneficial uses. For waters designated as municipal, the Basin Plan specifies that, at a minimum, waters shall not contain concentrations of constituents that exceed Maximum Contaminant Levels (MCL) of CCR Title 22. The Basin Plan further states that, to protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

A. Discharge Prohibitions

1. *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 Regional Water Board's prohibition of bypasses, the State Water Board adopted a precedential decision, Order No. WQO 2002-0015, which cites the Federal Regulations, 40 CFR 122.41(m), as allowing bypass only for essential maintenance to assure efficient operation.*

2. The Discharger has indicated that UV disinfection will be used to meet effluent limits for trihalomethanes (THMs). The Discharger also provides chlorine disinfection for treatment of reclaimed wastewater prior to discharge to the reclaimed water distribution system. The Discharger has indicated that it intends to use chlorine

disinfection as a backup system to UV disinfection prior to discharge to the receiving water. The use of chlorine disinfection as a backup to UV disinfection is considered a "bypass" and is prohibited unless conditions of Section I.G of Attachment D are met. "Bypass" for preventive or operational maintenance is not allowed unless it meets the conditions of Section I.G.3.

B. Technology-Based Effluent Limitations

1. Scope and Authority

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

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

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 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 biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH.

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. Tertiary treatment is necessary to protect the beneficial uses of the receiving stream and the final effluent limitations for BOD_5 and TSS are based on the technical capability of the tertiary process. BOD_5 is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The secondary and tertiary treatment standards for BOD_5 and TSS are indicators of the effectiveness of the treatment processes. The principal design parameter for wastewater treatment plants is the daily BOD_5 and TSS loading rates and the corresponding removal rate of the system. In applying 40 CFR Part 133 for weekly and monthly average BOD_5 and TSS limitations, 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; the 30-day average BOD_5 and TSS limitations have been revised to 10 mg/L, which is technically based on the capability of a tertiary system. In addition to the average weekly and average monthly effluent limitations, a daily maximum effluent limitation for BOD_5 and TSS is included in the Order to ensure that the treatment works are not organically overloaded and operate in accordance with design capabilities. See Table F-3 for final technology-based effluent limitations required by this Order. 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 El Dorado Hills Wastewater Treatment Plant is currently designed to provide a tertiary level of treatment for up to an Average ~~Daily~~ Dry ~~Design~~Weather Flow (AD~~D~~WF) of 3.0 mgd. However, the Discharger is proposing expansion of the El Dorado Hills Wastewater Treatment Plant to 4.0 mgd during the term of this Order. Therefore, this Order also contains an Average ~~Daily Discharge~~Dry Weather Flow effluent limitation of 4.0 mgd.

Summary of Technology-based Effluent Limitations
Discharge Point 001

Table F-3. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD 5-day @ 20°C	mg/L	10	15	30	---	---
TSS	mg/L	10	15	30	---	---

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

As specified in section 122.44(d)(1)(i), permits are required to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an in-stream excursion above any state water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. **Receiving Water.** Treated municipal wastewater is discharged to Carson Creek, a water of the United States *and a tributary to* Cosumnes River at a point Latitude 38°, 38', 12" N and longitude 121°, 3', 40" W. The Basin Plan does not specifically identify beneficial uses for Carson Creek, but does identify existing uses for Cosumnes River, to which Carson Creek, via Deer Creek, is tributary. These beneficial uses are as follows: municipal and domestic supply; agricultural supply, including stock watering; water contact recreation; non-contact water recreation, including aesthetic enjoyment; warm freshwater habitat; cold freshwater habitat; cold and warm freshwater migration of aquatic organisms; cold and warm freshwater spawning, reproduction, and /or early development; and wildlife habitat.

The Department of Fish and Game has identified several species either threatened or endangered in the United States Geological Survey Quadrant 3812161 in which the receiving water is located. During periods where there is hydraulic continuity between Carson Creek, Deer Creek, and the Cosumnes River, Carson Creek adds to the quantity and may impact the quality of water flowing downstream in Cosumnes River. In areas along Carson Creek where groundwater elevations are below the stream bottom water from the stream will percolate to groundwater. 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.

The receiving water is considered a Tier II waterbody per federal antidegradation policy 40 CFR Section 131.12 with the exception of two pollutants aluminum and manganese which are currently listed on California's 2002 Section 303(d) List of Water Quality Limited Segments as required by the 1972 Clean Water Act. The quality of the receiving water exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water. Table 5b lists receiving water constituents with detectable results.

The Regional Water Board has found that based on available information provided by the Discharger that the receiving water, absent discharge from the Discharger, is an ephemeral stream. Stream flows upstream from the discharge point during periods of discharge have been reported as absent during two weeks in November 2003.

b. **Hardness.** While no effluent limitation for hardness is necessary in this Order, hardness is critical to the assessment of the need for, and the development of, effluent limitations for certain metals. The *California Toxics Rule*, at (c)(4), states the following:

"Application of metals criteria. (i) *For purposes of calculating freshwater aquatic life criteria for metals from the equations in paragraph (b)(2) of this section, for waters with a hardness of 400 mg/L or less as calcium carbonate, the actual ambient hardness of the surface water* <u>*shall*</u> *be used in those equations*." [emphasis added]

The State Water Board, in footnote 19 to Water Quality Order No. 2004-0013, stated: "*We note that…the Regional Water Board…applied a variable hardness value whereby effluent limitations will vary depending on the actual, current hardness values in the receiving water. We recommend that the Regional Water Board establish either fixed or seasonal effluent limitations for metals, as provided in the SIP, rather than 'floating' effluent limitations*."

Effluent limitations for the discharge are established to protect the beneficial uses of the receiving water for all discharge conditions. In the absence of the option of including condition-dependent, "floating" effluent limitations that are reflective of actual conditions at the time of discharge, effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions.

The lowest upstream hardness concentration reported in the receiving water was 42 mg/L, based on 51 samples collected between 28 March 2001 and 11 May 2006. During periods when the upstream flow is zero due to the ephemeral nature of the receiving water, the hardness concentration downstream from the discharge point in the receiving water is equivalent to the effluent hardness concentration. The lowest effluent hardness concentration reported was 52 mg/L, based on 56 samples collected between 28 March 2001 and May 11 2006. Therefore, it is concluded that the reasonable worse case receiving water hardness concentration is 52 mg/L (as $CaCO_3$).

Analysis of the receiving water data concluded that the lowest upstream hardness concentration of 42 mg/L does not accurately represent the reasonable worst-case condition in the receiving water. The observed 42 mg/L in the receiving water is well below the 99th percentile of the hardness dataset, or 62.6 mg/L, indicating that it is not a reasonable representation of the worst-case condition for hardness. (The value of 42 mg/L for receiving water hardness

represents a 0.007% probability of this condition occurring). Therefore, for the purposes of establishing water quality-based effluent limitations, the next worst-case hardness, the downstream hardness value of 52 mg/L as $CaCO_3$ (measured on 19 September 2001) was used.

c. **Assimilative Capacity/Mixing Zone.** The receiving water is considered a Tier II waterbody per federal antidegradation policy 40 CFR Section 131.12 with the exception of two pollutants, aluminum and manganese, which are currently listed on California's 200~~2~~6 Section 303(d) List of Water Quality Limited Segments as required by the 1972 Clean Water Act. Tier II designated waterbodies contain assimilative capacity to accept additional pollutant loading without diminishing existing beneficial uses of the waterbody. An antidegradation analysis was performed and the additional pollutant loadings discharged to the receiving water is consistent with the antidegradation provisions of 40 CFR section 131.12 and State Water Board Resolution 68-16.

The receiving water has been determined by the Regional Water Board to be an ephemeral stream. Therefore no mixing zone or dilution has been granted in the development of water quality based effluent limits.

The previous Order allowed discharge of traditional secondary-level treated and disinfected wastewater to the receiving water consistent with Department of Health Services (DHS) recommendations to protect public health during periods when twenty-to-one dilution flows are available in the receiving water. ~~Therefore,~~Secondary effluent limitations were provided in the previous Order for periods when dilution flows of twenty-to-one are available in the receiving water. ~~However, new water quality based effluent limits established in this Order for metals such as zinc, aluminum, copper, and manganese require tertiary level of treatment.~~ This Order maintains secondary-level~~Therefore,~~ effluent limitations ~~based~~ when the receiving water-to-effluent flow ratio is ~~on~~ twenty-to-one or greater, and establishes tertiary-level effluent limitations, in accordance with DHS Title 22 requirements, when the receiving water-to-effluent ~~dilution~~ flow~~s~~ ratio is less than twenty-to-one. ~~in the receiving water have been eliminated from this Order.~~

3. Determining the Need for WQBELs

a. CWA section 301 (b)(1) requires NPDES permits to include effluent limitations that achieve technology-based standards and any more stringent limitations necessary to meet water quality standards. Water quality standards include Regional Water Board Basin Plan beneficial uses and narrative and numeric water quality objectives, State Water Board-adopted standards, and federal standards, including the California Toxics Rule (CTR) and National Toxics Rule (NTR). The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, 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.) With regards to the narrative chemical constituents objective, the Basin Plan 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 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.*"

b. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. Based on information submitted as part of the application, in studies, and as directed by monitoring and reporting programs, the Regional Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality ~~standard~~ criteria/objectives for settleable solids, pH, nitrate, ~~iron, manganese,~~ chlorine residual, temperature, turbidity, total coliform, aluminum, ammonia, bis (2-Chloroethyl) ether, bis (2-ethyhexyl) phthalate, carbon tetrachloride, copper, cyanide, dibromochloromethane, dichlorobromomethane, specific conductance (EC), persistent chlorinated hydrocarbon pesticides, total trihalomethanes, and zinc. Additionally, receiving water concentrations of iron and manganese have exceeded water quality objectives and have been detected in the effluent. Therefore, w~~W~~ater quality-based effluent limitations (WQBELs) for these constituents are included in this Order. A summary of the reasonable potential analysis (RPA) is provided in Table F-6, and a detailed discussion of the RPA for each constituent is provided below.

c. The Regional 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 Board 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.

d. WQBELs were calculated in accordance with section 1.4 of the SIP, as described in Attachment F, Section IV.C.4.

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

e. **Aluminum.** USEPA developed National Recommended Ambient Water Quality Criteria for protection of freshwater aquatic life for aluminum. The recommended four-day average (chronic) and one-hour average (acute) criteria for aluminum are 87 µg/L and 750 µg/L, respectively, for waters with a pH of 6.5 to 9.0. USEPA recommends that the ambient criteria are protective of the aquatic beneficial uses of receiving waters in lieu of site-specific criteria. The receiving stream has been measured to have a low hardness—typically between 52 and 110 mg/L as $CaCO_3$. This condition is supportive of the applicability of the ambient water quality criteria for aluminum, according to USEPA's development document.

The Maximum Effluent Concentration (MEC) for aluminum was 760 µg/L, based on 21 samples collected between 27 March 2001 and 1 May 2006, while the maximum observed upstream receiving water aluminum concentration was 2110 µg/L, based on 11 samples collected between 27 March 2001 and 13 February 2002. Therefore, aluminum in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a level necessary to protect aquatic life resulting in a violation of the Basin Plan's narrative toxicity objective. Since the receiving water exceeds the acute and chronic toxicity criteria, no assimilative capacity for aluminum is available and a dilution credit cannot be allowed. No dilution is allowed due to periods of no flow in the receiving water. This Order contains final Average Monthly Effluent Limitations (AMEL) and Maximum Daily Effluent Limitations (MDEL) for aluminum of 59 µg/L and 161 µg/L, respectively, based on USEPA's National Ambient Water Quality Criteria for the protection of freshwater aquatic life (See Attachment F, Table F-6 for WQBEL calculations).

In USEPA's *Ambient Water Quality Criteria for Aluminum—1988* [EPA 440/5-86-008], USEPA states that "[a]*cid-soluble aluminum…is probably the best measurement at the present…*"; however, USEPA has not yet approved an acid-soluble test method for aluminum. Replacing the ICP/AES portion of the analytical procedure with ICP/MS would allow lower detection limits to be achieved. Based on USEPA's discussion of aluminum analytical methods, this Order allows the use of the alternate aluminum testing protocol described above to meet monitoring requirements.

Based on the sample results in the effluent, it appears that the Discharger may be in immediate non-compliance upon issuance of the permit. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The Basin Plan for the Sacramento and San Joaquin River Basins includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives adopted after 25 September 1995 (See Basin Plan at page IV-16). The water quality-based effluent limitations for aluminum are based on a new interpretation of the narrative standard for protection of receiving water beneficial uses.

Therefore, a compliance schedule for compliance with the aluminum effluent limitations is established in the Order.

An interim performance-based maximum daily effluent limitation of 841 μg/L has been established in this Order. The interim limitation was determined as described in Attachment F, Section IV.E.3., and is in effect through 18 May 2012. As part of the compliance schedule, this Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final aluminum effluent limitations. In addition, the Discharger shall submit an engineering treatment feasibility study and prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3). The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

f. **Ammonia.** 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 does currently use 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 would violate the Basin Plan narrative toxicity objective. Applying 40 CFR section122.44(d)(1)(vi)(B), it is appropriate to use USEPA's Ambient National Water Quality Criteria for the Protection of Freshwater Aquatic Life for ammonia, which was developed to be protective of aquatic organisms.

USEPA's *Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life*, for total ammonia, recommends acute (1-hour average; criteria maximum concentration) standards based on pH and chronic (30-day average, criteria continuous concentration) standards based on pH and temperature. It also recommends a maximum four-day average concentration of 2.5 times the criteria continuous concentration. 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 the Carson Creek has a beneficial use of cold freshwater habitat and the presence of salmonids and early fish life stages in the Cosumnes River, to which Carson Creek, via Deer Creek, is a tributary is well-documented, the recommended criteria for waters where salmonids and early life stages are present were used. USEPA's recommended criteria are show below:

, and

,

where *T* is in degrees Celsius

The maximum permitted effluent pH is 8.5. The Basin Plan objective for pH in the receiving stream is the range of 6.5 to 8.5. In calculating the average monthly effluent limitation the maximum observed 30-day average temperature is typically used. However, the Discharger has historically not discharged to the receiving water during summer months between June and October although there is currently no prohibition to do so. The Discharger may in the future discharge during warmer periods when effluent and receiving water temperatures are higher than seasonal lows observed during winter months. Historically, the maximum observed 30-day average temperature was 66.7ºF (19.3 C) during the month of May 2001. However, historical data has also shown observed 30-day average effluent temperatures rising prior to the Discharger discontinuing discharge to the receiving water during May in previous years. The maximum observed daily effluent temperature was 78.3ºF (25.7 C) on 15 May 2001. Without a prohibition in this Order to discharge to the receiving water during summer months when effluent temperatures are higher and the receiving water exhibits the characteristics of an ephemeral stream, there is reasonable potential that the 30-day average effluent temperature during summer months will meet or exceed the maximum observed daily effluent temperature of 78.3ºF (25.7 C). Therefore, in order to be most protective of the receiving water the maximum observed daily temperature was used instead of the maximum observed 30-day average effluent temperature in calculating the average monthly effluent limitation. The maximum observed 30-day R-1 temperature was 66.6ºF (19.2 C), for the 30-day periods ending 23 May 2003.

Using a pH value of 8.5 and the worst-case temperature values of 78.3 ºF (25.7 C) on a daily basis, the resulting effluent limitation is 0.43 mg/L (as N) for the average monthly effluent limitation. Using a pH value of 8.5, the resulting average one-hour effluent limitation is 0.87 mg/L (as N). (See Attachment F, Table F-7 for WQBEL calculations).

Ammonia was not detected in the upstream receiving water, based on 8 samples collected between 19 July 2001 and 14 February 2002. Thus, the receiving water concentration has not exceeded the criterion; therefore, there is assimilative capacity for ammonia.

Effluent Limitations for ammonia are included in this Order to assure the treatment process adequately nitrifies the waste stream to protect the aquatic habitat beneficial uses.

Based on the sample results in the effluent, it appears that the Discharger may be in immediate non-compliance upon issuance of the permit. New or modified control measures may be necessary in order to comply with the effluent

limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The Basin Plan for the Sacramento and San Joaquin River Basins includes a provision that authorizes the use of compliance schedules in NPDES permits for water quality objectives adopted after September 25, 1995 (See Basin Plan at page IV-16). The water quality-based effluent limitations for ammonia are based on a new interpretation of the narrative standard for protection of receiving water beneficial uses. Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. The previous Order included condition-dependent, "floating" effluent limitations that are reflective of actual conditions at the time of discharge. This Order establishes effluent limitations for ammonia using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions which would be considered a new effluent limit based on a stricter standard to protect beneficial uses for all discharges. Therefore, a compliance schedule for compliance with the ammonia effluent limitation is allowable under provisions of the Basin Plan in this Order.

The final "floating" ammonia limitations in the previous permit were established as ~~An~~ interim ~~performance-based maximum daily effluent~~ limitations in this Order. ~~of 10.6 mg/L has been established in this Order.~~ The interim limitations ~~was determined as described in Attachment F, Section IV.E.3., and is~~are in effect through **18 May 2008**. As part of the compliance schedule, this Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final aluminum effluent limitations. In addition, the Discharger shall submit an engineering treatment feasibility study and prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3). The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

g. **Bis (2-ethylhexyl) phthalate.** The DHS Drinking Water Standards Maximum Contaminant Level (MCL) for bis (2 ethylhexyl) phthalate is 4 µg/l and the USEPA MCL is 6 µg/l. The CTR criterion for human health protection for consumption of water and aquatic organisms is 1.8 µg/l and for consumption of aquatic organisms is 5.9 µg/l.

Bis (2-ethyl-hexyl) phthalate was not detected in the upstream receiving water, based on 4 samples collected between 28 March 2001 and 23 January 2002. Thus, the receiving water concentration has not exceeded the criterion; therefore, there is assimilative capacity for bis (2-ethylhexyl) phthalate. No dilution is allowed due to periods of no flow in the receiving water.

The MEC for bis (2-ethyl-hexyl) phthalate was 2.6 µg/L, based on 15 samples collected between 28 March 2001 and 1 May 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for bis (2-ethylhexyl) phthalate. This Order includes an AMEL and MDEL for bis (2-ethylhexyl) phthalate of 1.8 µg/L and 3.6 µg/L,

respectively, based on the CTR criterion for the protection of human health (See Attachment F, Table F-9 for WQBEL calculations).

The Discharger is unable to comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. The Discharger provided an Infeasibility Report on 1 December 2006. The new water quality-based effluent limitations for bis (2-ethylhexyl) phthalate become effective on **18 May 2010**.

Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.D.1., an interim performance-based maximum daily limitation of 8.09 µg/L was calculated.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final bis (2-ethylhexyl) phthalate effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for bis (2-ethylhexyl) phthalate, the Discharger shall prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3) and submit an engineering treatment feasibility study. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

The Discharger has indicated in their Infeasibility Report that additional time may be required beyond 17 May 2010 to comply with final effluent limits for bis (2-ethylhexyl) phthalate. Based on the Discharger's performance in implementing their corrective action plan and implementation schedule, the implementation of their pollution prevention plan, and submittal of an engineering treatment feasibility study, the Regional Board may consider at a future date issuance of a Time Schedule Order to provide additional time to comply with final effluent limits for bis (2-ethylhexyl) phthalate.

h. **Bis (2-chloroethyl) ether.** The CTR criterion for Human health protection for consumption of water and aquatic organisms is 0.031 µg/l and for consumption of aquatic organisms is 1.4 µg/l. Bis (2-chloroethyl) ether was not detected in the upstream receiving water, based on 4 samples collected between 28 March 2001 and 23 January 2002. The lowest Method Detection Level (MDL) was 0.12 µg/L. Since the MDL is higher than the criterion and all samples were non-detect it is unknown at this time whether there is assimilative capacity for bis (2-chloroethyl) ether in the receiving water. No dilution is allowed due to periods of no flow in the receiving water.

The MEC for bis (2-chloroethyl) ether was 3.2 µg/L, based on 15 samples collected between 28 March 2001 and 1 May 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for bis (2-chloroethyl) ether. However, since the MEC exceeded the CTR criterion this Order includes an AMEL and MDEL for bis (2-chloroethyl) ether of 0.031 µg/L and 0.062 µg/L, respectively, based on the CTR

criterion for the protection of human health (See Attachment F, Table F-10 for WQBEL calculations).

The Discharger is unable to comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. The Discharger provided an Infeasibility Report on 1 December 2006. The new water quality-based effluent limitations for Bis (2-chloroethyl) ether become effective on **18 May 2010**.

Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.D.1., an interim performance-based maximum daily limitation of 9.95 µg/L was calculated.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final bis (2-chloroethyl) ether effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for bis (2-chloroethyl) ether, the Discharger shall prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3) and submit an engineering treatment feasibility study. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

The Discharger has indicated in their Infeasibility Report that additional time may be required beyond 17 May 2010 to comply with final effluent limits for bis (2-chloroethyl) ether. Based on the Discharger's performance in implementing their corrective action plan and implementation schedule, the implementation of their pollution prevention plan, and submittal of an engineering treatment feasibility study, the Regional Board may consider at a future date issuance of a Time Schedule Order to provide additional time to comply with final effluent limits for bis (2-chloroethyl) ether.

i. **Carbon Tetrachloride.** Carbon tetrachloride is a clear heavy organic liquid with a sweet aromatic odor similar to chloroform. Most of it is used to make chlorofluorocarbon propellants and refrigerants, though this has been declining steadily. Other uses have included: as dry cleaning agent and fire extinguisher, in making nylon, as a solvent for rubber cement, soaps, insecticides, etc. The CTR criterion for Human health protection for consumption of water and aquatic organisms is 0.25 µg/l and for consumption of aquatic organisms only is 4.4 µg/l.

Carbon tetrachloride was not detected in the upstream receiving water, based on 4 samples collected between 28 March 2001 and 24 January 2002. Thus, the receiving water concentration has not exceeded the criterion; therefore, there is assimilative capacity for carbon tetrachloride. No dilution is allowed due to periods of no flow in the receiving water.

The MEC for carbon tetrachloride was 0.42 µg/L, based on 23 samples collected between 28 March 2001 and 1 May 2006. Therefore, the discharge has a

reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for carbon tetrachloride. This Order includes an AMEL and MDEL for carbon tetrachloride of 0.25 µg/L and 0.50 µg/L, respectively, based on the CTR criterion for the protection of human health (See Attachment F, Table F-11 for WQBEL calculations).

The Discharger is unable to comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. The Discharger provided an Infeasibility Report on 1 December 2006. The new water quality-based effluent limitations for Carbon tetrachloride become effective on **18 May 2010**.

Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.D.1., an interim performance-based maximum daily limitation of 1.31 µg/L was calculated.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final carbon tetrachloride effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for carbon tetrachloride, the Discharger shall prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3) and submit an engineering treatment feasibility study. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

The Discharger has indicated in their Infeasibility Report that additional time may be required beyond 17 May 2010 to comply with final effluent limits for carbon tetrachloride. Based on the Discharger's performance in implementing their corrective action plan and implementation schedule, the implementation of their pollution prevention plan, and submittal of an engineering treatment feasibility study, the Regional Board may consider at a future date issuance of a Time Schedule Order to provide additional time to comply with final effluent limits for carbon tetrachloride.

j. **Chlorine Residual.** The Discharger uses chlorine for disinfection, which is extremely toxic to aquatic organisms. The Discharger uses a sulfur dioxide process to dechlorinate the effluent prior to discharge to Carson Creek. Due to the existing chlorine use and the potential for chlorine to be discharged, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

The USEPA Technical Support Document for Water Quality-Based Toxics Control [EPA/505/2-90-001] contains statistical methods for converting chronic (four-day) and acute (one-hour) aquatic life criteria to average monthly and maximum daily effluent limitations based on the variability of the existing data and the expected frequency of monitoring. However, because chlorine is an

acutely toxic constituent that can and will be monitored continuously, an average one-hour limitation is considered more appropriate than an average daily limitation. Average one-hour and four-day limitations for chlorine, based on these criteria, are included in this Order.

The Discharger will replace chlorine disinfection with Ultraviolet (UV) disinfection during the term of this permit in order to meet final effluent limits for total trihalomethanes (THMs). Continued use of chlorine disinfection after the installation and initiation of operation of the UV disinfection system will be considered an illegal bypass unless conditions of a permitted bypass specified in Attachment D Section I.G.3 are met.

k. **Copper.** The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for copper. The criteria for copper are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The USEPA default conversion factors for copper in freshwater are 0.96 for both the acute and the chronic criteria. Using the worst-case measured hardness from the effluent and receiving water (52 mg/L as $CaCO_3$) and the USEPA recommended dissolved-to-total translator, the applicable chronic criterion (maximum four-day average concentration) is 5.3 µg/L and the applicable acute criterion (maximum one-hour average concentration) is 7.6 µg/L, as total recoverable.

The maximum observed upstream receiving water total copper concentration was 15.5 µg/L, based on 22 samples collected between 27 March 2001 and 13 December 2005. The receiving water concentration has exceeded the criterion; therefore, there is no assimilative capacity for copper in the receiving water. No dilution is allowed due to periods of no flow in the receiving water.

The MEC for total copper was 19.5 µg/L, based on 34 samples collected between 27 March 2001 and 13 December 2005. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria for copper. An AMEL and MDEL for total copper of 4.62 µg/L and 7.6 µg/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life (See Attachment F, Table F-8 for WQBEL calculations).

The Discharger is unable to comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. The Discharger provided an Infeasibility Report on 1 December 2006. The new water quality-based effluent limitations for copper become effective on **18 May 2010**.

Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.D.1., an interim performance-based maximum daily limitation of 23.88 µg/L, as total recoverable was calculated.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final copper effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for copper, the Discharger shall prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3) and submit an engineering treatment feasibility study. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

The Discharger has indicated in their Infeasibility Report that additional time may be required beyond 17 May 2010 to comply with final effluent limits for copper. Based on the Discharger's performance in implementing their corrective action plan and implementation schedule, the implementation of their pollution prevention plan, and submittal of an engineering treatment feasibility study, the Regional Board may consider at a future date issuance of a Time Schedule Order to provide additional time to comply with final effluent limits for copper.

l. **Cyanide.** The CTR includes maximum 1-hour average and 4-day average cyanide concentrations of 22 µg/L and 5.2 µg/L, respectively, for the protection of freshwater aquatic life.

Cyanide was not detected in the upstream receiving water, based on 4 samples collected between 29 March 2001 and 24 January 2002. Thus, the receiving water concentration has not exceeded the criterion; therefore, there is assimilative capacity for cyanide. No dilution is allowed due to periods of no flow in the receiving water.

The MEC for cyanide was 6.7 µg/L, based on 23 samples collected between 29 March 2001 and 1 May 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for cyanide. This Order includes an AMEL and MDEL for cyanide of 4.26 µg/L and 8.54 µg/L, respectively, based on the CTR criterion for the protection of freshwater aquatic life (See Attachment F, Table F-12 for WQBEL calculations).

The Discharger is unable to comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. The Discharger provided an Infeasibility Report on 1 December 2006. The new water quality-based effluent limitations for cyanide become effective on **18 May 2010**.

Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.D.1., an interim performance-based maximum daily limitation of 20.84 µg/L was calculated.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final cyanide effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As

part of the compliance schedule for cyanide, the Discharger shall prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3) and submit an engineering treatment feasibility study. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

The Discharger has indicated in their Infeasibility Report that additional time may be required beyond 17 May 2010 to comply with final effluent limits for cyanide. Based on the Discharger's performance in implementing their corrective action plan and implementation schedule, the implementation of their pollution prevention plan, and submittal of an engineering treatment feasibility study, the Regional Board may consider at a future date issuance of a Time Schedule Order to provide additional time to comply with final effluent limits for cyanide.

m. **Dibromochloromethane*.*** The CTR includes a dibromochloromethane criterion of 0.41 µg/L for the protection of human health and is based on a one-in-a-million cancer risk for waters from which both water and organisms are consumed.

Dibromochloromethane was not detected in the upstream receiving water, based on 4 samples collected between 28 March 2001 and 24 January 2002. Thus, the receiving water concentration has not exceeded the criterion; therefore, there is assimilative capacity for dibromochloromethane. No dilution is allowed due to periods of no flow in the receiving water.

The MEC for dibromochloromethane was 3.10 µg/L, based on 23 samples collected between 28 March 2001 and 1 May 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for dibromochloromethane. This Order includes an AMEL and MDEL for dibromochloromethane of 0.41 µg/L and 0.80 µg/L, respectively, based on the CTR criterion for the protection of human health (See Attachment F, Table F-13 for WQBEL calculations).

The Discharger is unable to comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. The Discharger provided an Infeasibility Report on 1 December 2006. The new water quality-based effluent limitations for dibromochloromethane become effective on **18 May 2010**.

Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.D.1., an interim performance-based maximum daily limitation of 3.28 µg/L was calculated.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final dibromochloromethane effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for dibromochloromethane, the Discharger shall prepare and implement a pollution

prevention plan that is in compliance with CWC section 13263.3(d)(3) and submit an engineering treatment feasibility study. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

The Discharger has indicated in their Infeasibility Report that additional time may be required beyond 17 May 2010 to comply with final effluent limits for dibromochloromethane. Based on the Discharger's performance in implementing their corrective action plan and implementation schedule, the implementation of their pollution prevention plan, and submittal of an engineering treatment feasibility study, the Regional Board may consider at a future date issuance of a Time Schedule Order to provide additional time to comply with final effluent limits for dibromochloromethane.

n. **Dichlorobromomethane*.*** The CTR includes a dichlorobromomethane criterion of 0.56 µg/L for the protection of human health and is based on a one-in-a-million cancer risk for waters from which both water and organisms are consumed.

Dichlorobromomethane was not detected in the upstream receiving water, based on 4 samples collected between 28 March 2001 and 24 January 2002. Thus, the receiving water concentration has not exceeded the criterion; therefore, there is assimilative capacity for dichlorobromomethane. No dilution is allowed due to periods of no flow in the receiving water.

The MEC for dichlorobromomethane was 18.0 µg/L, based on 23 samples collected between 28 March 2001 and 1 May 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for dichlorobromomethane. This Order includes an AMEL and MDEL for dichlorobromomethane of 0.56 µg/L and 0.93 µg/L, respectively, based on the CTR criterion for the protection of human health (See Attachment F, Table F-14 for WQBEL calculations).

The Discharger is unable to comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. The Discharger provided an Infeasibility Report on 1 December 2006. The new water quality-based effluent limitations for dichlorobromomethane become effective on **18 May 2010**.

Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.D.1., an interim performance-based maximum daily limitation of 23.95 µg/L was calculated.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final dichlorobromomethane effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for dichlorobromomethane, the Discharger shall prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3) and submit

an engineering treatment feasibility study. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

The Discharger has indicated in their Infeasibility Report that additional time may be required beyond 17 May 2010 to comply with final effluent limits for dichlorobromomethane. Based on the Discharger's performance in implementing their corrective action plan and implementation schedule, the implementation of their pollution prevention plan, and submittal of an engineering treatment feasibility study, the Regional Board may consider at a future date issuance of a Time Schedule Order to provide additional time to comply with final effluent limits for dichlorobromomethane.

o. **Electrical Conductivity. (see ~~Subsection jj.~~ Salinity)**

p. **Iron.** The Secondary MCL - Consumer Acceptance Limit for iron is 300 µg/L.

The maximum observed upstream receiving water concentration for iron was 4250 µg/L, based on 4 samples collected between 27 March 2001 and 22 October 2001. The receiving water concentration has exceeded the criterion; therefore, there is no assimilative capacity for iron. Furthermore, no dilution is allowed due to periods of no flow in the receiving water. Iron was detected in the effluent. The MEC for iron was 28.0 µg/L, based on 19 samples collected between 27 March 2001 and 10 November 2005.

The SIP Section 1.3 step 6 states that if the background concentration of a pollutant in the receiving water exceeds the WQO/WQC, and the pollutant is detected in the effluent an effluent limitation will be established to limit further degradation of the receiving water. Therefore, this Order establishes effluent limitations for iron. This Order includes an Average Annual Effluent Limitation (AAEL) for iron of 300 µg/L based on protection of the Basin Plan's narrative chemical constituents objective. Based on the sample results in the effluent, it appears the Discharger can meet this new limitation. Therefore no interim limits are established for iron and the Discharger will comply immediately with effluent limitations for iron upon adoption of this Order.

q. **Manganese.** The Secondary MCL - Consumer Acceptance Limit for manganese is 50 µg/L.

The maximum observed upstream receiving water concentration for manganese was 88.2 µg/L, based on 4 samples collected between 27 March 2001 and 22 October 2001. The receiving water concentration has exceeded the criterion; therefore, there is no assimilative capacity for manganese. Furthermore, no dilution is allowed due to periods of no flow in the receiving water. Under Section 303(d) of the 1972 Clean Water Act, 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 July 25, 2003 USEPA gave final approval to~~In California's ~~2002~~ 2006 Section

303(d) List of Water Quality Limited Segments, Carson Creek is ~~. The listing for the receiving water is~~ listed as a WQLS for manganese ~~in the 303(d) list of impaired water bodies~~.

Furthermore, manganese was detected in the effluent. The MEC for manganese was 40.0 µg/L, based on 19 samples collected between 27 March 2001 and 10 November 2005.

The SIP Section 1.3 step 6 states that if the background concentration of a pollutant in the receiving water exceeds the WQO/WQC, and the pollutant is detected in the effluent an effluent limitation will be established to limit further degradation of the receiving water. Therefore, this Order establishes effluent limitations for manganese. This Order includes an AAEL for manganese of 50 µg/L based on protection of the Basin Plan's narrative chemical constituents objective. Based on the sample results in the effluent, it appears the Discharger can meet this new limitation. Therefore no interim limits are established for manganese and the Discharger will comply immediately with effluent limitations for manganese upon adoption of this Order.

r. **Mercury.** The current USEPA Ambient Water Quality Criteria for Protection of Freshwater Aquatic Life, continuous concentration, for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion (based on a one-in-a-million cancer risk) of 0.050 µg/L for waters from which both water and aquatic organisms are consumed. Both values are controversial and subject to change. In 40 CFR Part 131, USEPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that "…*more stringent mercury limits may be determined and implemented through use of the State's narrative criterion.*" In the CTR, USEPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date. The maximum observed effluent mercury concentration was .0051 µg/L. The receiving water via Deer Creek, Cosumnes River, Mokelumne River discharges to the Delta waterways. The Delta waterways are listed as an impaired water body pursuant to Section 303(d) of the Clean Water Act because of mercury. Mercury bioaccumulates in fish tissue and, therefore, discharge of mercury to the receiving water is likely to contribute to exceedances of the narrative toxicity objective and impacts on beneficial uses. The SIP recommends the Regional Water Board consider whether the mass loading of bioaccumulative pollutants should be limited in the interim to "*representative current levels*" pending development of applicable water quality standards or TMDL allocation. The intent is, at minimum, to prevent further impairment while a TMDL for a particular bioaccumulative constituent is being developed. Any increase in loading of mercury to an already impaired water body would further degrade water quality. Because the Delta waterways has been listed as an impaired water body for mercury, the discharge must not cause or contribute to increased mercury levels. Therefore, This Order also contains an performance-based mass Effluent Limitation of .0039 lbs/month for mercury. ~~for the effluent discharge at 3.0 mgd ADDF flow to the Carson Creek. This Order also contains an interim~~

~~performance-based mass Effluent Limitation of .0052 lbs/month for mercury for the effluent discharge at 4.0 mgd ADDF flow to the Carson Creek upon completion of the WWTP expansion.~~ This limitation is based on maintaining the mercury loading at the current level until a total maximum daily load (TMDL) can be established and USEPA develops mercury standards that are protective of human health. The mass limitation was derived using the maximum observed effluent mercury concentration and the reported average daily effluent design flow rate.

In addition to the numeric mass-based limitation for mercury, this Order requires the discharger to prepare and implement a pollutant prevention plan for mercury in accordance with CWC 13263.3(d)(3). The final effluent limitations (mass load allocations) for mercury in the Facility effluent will come from the TMDL. If the Regional Water Board determines that a mercury offset program is feasible for Dischargers subject to a NPDES permit, this Order may be reopened to reevaluate the mercury mass loading limitation(s) and the need for a mercury offset program.

Compliance time schedules have not been included since the discharge currently meets the concentration based limitation and the mass limitation can be met through implementation measures and/or by limiting new sewer discharges containing mercury concentrations. If USEPA develops new water quality standards for mercury, or a new TMDL allocation is assigned to Carson Creek this permit may be reopened and the Effluent Limitations adjusted.

s. **Nitrite and Nitrate.** 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. Nitrate and nitrite are known to cause adverse health effects in humans. The California DHS has adopted Primary MCLs at Title 22 of the California Code of Regulations (CCR), Table 64431-A, 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. Title 22 CCR, Table 64431-A, also includes a primary MCL of 10,000 µg/L for the sum of nitrate and nitrite, measured as nitrogen.

USEPA has developed a primary MCL and an MCL goal of 1,000 µg/L for nitrite (as nitrogen). For nitrate, USEPA has developed Drinking Water Standards (10,000 µg/L as Primary Maximum Contaminant Level) and Ambient Water Quality Criteria for protection of human health (10,000 µg/L for non-cancer health effects). Recent toxicity studies have indicated a possibility that nitrate is toxic to aquatic organisms.

Inadequate or incomplete denitrification may result in the discharge of nitrate and/or nitrite to the receiving stream. The conversion of ammonia to nitrites and the conversion of nitrites to nitrates present a reasonable potential for the

discharge to cause or contribute to an in-stream excursion above the Primary MCLs for nitrite and nitrate. AMELs for nitrite and nitrate of 1 mg/L and 10 mg/L, respectively, are included in this Order based on the MCLs. These effluent limitations are included in this Order to assure the treatment process adequately nitrifies and denitrifies the waste stream to protect the beneficial use of municipal and domestic supply. The previous Order contained an effluent limitation for nitrate. In accordance with anti-backsliding provisions contained in the Code of Federal Regulations this Order maintains the effluent limitation for nitrate.

t. **Persistent Chlorinated Hydrocarbon Pesticides.** 4,4'-DDT, Aldrin, alpha-BHC, alpha-Endosulfan, beta-BHC, beta-Endosulfan, Chlorodane, Dalapon, delta-BHC, Endrin Aldehyde, Endrin, gamma-BHC, and Heptachlor were detected in the effluent in concentrations as high as 0.047 µg/L, 0.016 µg/L, 0.013 µg/L, 0.053 µg/L, 0.018 µg/L, 0.068 µg/L, 0.0099 µg/L, 7.4 µg/L, 0.049 µg/L, 0.17 µg/L, 0.017 µg/L, 0.067 µg/L, and 0.078 µg/L, respectively. Each of these constituents is a chlorinated hydrocarbon pesticide. The Basin Plan requires that no individual pesticides shall be present in concentrations that adversely affect beneficial uses; discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses; total chlorinated hydrocarbon pesticides shall not be present in the water column at detectable concentrations; and pesticide concentrations shall not exceed those allowable by applicable antidegradation policies. The CTR contains numeric criteria for endrin aldehyde, gamma BHC, chlordane, 4,4'-DDT, alpha BHC, aldrin, beta BHC, and heptachlor of 0.76 µg/L,0.019 µg/L, 0.00043 µg/L, 0.00059 µg/L, 0.0039 µg/L, 0.00013 µg/L, 0.014 µg/L, and 0.00021 µg/L, respectively, for freshwaters from which both water and organisms are consumed. The CTR contains numeric criteria for alpha endosulfan and beta endosulfan of 0.056 µg/L as a four-day average (chronic) and 0.22 µg/L as a one-hour average (acute) for the protection of freshwater aquatic life. The detection of 4,4'-DDT at 0.047 µg/L, Aldrin at 0.016 µg/L, alpha-BHC at 0.013 µg/L, alpha-Endosulfan at 0.053 µg/L, beta-BHC at 0.018 µg/L, beta-Endosulfan at 0.068 µg/L, Chlorodane at 0.0099 µg/L, Dalapon at 7.4 µg/L, delta-BHC at 0.049 µg/L, Endrin Aldehyde at 0.17 µg/L, Endrin at 0.017 µg/L, gamma-BHC at 0.067 µg/L, and Heptachlor at 0.078 µg/L in the effluent presents a reasonable potential to exceed the Basin Plan limitations for chlorinated hydrocarbon pesticides and the CTR criteria for 4,4'-DDT, alpha BHC, aldrin, beta BHC, chlordane, gamma-BHC, and heptachlor. In addition to 4,4'-DDT, Aldrin, alpha-BHC, alpha-Endosulfan, beta-BHC, beta-Endosulfan, Chlorodane, Dalapon, delta-BHC, Endrin Aldehyde, Endrin, gamma-BHC, and Heptachlor; chlorinated hydrocarbon pesticides include 4,4'-DDD, 4,4'-DDE, dieldrin, endosulfan sulfate, heptachlor epoxide, lindane, and toxaphene. Final Effluent Limitations for persistent chlorinated hydrocarbon pesticides are included in this Order and are based on the Basin Plan objective of no detectable concentrations of chlorinated hydrocarbon pesticides. Since the Basin Plan objective is no detectable concentrations, there can be no assimilative capacity. Interim performance based effluent limitations (and interim CTR-based effluent limitations for CTR constituents that demonstrate reasonable potential) are included in this Order. ~~The limitation for chlorinated hydrocarbon pesticides is~~

~~included in this Order based on reasonable potential to cause or contribute to an in-stream excursion of the water quality objective.~~

The Discharger is unable to comply with these final limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with ~~a CTR criterion~~Basin Plan water quality objectives. The Discharger provided an Infeasibility Report on 1 December 2006. The ~~new~~ final water quality-based effluent limitations for 4,4'-DDT, Aldrin, alpha-BHC, alpha-Endosulfan, beta-BHC, beta-Endosulfan, Chlorodane, Dalapon, delta-BHC, Endrin Aldehyde, Endrin, gamma-BHC, and Heptachlor become effective on **18 May 2012**.

Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.D.1., interim performance-based maximum ~~daily~~ limitations were calculated in Table F-18.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final effluent limitations for 4,4'-DDT, Aldrin, alpha-BHC, alpha-Endosulfan, beta-BHC, beta-Endosulfan, Chlorodane, Dalapon, delta-BHC, Endrin Aldehyde, Endrin, gamma-BHC, and Heptachlor. The interim effluent limitations are in effect through **17 May 2012**. As part of the compliance schedule for 4,4'-DDT, Aldrin, alpha-BHC, alpha-Endosulfan, beta-BHC, beta-Endosulfan, Chlorodane, Dalapon, delta-BHC, Endrin Aldehyde, Endrin, gamma-BHC, and Heptachlor, the Discharger shall prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3) and submit an engineering treatment feasibility study. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

u. **Pathogens**. The beneficial uses of the Carson Creek 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 Regional Water Board finds that the wastewater must be disinfected and adequately treated to prevent disease. The principal infectious agents (pathogens) that may be present in raw sewage may be classified into three broad groups: bacteria, parasites, and viruses. Tertiary treatment, consisting of chemical coagulation, sedimentation, and filtration, has been found to remove approximately 99.5% of viruses. Filtration is an effective means of reducing viruses and parasites from the waste stream. The wastewater must be treated to tertiary standards (filtered), or equivalent, to protect contact recreational and food crop irrigation uses.

The California Department of Health Services (DHS) 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 m/ as a 7-day median. As coliform organisms are living and mobile, it is impracticable to quantify an exact number of coliform organisms and to establish weekly average limitations. Instead, coliform organisms are measured as a most probable number and regulated based on a 7-day median limitation.

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 Regional Water Board finds that it is appropriate to apply an equivalent level of treatment to that required by DHS'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. The method of treatment is not prescribed by this Order; however, wastewater must be treated to a level equivalent to that recommended by DHS.

In addition to coliform testing, a turbidity effluent limitation has been included as a second indicator of the effectiveness of the treatment process and to assure compliance with the required level of treatment. The tertiary treatment process, or equivalent, is capable of reliably meeting a turbidity limitation 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 the DHS recommended Title 22 disinfection criteria, weekly average effluent limitations are impracticable for turbidity.

This Order contains effluent limitations and a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. In accordance with CWC section 13241, the Regional Water Board has considered the following:

i. The past, present and probable future beneficial uses of the receiving stream include municipal and domestic supply; agricultural supply, including stock watering; water contact recreation; non-contact water recreation, including aesthetic enjoyment; warm freshwater habitat; cold freshwater habitat; cold freshwater migration of aquatic organisms; cold freshwater spawning,

reproduction, and /or early development; and wildlife habitat.

ii. The environmental characteristics of the hydrographic unit, including the quality of the available water, will be improved by the requirement to provide tertiary treatment for this wastewater discharge. Tertiary treatment will allow for the reuse of the undiluted wastewater for food crop irrigation and contact recreation activities that would otherwise be unsafe according to recommendations from the California Department of Health Services (DHS).

iii. Fishable and swimmable water quality conditions can be reasonably achieved through the coordinated control of all factors that affect water quality in the area.

iv. The economic impact of requiring an increased level of treatment has been considered. The Discharger is currently discharging tertiary treated wastewater under the previous Order. Therefore, there is no estimated increase in treatment costs for this requirement. The loss of beneficial uses within downstream waters, without the tertiary treatment requirement, which includes prohibiting the irrigation of food crops and prohibiting public access for contact recreational purposes, would have a detrimental economic impact. In addition to pathogen removal to protect irrigation and recreation, tertiary treatment may also aid in meeting discharge limitations for other pollutants, such as heavy metals, reducing the need for advanced treatment specific for those pollutants.

v. The requirement to provide tertiary treatment for this discharge will not adversely impact the need for housing in the area. The potential for developing housing in the area will be facilitated by improved water quality, which protects the contact recreation and irrigation uses of the receiving water. DHS recommends that, in order to protect the public health, relatively undiluted wastewater effluent must be treated to a tertiary level for contact recreational and food crop irrigation uses. Without tertiary treatment, the downstream waters could not be safely utilized for contact recreation or the irrigation of food crops.

vi. It is the Regional Water Board's policy, (Basin Plan, page IV-12.00, Policy 2) to encourage the reuse of wastewater. The Regional Water Board requires dischargers to evaluate how reuse or land disposal of wastewater can be optimized. The need to develop and use recycled water is facilitated by providing a tertiary level of wastewater treatment that will allow for a greater variety of uses in accordance with CCR, Title 22.

vii. The Regional Water Board has considered the factors specified in CWC section 13263, including considering the provisions in CWC section 13241, in adopting the disinfection and filtration requirements under Title 22 criteria. The Regional Water Board finds, on balance, that these requirements are

necessary to protect the beneficial uses of Carson Creek, including water contact recreation and irrigation uses.

v. **pH.** 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. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses.*" Effluent Limitations for pH are included in this Order based on the Basin Plan objectives for pH.

w. **Salinity.** The discharge contains total dissolved solids (TDS), chloride, sulfate, and electrical conductivity (EC). These are water quality parameters that are indicative of the salinity of the water. Their presence in water can be growth limiting to certain agricultural crops and can affect the taste of water for human consumption. There are no USEPA water quality criteria for the protection of aquatic organisms for these constituents. The Basin Plan contains a chemical constituent objective that incorporates State MCLs, and a narrative objective.

Table F-4. Salinity Water Quality Criteria/Objectives

Parameter	Agricultural WQ Goal[1]	Secondary MCL[3]	Effluent	
			Avg	Max
EC (µmhos/cm)	~~700~~[2] Varies[2]	900, 1600, 2200	751	940
TDS (mg/L)	~~450~~[2] Varies[2]	500, 1000, 1500	480	590
Sulfate (mg/L)	N/A	250, 500, 600	56	72
Chloride (mg/L)	~~106~~[2] Varies[2]	250, 500, 600	68	84

1 Agricultural water quality goals based on *Water Quality for Agriculture*, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1 (R.S. Ayers and D.W. Westcot, Rome, 1985)

2 ~~Agricultural water quality goals listed provide no restrictions on crop type or irrigation methods for maximum crop yield. Higher concentrations may require special irrigation methods to maintain crop yields or may restrict types of crops grown~~The EC level in irrigation water that harms crop production depends on the crop type, soil type, irrigation methods, rainfall, and other factors. An EC level of 700 umhos/cm is generally considered to present no risk of salinity impacts to crops. However, many corpos are grown successfully with higher salinities.

3 The secondary MCLs are stated as a recommended level, upper level, and a short-term maximum level.

i. **Chloride**. The secondary MCL for chloride is 250 mg/L, as recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. The recommended agricultural water quality goal for chloride is 106 mg/L as a long-term average based on Water Quality for Agriculture, Food and Agriculture Organization of the United Nations—Irrigation and Drainage Paper No. 29, Rev. 1, R.S. Ayers and D.W. Westcot, Rome, 1985 (Ayers and Westcot, 1985 Study). The 106 mg/L water quality goal is intended to protect against adverse effects on sensitive crops when irrigated via sprinklers.

Chloride concentrations in the effluent ranged from 57 mg/L to 84 mg/L, with an average of 67 mg/L, for 13 samples collected by the Discharger from 29 March 2001 through 05/22/2002. Background concentrations in Carson Creek ranged from 15 mg/L to 50 mg/L, with an average of 29 mg/L, for 4 samples collected by the Discharger from 29 March 2001 through 24 January 2002. Both the receiving water and the effluent did not exceed the agricultural water quality goal of 106 mg/L.

ii. **Electrical Conductivity (EC)**. 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. The agricultural water quality goal, that would fully protect the agricultural supply beneficial uses is 700 µmhos/cm as a long-term average based on the Ayers and Westcot, 1985 Study. This Study evaluates the impacts of salinity levels on crop tolerance and yield reduction, and establishes water quality goals that are protective of the agricultural uses. The 700 µmhos/cm agricultural water quality goal is intended to prevent reduction in crop yield for salt-sensitive crops such as beans, carrots, turnips, and strawberries. These crops are either currently grown in the area or may be grown in the future.

A review of the Discharger's monitoring reports from 16 January 2001 through 20 April 2005 shows an average effluent EC level of 751 µmhos/cm, with a range from 510 µmhos/cm to 940 µmhos/cm for 126 samples. These levels exceed the secondary MCL and the agricultural water quality goal. The background receiving water EC level averaged 376 µmhos/cm in 158 sampling events collected by the Discharger from 1 January 2001 through 20 April 2005.

Since the average effluent EC concentration of 751 µmhos/cm exceeds the most stringent agricultural water quality goal applied as a screening value (interpreted as 700 µmhos/cm as a long-term average based on the Ayers and Westcot, 1985 Study), this Order includes a performance-based maximum daily interim effluent limitation of 1041 µmhos/cm (See Section IV.D.1 of this Fact Sheet).

To protect the receiving water from further salinity degradation, an interim performance-based effluent limitation of 1041 µmhos/cm for EC is included in this Order (See Section IV.D.1 of this Fact Sheet). This Order requires the Discharger to conduct site-specific salinity/EC studies to determine the appropriate salinity/EC levels to protect beneficial uses. It is the intent of the Regional Water Board to include final salinity/EC effluent limitations, in a subsequent permit renewal or amendment, based on the results of approved site-specific studies.

iii. **Sulfate.** The secondary MCL for sulfate is 250 mg/L as recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. Sulfate concentrations in the effluent ranged from 33 mg/L to 72 mg/L, with an

average of 56 mg/L, for 13 samples collected by the Discharger from 29 March 2001 through 22 May 2002. Background concentrations in Carson Creek ranged from 17 mg/L to 26 mg/L, with an average of 22 mg/L, for 4 samples collected by the Discharger from 29 March 2001 through 24 January 2002. Both the receiving water and the effluent did not exceed the secondary MCL recommended level of 250 mg/L.

iii. **Total Dissolved Solids (TDS).** 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. The recommended agricultural water quality goal for TDS is 450 mg/L as a long-term average based on the Ayers and Westcot, 1985 Study. The 450 mg/L water quality goal is intended to prevent reduction in crop yield for salt-sensitive crops. Only the most salt sensitive crops require irrigation water of 450 mg/L or less to prevent loss of yield. Most other crops can tolerate higher TDS concentrations without harm.

The average TDS effluent concentration was 480 mg/L and ranged from 390 mg/L to 590 mg/L for 14 samples collected by the Discharger from 28 March 2001 through 22 May 2005. The average concentration exceeds the agricultural goal. The background receiving water TDS concentrations ranged from 140 mg/L to 400 mg/L, with an average of 228 mg/L in 11 sampling events performed by the Discharger from 28 March 2001 through 14 February 2002. These data indicate the receiving water meets the agricultural goal and secondary MCL. Since there is a direct correlation between EC and TDS concentrations the interim EC effluent limitation in this Order will control the TDS effluent concentration. Therefore, a TDS effluent limitation is not included in this Order. Furthermore, the Discharger is required to conduct site-specific studies to determine appropriate site-specific Salinity/EC levels to protect beneficial uses.

x. **Settleable Solids.** 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." This Order contains average monthly and average daily effluent limitations for settleable solids. Because the amount of settleable solids is measured in terms of volume per volume without a mass component, it is impracticable to calculate mass limitations for inclusion in this Order. The previous Order R5-01-135 contained an AMEL and MDEL for settleable solids of 0.1 mL/L and 0.2 mL/L, respectively. This Order maintains the effluent limitations for settleable solids in accordance with anti-backsliding requirements contained in the Code of Federal Regulations. A daily maximum effluent limitation for settleable solids is included in the Order, in lieu of a weekly average, to ensure that the treatment works operate in accordance with design capabilities.

y. **Total Trihalomethanes (THMs).** Information submitted by the Discharger indicates that the effluent contains THMs, including bromoform, dichlorobromomethane, dibromochloromethane, and chloroform. The Basin

Plan contains the narrative "chemical constituent" objective that requires, at a minimum, that waters with a designated MUN use not exceed California MCLs. In addition, the chemical constituent objective prohibits chemical constituents in concentrations that adversely affect beneficial uses. The California primary MCL for total THMs is 100 µg/L. The USEPA primary MCL for total THMs is 80 µg/L, which was effective on 1 January 2002 for surface water systems that serve more than 10,000 people. Pursuant to the Safe Drinking Water Act, DHS must revise the current total THMs MCL in Title 22, CCR to be as low or lower than the USEPA MCL. Total THMs include bromoform, dichlorobromomethane, chloroform, and dibromochloromethane. The Cal/EPA Office of Environmental Health Hazard Assessment (OEHHA) has published the Toxicity Criteria Database, which contains cancer potency factors for chemicals, including chloroform, that have been used as a basis for regulatory actions by the regional boards, departments, and offices within Cal/EPA. This cancer potency factor is equivalent to a chloroform concentration in drinking water of 1.1 µg/L (ppb) at the 1-in-a-million cancer risk level with an average daily consumption of two liters of drinking water over a 70-year lifetime. This risk level is consistent with that used by the DHS to set de minimis risks from involuntary exposure to carcinogens in drinking water in developing MCLs and Action Levels, and by OEHHA to set negligible cancer risks in developing Public Health Goals for drinking water. The one-in-a-million cancer risk level is also mandated by USEPA in applying human health protective criteria contained in the NTR and the CTR to priority toxic pollutants in California surface waters.

MUN is a designated beneficial use of the receiving water. However, there are no known drinking water intakes in Carson Creek for several miles downstream of the discharge, and chloroform is a non-conservative pollutant. Therefore, to protect the MUN use of the receiving waters, the Regional Water Board finds that, in this specific circumstance, application of the USEPA MCL for total THMs for the effluent is appropriate, as long as the receiving water does not exceed the OEHHA cancer potency factor's equivalent receiving water concentration at a reasonable distance from the outfall. Effluent samples collected from 28 March 2001 through 1 May 2006 indicate that THMs were present with a maximum concentration of 136 µg/L and an average concentration of 72 µg/L. Chloroform samples collected over the same period contained a maximum concentration of 120 µg/L and an average concentration of 60 µg/L. Therefore, total THMs in the discharge have a reasonable potential to cause or contribute to an in-stream excursion above the USEPA primary MCL for total THMs. No dilution is allowed due to periods of no flow in the receiving water. An AMEL of 80 µg/L for total THMs is included in this Order based on protection of the Basin Plan's narrative chemical constituents objective.

The Discharger is unable to comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. The Discharger provided an Infeasibility Report

on 1 December 2006. The new water quality-based effluent limitations for THMs become effective on **18 May 2010**.

Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.D.1., an interim performance-based maximum daily limitation of 178 µg/L was calculated.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final THMs effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for THMs , the Discharger shall prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3) and submit an engineering treatment feasibility study. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

The Discharger has indicated in their Infeasibility Report that additional time may be required beyond 17 May 2010 to comply with final effluent limits for THMs. Based on the Discharger's performance in implementing their corrective action plan and implementation schedule, the implementation of their pollution prevention plan, and submittal of an engineering treatment feasibility study, the Regional Board may consider at a future date issuance of a Time Schedule Order to provide additional time to comply with final effluent limits for THMs.

z. **Toxicity.** See Section IV.C.5. of the Fact Sheet regarding whole effluent toxicity.

aa. **Turbidity. (see Subsection u. Pathogens)**

bb. **Zinc***.* The CTR includes hardness-dependent criteria for the protection of freshwater aquatic life for zinc. The criteria for zinc are presented in dissolved concentrations. USEPA recommends conversion factors to translate dissolved concentrations to total concentrations. The conversion factors for zinc in freshwater are 0.978 for the acute criteria and 0.986 for the chronic criteria. Using the worst-case ambient (lowest upstream receiving water) measured hardness from the effluent and receiving water, (52 mg/L), the applicable chronic criterion (maximum four-day average concentration) and the applicable acute criterion (maximum one-hour average concentration) are both 69 µg/L, as total recoverable.

The maximum observed upstream receiving water total zinc concentration was 16.9 µg/L, based on 4 samples collected between 27 March 2001 and 22 October 2001. The receiving water concentration has not exceeded the criterion; therefore, there is assimilative capacity for zinc in the receiving water. No dilution is allowed due to periods of no flow in the receiving water.

The MEC for total zinc was 330 µg/L, based on 23 samples collected between 27 March 2001 and 1 May 2006. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criteria

for zinc. An AMEL and MDEL for total zinc of 23.9 µg/L and 69.0 µg/L, respectively, are included in this Order based on CTR criteria for the protection of freshwater aquatic life (See Attachment F, Table F-15 for WQBEL calculations).

The Discharger is unable to comply with these limitations. Section 2.1 of the SIP allows for compliance schedules within the permit for existing discharges where it is demonstrated that it is infeasible for a Discharger to achieve immediate compliance with a CTR criterion. The Discharger provided an Infeasibility Report on 1 December 2006. The new water quality-based effluent limitations for zinc become effective on **18 May 2010**.

Using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.D.1., an interim performance-based maximum daily limitation of 330 µg/L, as total recoverable was calculated.

This Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final zinc effluent limitations. The interim effluent limitations are in effect through **17 May 2010**. As part of the compliance schedule for zinc, the Discharger shall prepare and implement a pollution prevention plan that is in compliance with CWC section 13263.3(d)(3) and submit an engineering treatment feasibility study. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

The Discharger has indicated in their Infeasibility Report that additional time may be required beyond 17 May 2010 to comply with final effluent limits for Zinc. Based on the Discharger's performance in implementing their corrective action plan and implementation schedule, the implementation of their pollution prevention plan, and submittal of an engineering treatment feasibility study, the Regional Board may consider at a future date issuance of a Time Schedule Order to provide additional time to comply with final effluent limits for Zinc.

Table F-5a. Statistics for Effluent Constituents with Detectable Results[1, 2]

Constituent	MEC	Mean[3]	Std. Dev.	CV	Total # of Samples	# of Non-Detects in Samples
1,3 Dichlorobenzene	0.071	0.527	N/A	0.6	27	26
1,4 Dichlorobenzene	0.069	0.525	0.408	0.6	27	24
2,4-Dichlorophenol	0.52	0.781	0.390	0.6	15	13
2-Chlorophenol	0.061	0.757	N/A	0.6	15	14
2-Nitrophenol	0.1	3.693	N/A	0.6	15	14
3-Methyl-4-Chlorophenol	0.047	1.846	N/A	0.6	15	14
4,4'-DDT	0.047	0.009	N/A	0.6	15	14
4-Nitrophenol	0.49	3.749	N/A	0.6	15	14
Aldrin	0.016	0.004	N/A	0.6	15	14
alpha-BHC	0.013	0.006	0.002	0.6	15	13
alpha-Endosulfan	0.053	0.012	0.012	0.6	15	12
Aluminum, Total Recoverable	760	168	204	1.224	21	2
Ammonia as N (mg/L)	3.4	0.607	N/A	0.6	27	26
Antimony, Total Recoverable	2.1	1.281	1.114	0.87	23	9
Arsenic, Total Recoverable	1.9	0.697	0.444	0.636	23	5
Barium, Total Recoverable	6.5	4.926	10.979	2.229	19	1
Beryllium, Total Recoverable	0.62	0.244	0.258	0.6	23	19
beta endosulfan	0.068	0.009	0.016	0.6	15	13
beta-BHC	0.018	0.004	N/A	0.6	15	14
Bis(2-Chloroethyl)Ether	3.2	0.68	N/A	0.6	15	14
Bis(2-Chloroisopropyl)Ether	0.071	3.691	N/A	0.6	15	14
Bis(2-Ethylhexyl)Phthalate	2.600	2.107	N/A	0.6	15	14
Cadmium, Total Recoverable	0.121	0.093	0.034	0.371	23	8
Carbon Tetrachloride	0.42	0.257	N/A	0.6	23	22
Chlordane	0.01	0.038	N/A	0.6	15	14
Chloride (mg/L)	84.0	67.5	10.0	0.147	13	-
Chloroethane	0.35	0.68	0.38	0.6	23	21
Chloroform	120	60	29	0.475	23	-
Chromium (III), Total Recoverable	0.91	0.46	0.32	0.688	23	7
Copper, Total Recoverable	19.5	10.6	4.036	0.382	34	-
Cyanide	6.7	2.7	0.875	0.6	23	21
Dalapon	7.4	7.4	N/A	0.6	13	12
delta-BHC	0.049	0.006	0.012	0.6	15	13
Dibromochloromethane	3.10	1.15	0.64	0.558	23	2
Dichlorobromomethane	18.000	10.439	4.094	0.392	23	-

Constituent	MEC	Mean[3]	Std. Dev.	CV	Total # of Samples	# of Non-Detects in Samples
Diethyl phthalate	0.440	0.800	0.349	0.6	15	13
Dimethyl phthalate	0.066	0.749	0.432	0.6	15	13
Di-n-Butyl Phthalate	0.740	3.756	N/A	0.6	15	14
Endrin	0.017	0.006	N/A	0.6	15	14
Endrin Aldehyde	0.170	0.017	0.042	0.6	15	13
Ethylbenzene	0.650	0.663	0.405	0.6	23	20
Fluoride (mg/L)	0.200	0.073	0.043	0.586	13	5
gamma-BHC	0.067	0.013	0.015	0.6	15	12
Hardness (mg/L as CaCO3)	110	71	10	0.141	56	-
Heptachlor	0.078	0.013	0.022	0.6	15	12
Iron, Total Recoverable	28.0	18.7	17.9	0.957	19	6
Isophorone	0.120	0.425	N/A	0.6	15	14
Lead, Total Recoverable	0.640	0.165	0.142	0.861	23	10
Manganese, Total Recoverable	40.0	6.5	8.8	1.354	19	3
MBAS	0.390	0.233	0.094	0.405	12	-
Mercury, Total Recoverable	0.005	0.002	0.001	0.555	22	1
Methyl Bromide	3.700	0.850	0.788	0.6	23	19
Methyl tert-Butyl Ether (MTBE)	2.500	1.976	N/A	0.6	21	20
Methylene Chloride	0.210	0.665	0.391	0.6	23	20
Nickel, Total Recoverable	9.433	3.458	2.132	0.617	23	1
Nitrite (mg/L)	0.950	0.275	0.207	0.755	13	10
Nitrobenzene	0.300	3.737	N/A	0.6	15	14
Phenanthrene	0.020	0.085	N/A	0.6	15	14
Phenol	0.490	0.429	N/A	0.6	15	14
Phosphorus, Total (mg/L)	3.000	2.002	0.672	0.336	13	-
Selenium, Total Recoverable	3.700	1.431	1.289	0.901	23	8
Silver, Total Recoverable	0.008	0.206	0.248	1.201	27	21
Sulfate, as SO4 (mg/L)	72.0	55.8	16.0	0.287	13	-
Sulfide (mg/L)	6.60	1.83	2.17	1.186	12	7
Sulfite (mg/L)	15.0	6.7	4.0	0.597	12	1
TDS (mg/L)	590	480	57	0.120	14	-
Thallium, Total Recoverable	0.130	0.226	0.247	1.095	23	12
Toluene	0.920	0.633	0.405	0.640	23	16
Tributyltin	0.018	0.004	0.005	1.330	12	8
Zinc, Total Recoverable	330	42	63	1.5	23	-

1 Effluent data from 2001 – 2006.
2 Unless otherwise stated, all constituent concentrations in µg/L.
3 Mean value calculated using one half detection level value is used for non-detects. Thus mean can exceed MEC value in certain instances.

Table F-5b. Statistics for Receiving Water Constituents with Detectable Results[1, 2]

Constituent	B	Total # of Samples	# of Non-Detects in Samples
3-Methyl 4-Chlorophenol	0.030	4	3
4-Nitrophenol	0.140	4	3
Aldrin	0.040	4	3
Aluminum, Total Recoverable	2,110	11	1
Antimony, Total Recoverable	0.043	4	-
Arsenic, Total Recoverable	0.629	4	-
Barium	14.40	4	-
Beryllium, Total Recoverable	0.018	4	3
Cadmium, Total Recoverable	0.014	4	3
Chloride (mg/L)	50.00	4	-
Chromium (III), Total Recoverable	2.676	4	2
Copper, Total Recoverable	15.470	22	-
Dimethyl Phthalate	0.030	4	3
Di-n-Butyl Phthalate	0.930	4	3
Fluoride (mg/L)	0.09	4	-
Hardness (mg/L as CaCO3)	180	11	-
Heptachlor Epoxide	0.002	4	3
Iron, Total Recoverable	4,250	4	-
Lead, Total Recoverable	0.273	4	2
Manganese, Total Recoverable	88.20	4	-
Mercury, Total Recoverable	0.008	5	-
Methylmercury	0.000598	12	-
Nickel, Total Recoverable	2.721	4	-
Nitrate (mg/L)	1.50	4	-
Nitrobenzene	0.220	4	3
Phosphorus	0.140	4	3
Selenium, Total Recoverable	0.252	4	3
Silver, Total Recoverable	0.016	4	3
Sulfate (mg/L)	26.00	4	-
Sulfite (mg/L)	0.25	9	8
TDS (mg/L)	400	11	-
Thallium, Total Recoverable	0.007	4	2

Tributyltin	0.0030	5	4
Constituent	B	Total # of Samples	# of Non-Detects in Samples
Zinc, Total Recoverable	16.877	4	1

1 Upstream receiving water data from 2001 – 2005.
2 Unless otherwise stated, all constituent concentrations in µg/L.

4. WQBEL Calculations

a. Effluent limitations for aluminum, ammonia, copper, bis (2-Chloroethyl) ether, bis (2-ethylhexyl) phthalate, carbon tetrachloride, cyanide, dibromochloromethane, dichlorobromomethane, and zinc were calculated in accordance with section 1.4 of the SIP. The following paragraphs describe the methodology used for calculating effluent limitations.

b. **Effluent Limitation Calculations.** In calculating maximum effluent limitations, the effluent concentration allowances (ECA) is calculated as follows~~were set equal to the criteria/standards/objectives~~.

$$ECA_{chronic} = CCC + D(ccc - B)$$

For the human health, agriculture, or other long-term criterion/objective, ~~a dilution credit can be applied. T~~the ECA is calculated as follows:

$ECA_{HH} = HH + D(HH - B)$

where:

ECA_{acute} = effluent concentration allowance for acute (one-hour average) toxicity criterion

$ECA_{chronic}$ = effluent concentration allowance for chronic (four-day average) toxicity criterion

ECA_{HH} = effluent concentration allowance for human health, agriculture, or other long-term criterion/objective

CMC = criteria maximum concentration (one-hour average)

CCC = criteria continuous concentration (four-day average, unless otherwise noted)

HH = human health, agriculture, or other long-term criterion/objective

D = dilution credit

B = maximum receiving water concentration

Acute and chronic toxicity ECAs were then converted to equivalent long-term averages (LTA) using statistical multipliers and the lowest is used. Additional statistical multipliers were then used to calculate the maximum daily effluent limitation (MDEL) and the average monthly effluent limitation (AMEL).

Human health ECAs are set equal to the AMEL and a statistical multiplier is used to calculate the MDEL.

LTA_{acute}

$LTA_{chronic}$

where: $mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL

$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL

M_A = statistical multiplier converting CMC to LTA

M_C = statistical multiplier converting CCC to LTA

Carson Creek, the~~-~~ receiving water ~~was~~ has been determined to be an ephemeral stream. Therefore, no dilution credit is allowed (D=0). Therefore, ~~ECA_{HH}~~ ECA_{acute} = CMC, $ECA_{chronic=CCC}$, and $ECA_{HH=}$HH for all calculations. ~~regarding human health, agriculture, or other long-term criterion/objective.~~

Water quality-based effluent limitations were calculated for aluminum, ammonia, copper, bis (2-Chloroethyl) ether, bis (2-ethylhexyl) phthalate, carbon tetrachloride, cyanide, dibromochloromethane, dichlorobromomethane, and zinc, as follows in Tables F-6 through F-15, below.

Table F-6. WQBEL Calculations for Aluminium

	Acute	Chronic
Criteria (µg/L) [1]	750	87
Dilution Credit	No Dilution	No Dilution
ECA	750	87
ECA Multiplier	0.171	0.316
LTA	128.3	27.5
AMEL Multiplier (95th%)	(2)	2.15
AMEL (µg/L)	(2)	**59**
MDEL Multiplier (99th%)	(2)	5.85
MDEL (µg/L)	(2)	**161**

(1) USEPA Ambient Water Quality Criteria
(2) Limitations based on chronic LTA (Chronic LTA < Acute LTA)

Table F-7. WQBEL Calculations for Ammonia

	~~Acute~~	~~Chronic~~
~~pH [1]~~	~~8.5~~	~~8.5~~
~~Temperature °C [2]~~	~~N/A~~	~~25.7~~
~~Criteria (mg/L) [3]~~	~~2.14~~	~~.529~~
~~Dilution Credit~~	~~No Dilution~~	~~No Dilution~~
~~ECA~~	~~2.14~~	~~.529~~
~~ECA Multiplier~~	~~.321~~	~~.527~~
~~LTA [4]~~	~~.687~~	~~.279~~
~~AMEL Multiplier (95th%)~~	~~[5]~~	~~1.552~~
~~**AMEL** (mg/L)~~	~~[5]~~	~~**0.433**~~
~~MDEL Multiplier (99th%)~~	~~[5]~~	~~3.114~~
~~**MDEL** (mg/L)~~	~~[5]~~	~~**0.869**~~

(1) Acute design pH = 8.5 (max. allowed effluent pH), Chronic design pH = 8.5 (max. allowed effluent pH) for ephemeral stream
(2) Temperature = maximum observed daily effluent temperature of 25.7 C. See Section IV.C.3.f for rationale for using maximum observed daily effluent temperature as opposed to maximum 30-day average temperature.
(3) USEPA Ambient Water Quality Criteria; Basis of Chronic criteria is 4-day exposure. 4-day chronic criteria equals 30-day criteria times 2.5; (30-day criteria of 0.529)x(2.5)=1.32
(4) LTA developed based on Acute and Chronic ECA Multipliers calculated at 99th percentile level per sections 5.4.1 and 5.5.4 of TSD.
(5) Limitations based on chronic LTA ($LTA_{chronic}$ < LTA_{acute})

Table F-7. WQBEL Calculations for Ammonia

	June – October		November – May	
	Acute	Chronic	Acute	Chronic
pH	8.5	8.5	8.5	8.5
Temperature	N/A	25.7	N/A	19.3
Criteria (mg/L)	2.14	~~0.529~~1.32	2.14	2.00
Dilution Credit	0	0	0	0
ECA	2.14	~~0.529~~1.32	2.14	2.00
ECA Multiplier	0.321	0.527	0.321	0.527
LTA	0.687	0.696	0.687	1.05
AMEL Multiplier (95%)	1.552		1.552	
AMEL	**1.07**		**1.07**	

LTA	0.687		0.687	
MDEL Multiplier (99%)	3.114		3.114	
MDEL	**2.14**		**2.14**	

Table F-8. WQBEL Calculations for Copper

	Acute	Chronic
Criteria, dissolved (µg/L) [1]	7.3	5.1
Dilution Credit	No Dilution	No Dilution
Translator [2]	0.96	0.96
ECA, total recoverable [3]	7.6	5.3
ECA Multiplier [4]	0.453	0.655
LTA	3.44	3.47
AMEL Multiplier (95th%) [5][6]	1.34	[8]
AMEL (µg/L)	**4.62**	[8]
MDEL Multiplier (99th%) [7]	2.21	[8]
MDEL (µg/L)	**7.60**	[8]

(1) CTR aquatic life criteria, based on a hardness of 52 mg/L as $CaCO_3$.
(2) EPA Translator used as default.
(3) ECA calculated per section 1.4.B, Step 2 of SIP. This allows for the consideration of dilution.
(4) Acute and Chronic ECA Multiplier calculated at 99th percentile per section 1.4.B, Step 3 of SIP or per sections 5.4.1 and 5.5.4 of the TSD.
(5) Assumes sampling frequency n=>4.
(6) The probability basis for AMEL is 95th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
(7) The probability basis for MDEL is 99th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
(8) Limitations based on acute LTA (Acute LTA < Chronic LTA)

Table F-9. WQBEL Calculations for Bis (2-Ethylhexyl) Phthalate

	Acute	Chronic
Criteria (mg/L)	N/A	1.8
Dilution Credit	N/A	No Dilution
ECA	N/A	1.8
AMEL (mg/L) [1]	N/A	**1.8**
MDEL/AMEL Multiplier[2]	N/A	2.01
MDEL (mg/L)	N/A	**3.6**

(1) AMEL = ECA per section 1.4.B, Step 6 of SIP
(2) Assumes sampling frequency n<=4. Uses MDEL/AMEL multiplier from Table 2 of SIP.

Table F-10. WQBEL Calculations for Bis (2-Chloroethyl) ether

	Acute	Chronic
Criteria (mg/L)	N/A	0.031
Dilution Credit	N/A	No Dilution
ECA	N/A	0.031
AMEL (mg/L) [1]	N/A	**0.031**
MDEL/AMEL Multiplier[2]	N/A	2.01
MDEL (mg/L)	N/A	**0.062**

(1) AMEL = ECA per section 1.4.B, Step 6 of SIP
(2) Assumes sampling frequency n<=4. Uses MDEL/AMEL multiplier from Table 2 of SIP.

Table F-11. WQBEL Calculations for Carbon Tetrachloride

	Acute	Chronic
Criteria (mg/L)	N/A	0.25
Dilution Credit	N/A	No Dilution
ECA	N/A	0.25
AMEL (mg/L) (1)	N/A	**0.25**
MDEL/AMEL Multiplier(2)	N/A	2.01
MDEL (mg/L)	N/A	**0.50**

(1) AMEL = ECA per section 1.4.B, Step 6 of SIP
(2) Assumes sampling frequency n<=4. Uses MDEL/AMEL multiplier from Table 2 of SIP.

Table F-12. WQBEL Calculations for Cyanide

	Acute	Chronic
Criteria (µg/L) (1)	22	5.2
Dilution Credit	No Dilution	No Dilution
ECA	22	5.2
ECA Multiplier	0.321	0.527
LTA	7.06	2.74
AMEL Multiplier (95th%)	(2)	1.55
AMEL (µg/L)	(2)	**4.26**
MDEL Multiplier (99th%)	(2)	3.11
MDEL (µg/L)	(2)	**8.54**

(1) USEPA Ambient Water Quality Criteria
(2) Limitations based on chronic LTA (Chronic LTA < Acute LTA)

Table F-13. WQBEL Calculations for Dibrochloromomethane

	Acute	Chronic
Criteria (µg/L)	N/A	0.41
Dilution Credit	N/A	No Dilution
ECA	N/A	0.41
AMEL (µg/L) (1)	N/A	**0.41**
MDEL/AMEL Multiplier(2)	N/A	1.95
MDEL (µg/L)	N/A	**0.80**

(1) AMEL = ECA per section 1.4.B, Step 6 of SIP
(2) Assumes sampling frequency n<=4. Uses MDEL/AMEL multiplier from Table 2 of SIP.

Table F-14. WQBEL Calculations for Dichlorobromomethane

	Acute	Chronic
Criteria (mg/L)	N/A	0.56
Dilution Credit	N/A	No Dilution
ECA	N/A	0.56
AMEL (mg/L) [1]	N/A	**0.56**
MDEL/AMEL Multiplier[2]	N/A	1.66
MDEL (mg/L)	N/A	**0.93**

(1) AMEL = ECA per section 1.4.B, Step 6 of SIP
(2) Assumes sampling frequency n<=4. Uses MDEL/AMEL multiplier from Table 2 of SIP.

Table F-15. WQBEL Calculations for Zinc

	Acute	Chronic
Criteria, dissolved (µg/L) [1]	67.5	68
Dilution Credit	No Dilution	No Dilution
Translator [2]	0.978	0.986
ECA, total recoverable [3]	69	69
ECA Multiplier [4]	0.144	0.264
LTA	9.95	18.23
AMEL Multiplier (95th%) [5][6]	2.40	[8]
AMEL (µg/L)	**23.9**	[8]
MDEL Multiplier (99th%) [7]	6.93	[8]
MDEL (µg/L)	**69.0**	[8]

(1) CTR aquatic life criteria, based on a hardness of 52 mg/L as $CaCO_3$.
(2) EPA Translator used as default.
(3) ECA calculated per section 1.4.B, Step 2 of SIP. This allows for the consideration of dilution.
(4) Acute and Chronic ECA Multiplier calculated at 99th percentile per section 1.4.B, Step 3 of SIP or per sections 5.4.1 and 5.5.4 of the TSD.
(5) Assumes sampling frequency n=>4.
(6) The probability basis for AMEL is 95th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
(7) The probability basis for MDEL is 99th percentile per section 1.4.B, Step 5 of SIP or section 5.5.4 of the TSD.
(8) Limitations based on acute LTA (Acute LTA < Chronic LTA)

Summary of Water Quality-based Effluent Limitations Discharge Point EFF-001

Table F-16. Summary of Water Quality-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Bis (2-Chloroethyl) ether	µg/L	0.031	---	0.062	---	---
Bis (2-ethylhexyl) phthalate	µg/L	1.8	---	3.6	---	---
Carbon Tetrachloride	µg/L	0.25	---	0.50	---	---
Cyanide	µg/L	4.26	---	8.54	---	---
Dibromochloromethane	µg/L	0.41	---	0.80	---	---
Dichlorobromomethane	µg/L	0.56	---	0.93	---	---

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Zinc, Total Recoverable	µg/L	23.9	---	69.0	---	---
Mass Based Effluent limits @ 3.0 mgd AD~~D~~WF						
Aluminum, Total Recoverable	µg/L	59	---	161	---	---
	lbs/day	1.48	---	4.03	---	---
Ammonia (as Nitrogen)	mg/L	0.43	---	See IV.A.1.f	---	---
	lbs/day	10.8	---	21.8	---	---
Copper, Total Recoverable	µg/L	4.62	---	7.6	---	---
	lbs/day	0.12	---	0.19	---	---
Mass Based Effluent limits @ 4.0 mgd AD~~D~~WF						
Aluminum, Total Recoverable	µg/L	59	---	161	---	---
	lbs/day	1.97	---	5.37	---	---
Ammonia (as Nitrogen)	mg/L	0.43	---	See IV.A.1.f	---	---
	lbs/day	14.4	---	29.0	---	---
Copper, Total Recoverable	µg/L	4.62	---	7.6	---	---
	lbs/day	0.154	---	0.255	---	---

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 III-8.00) The Basin Plan also states that, "…*effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate*…". 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."*

Accordingly, 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 bioassays ----------	70%
Median for any three or more 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 III-8.00) Adequate WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan’s narrative toxicity objective. Three species chronic toxicity monitoring results in the previous permit indicated that the receiving water used in the dilution series in many instances was toxic to *Pimephales promelas*, and *Ceriodaphnia dubia*. Furthermore, no dilution credit is allowed for the receiving water since it has been determined to be an ephemeral stream. The previous Order required monitoring four times per year using a dilution series that is not applicable to the discharge. The dilution series for the three species chronic toxicity monitoring has been modified to reflect the results from the previous Order. The dilution series specified in Attachment E will replace the dilution series specified in the previous Order. The dilution series will consist of 100% effluent, 100% receiving water, and 100% lab control water. The previous Order required testing four times per year for chronic toxicity (4 times per year). However, since the Discharger typically discharges six months out of the year between November and April (6 months) monthly testing will produce seven sets of data in a six-month period. The requirement of monthly monitoring instead of previously required four times per year will not cause additional cost to the Discharger but is estimated to save the Discharger testing costs due to a reduced number of tests per species. Therefore, no additional burden is placed on the Discharger by requiring monthly testing. Attachment E of this Order requires monthly chronic WET monitoring for demonstration of compliance with the narrative toxicity objective.

In addition to WET monitoring, Special Provisions VI.C.2.a. requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity is demonstrated.

D. Final Effluent Limitations

1. Mass-based Effluent Limitations.

Title 40 CFR 122.45(f)(1) requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g. CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations were calculated based upon the permitted average ~~daily discharge~~dry weather flow allowed in Section IV.A.1.h. of the Limitations and Discharge Requirements.

2. Averaging Periods for Effluent Limitations.

Title 40 CFR 122.45 (d) requires average weekly and average monthly discharge limitations for publicly owned treatment works (POTWs) unless impracticable. However, for toxic pollutants and pollutant parameters in water quality permitting, the US EPA recommends the use of a maximum daily effluent limitation 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 utilizes maximum daily effluent limitations in lieu of average weekly effluent limitations for ammonia, aluminum, chlorine residual[2], copper, ~~manganese,~~ zinc, cyanide, carbon tetrachloride, bis (2-chloroethyl) ether, bis (2-ethylhexyl) phthalate, dichlorobromomethane, and dibromochloromethane 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, TSS, pH, coliform, and turbidity, 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 Attachment F, Section IV.C.3., above.

[2] This Order applies the USEPA National Ambient Water Quality Criteria for chlorine directly as effluent limitations (1 hour average, acute, and 4-day average, chronic). See Section IV.C.3., above, for rational regarding the chlorine residual effluent limitations.

3. Satisfaction of Anti-Backsliding Requirements.

All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

4. Satisfaction of Antidegradation Policy

This Order provides for an increase in the volume and mass of pollutants discharged and is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16 as updated by State Water Board Administrative Procedure Update (APU) No. 90-004. The following is a summary of the Antidegradation Analysis Report (AAR) submitted by the Discharger to evaluate the proposed increase in discharge from 3.0 mgd to 4.0 mgd:

a. **Water quality parameters and beneficial uses which will be affected by this Order and the extent of the impact.** This Order does not impact beneficial uses of the receiving water or downstream receiving waters. All beneficial uses will be maintained and protected. This Order provides for an increase in the volume and mass of pollutants discharged to the receiving water. Code of Federal Regulations 40 CFR 131.12 defines the following tier designations to describe water quality in the receiving water body.

Tier 1 Designation: *Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected*. (40 CFR 131.12)

Tier 2 Designation: *Where the quality of waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.* (40 CFR 131.12)

The tier designation is assigned on a pollutant-by-pollutant basis. The following is the potential effect on water quality parameters regulated in this Order, as assessed in the AAR, for an increased discharge from 3.0 mgd to 4.0 mgd:

RW Pollutants	Current Discharge of 3.0 mgd		Increased Discharge of 4.0 mgd
	Existing Condition	Finding	Effect of this Order

Aldrin	WQS exceeded upstream	Tier 1	No effect-already Tier 1
Aluminum	RW exceeds WQS, 303(d)	Tier 1	No effect-already Tier 1
Copper	WQS exceeded upstream	Tier 1	No effect-already Tier 1
Iron	WQS exceeded upstream	Tier 1	No effect-already Tier 1
Manganese	RW exceeds WQS, 303(d)	Tier 1	No effect-already Tier 1
Effluent Pollutants	**Current Discharge of 3.0 mgd**		**Increased Discharge of 4.0 mgd**
	Existing Condition	**Finding**	**Effect of this Order**
Ammonia	Assimilative capacity	Tier 2	Less than significant – remains Tier 2
Bis(2-chloroethyl) ether	No assimilative capacity	Tier 1	Implementation of effluent limits – remains Tier 1
Bis(2-ethylhexyl) phthalate	Assimilative capacity	Tier 2	Significance threshold exceeded – remains Tier 2
Carbon Tetrachloride	Assimilative capacity	Tier 2	Significance threshold exceeded – remains Tier 2
Cyanide	Assimilative capacity	Tier 2	Less than significant – remains Tier 2
Dibromochloromethane	No assimilative capacity	Tier 1	Conversion to UV provides for assimilative capacity – change to Tier 2
Dichlorobromomethane	No assimilative capacity	Tier 1	Conversion to UV provides for assimilative capacity – change to Tier 2
Dissolved Oxygen	Assimilative capacity	Tier 2	Further study needed – expected to remain Tier 2
Electrical Conductivity (a measure of TDS)	Assimilative capacity	Tier 2	Conversion to UV will reduce effluent EC – remains Tier 2
Mercury	No assimilative capacity	Tier 1	Implementation of effluent limits and insignificant mass increase – remains Tier 1

Persistent Chlorinated Hydrocarbon Pesticides	No assimilative capacity	Tier 1	Implementation of effluent limits – remains Tier 1
pH	Assimilative capacity	Tier 2	Negligible effect – remains Tier 2
Temperature	Assimilative capacity	Tier 2	Further study needed – Expected to remain Tier 2
Total Trihalomethanes (TTHM)	No assimilative capacity	Tier 1	Conversion to UV provides for assimilative capacity – Change to Tier 2
Turbidity	Assimilative capacity	Tier 2	Negligible effect – remains Tier 2
Zinc	No assimilative capacity	Tier 1	Implementation of effluent limits – remains Tier 1

~~**Tier 1 Pollutants** **Affect of this Order**~~
~~Aldrin ..... No affect-already Tier 1~~
~~Aluminum ..... No affect-already Tier 1~~
~~Copper..... No affect-already Tier 1~~
~~Iron ..... No affect-already Tier 1~~
~~Manganese..... No affect-already Tier 1~~
~~Ammonia ..... No affect-already Tier 1~~

~~**Tier 2 Pollutants** **Affect of this Order**~~
~~Bis(2-chloroethyl) ether ..... Changes designation to Tier 1~~
~~Bis(2-ethylhexyl)phthalate ..... Changes designation to Tier 1~~
~~Carbon Tetrachloride..... Changes designation to Tier 1~~
~~Cyanide ..... Changes designation to Tier 1~~
~~Dibromochloromethane ..... Changes designation to Tier 1~~
~~Dichlorobromomethane ..... Changes designation to Tier 1~~
~~Dissolved Oxygen (DO)..... Further assessment required~~
~~Electrical Conductivity (a measure of TDS) . Changes designation to Tier 1~~
~~Mercury ..... Remains Tier 2 designation~~
~~Persistent Chlorinated Hydrocarbon Pesticides ..... Changes designation to Tier 1~~
~~pH..... Remains Tier 2 designation~~
~~Temperature ..... Further assessment required~~
~~Total Trihalomethanes (TTHM)..... Changes designation to Tier 1~~
~~Turbidity..... Remains Tier 2 designation~~
~~Zinc..... Changes designation to Tier 1~~

b. **Scientific Rationale for Determining Potential Lowering of Water Quality.** The rationale used in the AAR is based on Code of Federal Regulation, Section 131.12 (40 CFR 131.12), USEPA memorandum *Regarding Tier 2 Antidegradation*

Reviews and Significance Thresholds (USEPA 2005) USEPA Region 9 *Guidance on Implementing the Antidegradation Provisions of 40 CFR 131.12* (USEPA 1987), State Water Resources Control Board (SWRCB) Resolution No. 68-16, a SWRCB 1987 policy memorandum to the Regional Water Quality Control Boards (RWQCB), and an Administrative Procedures Update (APU 90-004) issued by SWRCB to the RWQCBs. The scientific rationale the Discharger used to determine if the Order allows a lowering of water quality is to determine the reduction of assimilative capacity. Assimilative capacity was calculated on a mass-balanced, concentration basis and, for bioaccumulative constituents, calculated on a mass loading basis. This approach is consistent with recent USEPA guidance and addresses a key objective of the AAR to "[c]ompare receiving water quality to the water quality objectives established to protect designated beneficial uses" (APU 90-004). ~~of the receiving water above a recommended USEPA threshold.~~ USEPA has recommended ten (10) percent as a measure of significance for identifying those substantial lowerings of water quality that should receive a full tier 2 antidegradation review. ~~determining whether alternatives to the proposed action must be considered.~~ APU 90-004 requires the consideration of "feasible alternative control measures" as part of the procedures for a complete antidegradation analysis.The Discharger analyzed each pollutant detected in the effluent and receiving water to determine if the increased discharge of 4.0 mgd authorized by this~~the~~ Order potentially allows significant increase of the amount of pollutants present in the downstream receiving water. Pollutants that significantly increased concentration or mass downstream required an alternatives analysis to determine whether implementation of alternatives to the proposed action would be in the best socioeconomic interest of the people of the region, and be to the maximum benefit of the people of the State. Details on the scientific rationale are discussed in detail in the AAR.

c. **Description of Alternative Control Measures.** The Discharger considered several alternatives that would reduce or eliminate the lowering of water quality resulting from the additional 1.0 mgd of discharge capacity proposed with the plant expansion. The costs associated with the alternatives considered were compiled in Table 12 of the AAR. The plant expansion alternatives and associated baseline and additional estimated costs to implement the alternatives are summarized below:

1. No Alternative, proposed project ($35.6 million)
2. Higher level of treatment using micro filtration (additional $44.4 million);
3. Zero discharge (100%) recycling of additional plant capacity (additional $37.2 million plus land acquisition costs);
4. Flow restricted discharge (not feasible due to insufficient dilution flow);
5. Pollutant source minimization (additional $87.7 million);
6. Connect to Sacramento Regional Wastewater Treatment Plant ($125 million); and
7. Change in drinking water source (not feasible due to already existing high quality of source water).

d. **Description of Socioeconomic Evaluation.** A socioeconomic evaluation was performed in the AAR to determine if the lowering of water quality is in the "best interest" of the people of the State. The socioeconomic evaluation considered:

1. The social benefits and costs based on the ability to accommodate socioeconomic development in the El Dorado County General Plan.
2. The magnitude of the water quality impacts, the change in water quality from existing conditions, and expected effects on beneficial uses of Carson Creek and downstream waters.
3. The feasibility and effectiveness of reducing the lowering of water quality by implementing alternatives to lowering of Carson Creek water quality.
4. The economic costs for alternatives: assessed against the current project expansion cost estimate of $35.6 million; the increased cost for ratepayers; and the magnitude of the change in ratepayer costs.

e. **Justification for Socioeconomic Considerations.** Potential degradation identified in the AAR due to this Order is justified by the following socioeconomic considerations:

1. The socioeconomic evaluation of the costs associated with alternatives to the proposed project inhibits socioeconomic growth making it economically impractical for any new development to occur. Additional costs for implementing alternatives ranged from one to over three times the estimated costs for the proposed expansion of discharge capacity. Implementation of alternatives does not provide socioeconomic benefit to the people of the region, nor do they provide maximum benefit to the people of the State;
2. The Discharger currently maximizes production and use of recycled water, and will continue to do so in the future, thereby minimizing discharges to surface waters;
3. The Order is fully protective of beneficial uses of Carson Creek. The anticipated water quality changes in Carson Creek will not reduce or impair its designated beneficial uses and is consistent with state and federal Antidegradation policies;
4. The District operates a wastewater treatment process that meets or exceeds the highest statutory and regulatory requirements which meets or exceeds Best Practical Treatment or Control (BPTC);
5. The District has implemented reasonable best management practices for non-point source control;
6. The Discharger has fully satisfied the requirements of the intergovernmental coordination and public participation provisions of the State's continuing planning process concurrent with the public participation period of this Order; and
7. Proposed changes to comply with new effluent limitations in the Order will further reduce the additional mass loadings.

The increase in the volume and mass of pollutants discharged will not cause a violation of water quality objectives. The increase in the discharge allows

wastewater utility service necessary to accommodate important housing and economic expansion in the area, and is considered to be ~~a~~ of maximum public benefit to the people of the State. Compliance with these requirements will result in the use of best practical treatment or control of the discharge.

Summary of Final Effluent Limitations
Discharge Point EFF-001

Table F-17. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Maximum Daily	Instan-taneous Minimum	Instan-taneous Maximum	
Settleable Solids	ml/L	0.1	---	0.2	---	---	Basin Plan
pH	standard units	---	---	---	6.5	8.5	Basin Plan
Aluminum, Total Recoverable	µg/L	59	---	161	---	---	USEPA AQ
Bis (2-Chloroethyl) ether	µg/L	0.031	---	0.062	---	---	CTR HH
Bis (2-ethylhexyl) phthalate	µg/L	1.8	---	3.6	---	---	CTR HH
Carbon Tetrachloride	µg/L	0.25	---	0.50	---	---	CTR HH
Copper, Total Recoverable	µg/L	4.62	---	7.6	---	---	CTR AQ
Cyanide	µg/L	4.26	---	8.54	---	---	CTR AQ
Dibromochloromethane	µg/L	0.41	---	0.80	---	---	CTR HH
Dichlorobromomethane	µg/L	0.56	---	0.93	---	---	CTR HH
Electric Conductivity (EC) @ 25° C	µmhos/ cm	700	---	---	---	---	Basin Plan
Iron, Total Recoverable	µg/L	300	---	---	---	---	WQO
Nitrate (N)	mg/L	10	---	---	---	---	WQO
Persistent Chlorinated Hydrocarbon Pesticides	µg/L	ND	---	---	---	---	Basin Plan
Total Trihalomethanes (TTHM)	µg/L	80	---	---	---	---	Basin Plan
Zinc, Total Recoverable	µg/L	23.9	---	69.0	---	---	CTR AQ

Table F-17. Continued.

Parameter	Units	Effluent Limitations					Basis
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Mass Based Effluent limits @ 3.0 mgd AD~~D~~WF							
Biochemical Oxygen Demand (BOD) 5-day @ 20°C	mg/L	10	15	30	---	---	TBEL
	lbs/day	250	375	750	---	---	
Total Suspended Solids	mg/L	10	15	30	---	---	TBEL
	lbs/day	250	375	750	---	---	
~~Aluminum, Total Recoverable~~	~~µg/L~~	~~59~~	~~---~~	~~161~~	~~---~~	~~---~~	~~USEPA AQ~~
	~~lbs/day~~	~~1.48~~	~~---~~	~~4.03~~	~~---~~	~~---~~	
Ammonia (as Nitrogen)	mg/L	0.43	---	See IV.A.1.f	---	---	WQO
	lbs/day	10.8	---	21.8	---	---	
~~Copper, Total Recoverable~~	~~µg/L~~	~~4.62~~	~~---~~	~~7.6~~	~~---~~	~~---~~	~~CTR AQ~~
	~~lbs/day~~	~~0.12~~	~~---~~	~~0.19~~	~~---~~	~~---~~	
~~Manganese, Total Recoverable~~	~~µg/L~~	~~50~~	~~---~~	~~---~~	~~---~~	~~---~~	~~WQO~~
	~~lbs/day~~	~~1.25~~	~~---~~	~~---~~	~~---~~	~~---~~	
Mass Based Effluent limits @ 4.0 mgd AD~~D~~WF							
Biochemical Oxygen Demand (BOD) 5-day @ 20°C	mg/L	10	15	30	---	---	TBEL
	lbs/day	334	500	1000	---	---	
Total Suspended Solids	mg/L	10	15	30	---	---	TBEL
	lbs/day	334	500	1000	---	---	
~~Aluminum, Total Recoverable~~	~~µg/L~~	~~59~~	~~---~~	~~161~~	~~---~~	~~---~~	~~USEPA AQ~~
	~~lbs/day~~	~~1.97~~	~~---~~	~~5.37~~	~~---~~	~~---~~	
Ammonia (as Nitrogen)	mg/L	0.43	---	See IV.A.1.f	---	---	WQO
	lbs/day	14.4	---	29.0	---	---	
~~Copper, Total Recoverable~~	~~µg/L~~	~~4.62~~	~~---~~	~~7.6~~	~~---~~	~~---~~	~~CTR AQ~~
	~~lbs/day~~	~~0.154~~	~~---~~	~~0.255~~	~~---~~	~~---~~	
~~Manganese, Total Recoverable~~	~~µg/L~~	~~50~~	~~---~~	~~---~~	~~---~~	~~---~~	~~WQO~~
	~~lbs/day~~	~~1.67~~	~~---~~	~~---~~	~~---~~	~~---~~	

1. TBEL. Technology Based Effluent Limit.
2. Basin Plan. Effluent Limit based on Basin Plan Objective.
3. CTR HH. California Toxics Rule for protection of human health.
4. CTR AQ. California Toxics Rule for protection of aquatic life.
5. WQO. Water Quality Objective based on Department of Health Services and/or USEPA Maximum Containment Levels (MCL).
6. USEPA AQ. USEPA National Ambient Water Quality Criteria for aquatic life.

E. Interim Effluent Limitations

1. **Bis (2-Chloroethyl) ether, Bis (2-ethylhexyl) phthalate, Carbon Tetrachloride, Copper, Cyanide, Dibromochloromethane, Dichlorobromomethane, Total Trihalomethanes (TTHM), Zinc, Aluminum, Ammonia, Electrical Conductivity (EC), Persistent Chlorinated Hydrocarbon Pesticides .** The SIP, section 2.2.1, requires that if a compliance schedule is granted for a CTR or NTR constituent, the Regional Water Board shall establish interim requirements and dates for their achievement in the NPDES permit. The interim limitations must be based on current treatment plant performance or existing permit limitations, whichever is more stringent. The State Water Board has held that the SIP may be used as guidance for non-CTR constituents. Therefore, the SIP requirement for interim effluent limitations has been applied to both CTR and non-CTR constituents in this Order.

   The interim limitations for Bis (2-Chloroethyl) ether, Bis (2-ethylhexyl) phthalate, Carbon Tetrachloride, Copper, Cyanide, Dibromochloromethane, Dichlorobromomethane, Total Trihalomethanes (TTHM), Zinc, Aluminum, Ammonia, Electrical Conductivity (EC), and Persistent Chlorinated Hydrocarbon Pesticides in this Order are based on the current treatment plant performance. In developing the interim limitation, where there are ten sampling data points or more, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (*Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row*). Therefore, the interim limitations in this Order are established as the mean plus 3.3 standard deviations of the available data.

   When there are less than ten sampling data points available, the *Technical Support Document for Water Quality- Based Toxics Control* ((EPA/505/2-90-001), TSD) recommends a coefficient of variation of 0.6 be utilized as representative of wastewater effluent sampling. The TSD recognizes that a minimum of ten data points is necessary to conduct a valid statistical analysis. The multipliers contained in Table 5-2 of the TSD are used to determine a maximum daily limitation based on a long-term average objective. In this case, the long-term average objective is to maintain, at a minimum, the current plant performance level. Therefore, when there are less than ten sampling points for a constituent, interim limitations are based on 3.11 times the maximum observed effluent concentration to obtain the daily maximum interim limitation (TSD, Table 5-2).

   The Regional Water Board finds that the Discharger can undertake source control and treatment plant measures to maintain compliance with the interim limitations included in this Order. Interim limitations are established when compliance with effluent limitations cannot be achieved by the existing discharge. Discharge of constituents in concentrations in excess of the final effluent limitations, but in compliance with the interim effluent limitations, can significantly degrade water

quality and adversely affect the beneficial uses of the receiving stream on a long-term basis. The interim limitations, however, establish an enforceable ceiling concentration until compliance with the effluent limitation can be achieved.

Table 6 summarizes the calculations of the interim effluent limitations for Bis (2-Chloroethyl) ether, Bis (2-ethylhexyl) phthalate, Carbon Tetrachloride, Copper, Cyanide, Dibromochloromethane, Dichlorobromomethane, Total Trihalomethanes (TTHM), Zinc, Aluminum, Ammonia, Electrical Conductivity (EC), and Persistent Chlorinated Hydrocarbon Pesticides:

Table F-18. Interim Effluent Limitation Calculation Summary

Parameter	Units	MEC	Mean (x)	Std. Dev. (sd)	# of Samples	# of Non-Detects	Formula used	Interim Limitation (max daily)
Aluminum, Total Recoverable	ug/L	760	168	204	21	2	x+3.3*sd	841
~~Ammonia (as Nitrogen)~~	~~mg/L~~	~~3.4~~	~~0.607~~	~~N/A~~	~~27~~	~~26~~	~~3.11*MEC~~	~~10.6~~
Bis (2-Chloroethyl) ether	ug/L	3.2	0.68	N/A	15	14	3.11*MEC	9.95
Bis (2-ethylhexyl) phthalate	ug/L	2.6	2.107	N/A	15	14	3.11*MEC	8.09
Carbon Tetrachloride	ug/L	0.42	0.257	N/A	23	22	3.11*MEC	1.31
Copper, Total Recoverable	ug/L	19.5	10.6	4.036	34	-	x+3.3*sd	23.88
Cyanide	ug/L	6.7	2.7	0.875	23	21	3.11*MEC	20.84
Dibromochloromethane	ug/L	3.1	1.15	0.64	23	2	x+3.3*sd	3.28
Dichlorobromomethane	ug/L	18	10.439	4.094	23	-	x+3.3*sd	23.95
Electrical Conductivity (EC)	umhos/cm	940	751	88	126	-	x+3.3*sd	1041
Total Trihalomethanes (TTHM)	ug/L	136.6	72.3	32.0	23	-	x+3.3*sd	178
Zinc, Total Recoverable	ug/L	330	42	63	23	-	NA	330[1]
4,4'-DDT	ug/L	0.047	0.009	N/A	15	14	3.11*MEC	0.146
Aldrin	ug/L	0.016	0.004	N/A	15	14	3.11*MEC	0.050
alpha-BHC	ug/L	0.013	0.006	0.002	15	13	3.11*MEC	0.040
alpha-Endosulfan	ug/L	0.053	0.012	0.012	15	12	3.11*MEC	0.165
beta-BHC	ug/L	0.018	0.004	N/A	15	14	3.11*MEC	0.056
beta-Endosulfan	ug/L	0.068	0.009	0.016	15	13	3.11*MEC	0.212
Chlorodane	ug/L	0.01	0.038	N/A	15	14	3.11*MEC	0.031
Dalapon	ug/L	7.4	7.4	N/A	13	12	3.11*MEC	23.1
delta-BHC	ug/L	0.049	0.006	0.012	15	13	3.11*MEC	0.152
Endrin	ug/L	0.017	0.006	N/A	15	14	3.11*MEC	0.053
Endrin aldehyde	ug/L	0.17	0.017	0.042	15	13	3.11*MEC	0.529
gamma-BHC	ug/L	0.067	0.013	0.015	15	12	3.11*MEC	0.208
Heptachlor	ug/L	0.078	0.013	0.022	15	12	3.11*MEC	0.243

[1] MEC exceeds calculated value. Therefore MEC used to establish performance-based interim limitation.

F. Land Discharge Specifications

The Land Discharge Specifications are necessary to protect the beneficial uses of the groundwater. The Discharger uses unlined storage ponds that are used for influent emergency storage, filter backwash flows, and secondary treated wastewater that can adversely affect the beneficial uses of groundwater. Proper operation of the ponds is necessary to protect groundwater as well as to prevent adverse toxicity in the ponds and the emmission of objectionable odors. Toxicity can be controlled if the pH in the ponds is maintained between 6.0 and 9.0. Objectionable odors can be prevented if the DO in the ponds remains above 1.0 mg/l. Therefore, discharge limits for pH and DO are established in this Order.

G. Reclamation Specifications

Treated wastewater discharged for reclamation is regulated under separate waste discharge requirements and must meet the requirements of California Code of Regulations, Title 22.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Basin Plan water quality objectives to protect the beneficial uses of surface water and groundwater include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminant levels (MCLs) in Title 22, CCR. The tastes and odors objective states that surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "*[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional 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, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, and turbidity.

Numeric Basin Plan objectives for bacteria, dissolved oxygen, pH, temperature, and turbidity are applicable to this discharge and have been incorporated as Receiving Surface Water Limitations. Rationale for these numeric and narrative receiving surface water limitations are as follows:

a. ***Bacteria.** The Basin Plan includes a water quality objective that "*[I]n water designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml*." Numeric Receiving Water Limitations for bacteria are included in this Order and are based on the Basin Plan objective.

b. ***Biostimulatory Substances**. The Basin Plan includes a water quality objective that "*[W]ater shall not contain biostimulatory substances which promote aquatic growths in concentrations that cause nuisance or adversely affect beneficial uses."* Receiving Water Limitations for biostimulatory substances are included in this Order and are based on the Basin Plan objective.

c. ***Color**. The Basin Plan includes a water quality objective that "*[W]ater shall be free of discoloration that causes nuisance or adversely affects beneficial uses."* Receiving Water Limitations for color are included in this Order and are based on the Basin Plan objective.

d. ***Chemical Constituents**. The Basin Plan includes a water quality objective that *"[W]aters shall not contain chemical constituents in concentrations that adversely affect beneficial uses."* Receiving Water Limitations for chemical constituents are included in this Order and are based on the Basin Plan objective.

e. ***Dissolved Oxygen.** The Carson Creek has been designated as having the beneficial use of cold freshwater aquatic habitat (COLD). For water bodies designated as having COLD as a beneficial use, the Basin Plan includes a water quality objective of maintaining a minimum of 7.0 mg/L of dissolved oxygen. Since the beneficial use of COLD does apply to the Carson Creek, a receiving water limitation of 7.0 mg/L for dissolved oxygen was included in this Order. For surface water bodies outside of the Delta, the Basin Plan includes the water quality objective that "…*the monthly median of the mean daily dissolved oxygen (DO) concentration shall not fall below 85 percent of saturation in the main water mass, and the 95 percentile concentration shall not fall below 75 percent of saturation.*" This objective was included as a receiving water limitation in this Order.

f. ***Floating Material**. The Basin Plan includes a water quality objective that *"[W]ater shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses."* Receiving Water Limitations for floating material are included in this Order and are based on the Basin Plan objective.

g. ***Oil and Grease**. The Basin Plan includes a water quality objective that *"[W]aters 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."* Receiving Water Limitations for oil and grease are included in this Order and are based on the Basin Plan objective.

h. ***pH.** The Basin Plan includes water quality objective that *"[T]he pH shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters with designated COLD or WARM beneficial uses."* This Order includes receiving water limitations for both pH range and pH change.

   The Basin Plan allows an appropriate averaging period for pH change in the receiving stream. Since there is no technical information available that indicates that aquatic organisms are adversely affected by shifts in pH within the 6.5 to 8.5, an averaging period is considered appropriate and a monthly averaging period for determining compliance with the 0.5 receiving water pH limitation is included in this Order.

i. ***Pesticides**. The Basin Plan includes a water quality objective for pesticides beginning on page III-6.00. Receiving Water Limitations for pesticides are included in this Order and are based on the Basin Plan objective.

j. ***Radioactivity**. The Basin Plan includes a water quality objective that *"[R]adionuclides shall not 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."* The Basin Plan states further that *"[A]t a minimum, waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of radionuclides in excess of the maximum contaminant levels (MCLs) specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations…"* Receiving Water Limitations for radioactivity are included in this Order and are based on the Basin Plan objective.

k. ***Sediment.** The Basin Plan includes a water quality objective that *"[T]he suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses"* Receiving Water Limitations for suspended sediments are included in this Order and are based on the Basin Plan objective.

l. ***Settleable Material.** The Basin Plan includes a water quality objective that *"[W]aters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses."* Receiving Water Limitations for settleable material are included in this Order and are based on the Basin Plan objective.

m. ***Suspended Material.** The Basin Plan includes a water quality objective that *"[W]aters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses."* Receiving Water Limitations for suspended material are included in this Order and are based on the Basin Plan objective.

n. ***Taste and Odors**. The Basin Plan includes a water quality objective that *"[W]ater 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."* Receiving Water Limitations for taste- or odor-producing substances are included in this Order and are based on the Basin Plan objective.

o. ***Temperature.** The Carson Creek has the beneficial uses of both COLD and WARM. The Basin Plan includes the objective that "[a]*t no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5ºF above natural receiving water temperature*." This Order includes a receiving water limitation based on this objective.

p. ***Toxicity**. The Basin Plan includes a water quality objective that *"[A]ll waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life."* Receiving Water Limitations for toxicity are included in this Order and are based on the Basin Plan objective.

q. ***Turbidity.** The Basin Plan includes a water quality objective that "*[I]ncreases in turbidity attributable to controllable water quality factors shall not exceed the following limits:*

- *Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.*
- *Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent.*
- *Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs.*
- *Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent*."

A numeric Receiving Surface Water Limitation for turbidity is included in this Order and is based on the Basin Plan objective for turbidity.

B. Groundwater

The beneficial uses of the underlying ground water are municipal and domestic supply, and agricultural supply, including stock watering.
Basin Plan water quality objectives include narrative objectives for chemical constituents, tastes and odors, and toxicity of groundwater. The toxicity objective requires that groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective states groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use. The tastes and odors objective prohibits taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses. The Basin Plan also establishes numerical water quality objectives for chemical constituents and radioactivity in groundwaters designated as municipal supply. These include, at a minimum, compliance with MCLs in Title 22 of the CCR. The bacteria objective prohibits coliform organisms at or above 2.2 MPN/100 ml. The Basin Plan requires the application of the most stringent objective necessary to ensure that waters do not contain chemical constituents, toxic substances, radionuclides, taste- or odor-producing substances, or bacteria in concentrations that adversely affect municipal or domestic supply, agricultural supply, industrial supply or some other beneficial use.

The Discharger uses unlined storage ponds that are used for influent emergency storage, filter backwash flows, and secondary treated wastewater that can adversely affect the beneficial uses of groundwater. The unlined storage ponds contain concentrations of Ammonia, TDS, Nitrates, and Nitrates that have reasonable potential to reach underlying groundwater.The Regional Water Board in the previous Order found that a monitoring point should be established as near the percolation area as possible. A monitoring point was not established. Thus, the adverse affect to groundwater is undetermined at this time. However, Basin Plan water quality objective prohibits coliform organisms at or above 2.2 MPN/100 ml in underlying groundwater. The Basin Plan also designated that all groundwater should be considered potentially suitable for municipal and domestic water supply (MUN). Therefore, groundwater limitations for Ammonia, TDS, Nitrates, Nitrates, and total coliform are required to protect the beneficial uses of the underlying groundwater.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the wastewater and to assess compliance with effluent limitations (*e.g.*, BOD and TSS reduction 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. The SIP states that if *"…"If data are unavailable or insufficient, as described in section 1.2, to conduct the above analysis for the pollutant, or if all reported detection limits of the pollutant in the effluent are greater than or equal to the C* [water quality criterion or objective] *value, the RWQCB* [Regional Water Board] *shall require additional monitoring for the pollutant in place of a water quality-based effluent limitation. Upon completion of the required monitoring, the RWQCB shall use the gathered data to conduct the analysis in Steps 1 through 7 above and determine if a water quality-based effluent limitation is required. If, upon completion of the monitoring required by Step 8 and the subsequent analysis in Steps 1 through 7, a specific pollutant was not detected in any effluent or if ambient background sample and applicable detection limits are greater than or equal to the C value, the RWQCB may require periodic monitoring of the pollutant~~establish interim requirements…that require additional monitoring for the pollutant…~~."* All reported detection limits listed in Table F-9 are greater than or equal to corresponding applicable water quality criteria or objectives. Additional monitoring for these CTR constituents has been included in this Order in accordance with the SIP and the annual CTR constituent monitoring requirements.

Table F-19. Constituents with Method Detection Limit (MDL) above WQC/WQO

Constituent	Units	Criteria	Basis	Method Detection Limit (MDL)	# Samples Taken
1,1-Dichloroethylene	ug/l	0.057	CTR HH	0.098	23

1,2-Diphenylhydrazine	ug/l	0.04	CTR HH	0.13	15
2,3,7,8-TCDD (Dioxin)	ug/l	0.000000013	CTR HH	0.000229	5
2,4,5-TP (Silvex)[8]	ug/l	Non Detect	Basin Plan	0.01	13
2,4-D[8]	ug/l	Non Detect	Basin Plan	0.0597	15
2,6-Dinitrotoluene	ug/l	0.05	USEPA	0.06	15
3,3'-Dichlorobenzidine	ug/l	0.04	CTR HH	0.2	15
4,4'-DDD[8]	ug/l	Non Detect	Basin Plan	0.0021	15
4,4'-DDE[8]	ug/l	Non Detect	Basin Plan	0.0059	15
Acrylonitrile	ug/l	0.059	CTR HH	1.03	23
Benzidine	ug/l	0.00012	CTR HH	1	15
Benzo(a)Anthracene	ug/l	0.0044	CTR HH	0.02	15
Benzo(a)Pyrene	ug/l	0.0044	CTR HH	0.05	15
Benzo(b)Fluoranthene	ug/l	0.0044	CTR HH	0.03	15
Benzo(k)Fluoranthene	ug/l	0.0044	CTR HH	0.07	15
Chlorpyrifos (Dursban)	ug/l	0.014	USEPA AQ	0.0151	5
Chrysene	ug/l	0.0044	CTR HH	0.02	15
Dibenzo(a,h)anthracene	ug/l	0.0044	CTR HH	0.07	15
Dibromochloropropane	ug/l	0.005	CALEPA	0.0057	13
Dieldrin[8]	ug/l	Non Detect	Basin Plan	0.01	11
Dinoseb (DNBP) [8]	ug/l	Non Detect	Basin Plan	0.032	13
Diquat	ug/l	0.5	USEPA AQ	1.2	4
Endosulfan Sulfate[8]	ug/l	Non Detect	Basin Plan	0.003	15
Heptachlor Epoxide[8]	ug/l	Non Detect	Basin Plan	0.001	15
Hexachlorobenzene[8]	ug/l	Non Detect	Basin Plan	0.04	15
Indeno(1,2,3-cd) Pyrene	ug/l	0.0044	CTR HH	0.05	15
Methoxychlor[8]	ug/l	Non Detect	Basin Plan	0.046	4
N-Nitrosodimethylamine	ug/l	0.00069	CTR HH	1	15
N-Nitrosodi-n-Propylamine	ug/l	0.005	CTR HH	0.03	15
Pentachlorophenol[8]	ug/l	Non Detect	Basin Plan	0.00508	16
Polychlorinated biphenyls (PCBs)	ug/l	0.00017	CTR HH	0.077	15
Thiobencarb	ug/l	1	WQO	1.2	6
Toxaphene[8]	ug/l	Non Detect	Basin Plan	0.13	15

1. Basin Plan. Effluent Limit Criteria based on Basin Plan Objective.
2. CTR HH. California Toxics Rule for protection of human health.
3. CTR AQ. California Toxics Rule for protection of aquatic life.
4. WQO. Water Quality Objective based on Department of Health Services and/or USEPA Maximum Containment Levels (MCL).
5. USEPA AQ. USEPA National Ambient Water Quality Criteria for aquatic life.
6. USEPA. One-in-a-million cancer risk.
7. CALEPA. Cancer Potency Factor.
8. Classified as a persistent chlorinated hydrocarbon pesticide. Monitoring will be conducting as part of monitoring requirements for persistent chlorinated hydrocarbon pesticides.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Bi-monthly (every two months) 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity. The

previous Order required quarterly testing for acute toxicity (4 times per year). However, since the Discharger typically discharges six months out of the year between November and April (6 months) bi-monthly testing will also produce four sets of data in a six month period. Therefore, no additional burden is placed on the Discharger by requiring bi-monthly testing.

2. **Chronic Toxicity.** Monthly chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective. Three species chronic toxicity monitoring results in the previous permit indicated that the receiving water used in the dilution series in many instances was toxic to *Pimephales promelas*, and *Ceriodaphnia dubia*. Furthermore, no dilution credit is allowed for the receiving water since it has been determined to be an ephemeral stream. The previous Order required monitoring four times per year using a dilution series that is not applicable to the discharge. The dilution series for the three species chronic toxicity monitoring has been modified to reflect the results from the previous Order. The dilution series specified in Attachment E will replace the dilution series specified in the previous Order. The dilution series will consist of 100% effluent, 100% receiving water, and 100% lab control water. The previous Order required testing four times per year for chronic toxicity (4 times per year). However, since the Discharger typically discharges six months out of the year between November and April (6 months) monthly testing will produce seven sets of data in a six-month period. Requiring monthly monitoring instead of previously required four times per year will not cause additional cost to the Discharger but is estimated to save the Discharger testing costs due to a reduced number of tests per species. Therefore, no additional burden is placed on the Discharger by requiring monthly testing. Furthermore, the reduced dilution series will continue to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

a. Receiving water monitoring is necessary to assess compliance with receiving water limitations and to assess the impacts of the discharge on the receiving stream.

2. Groundwater

a. Section 13267 of the California Water Code 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, the Regional Water 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 Monitoring and Reporting Program (Attachment E) is issued pursuant to California Water Code Section 13267. The groundwater monitoring and reporting program required by this Order and the Monitoring and Reporting Program are necessary to assure compliance with these waste discharge requirements. The Discharger is responsible for the discharges of waste at the facility subject to this Order.

b. Monitoring of the groundwater must be conducted to determine if the discharge has caused an increase in constituent concentrations, when compared to background. The monitoring must, at a minimum, require a complete assessment of groundwater impacts including the vertical and lateral extent of degradation, an assessment of all wastewater-related constituents which may have migrated to groundwater, an analysis of whether additional or different methods of treatment or control of the discharge are necessary to provide best practicable treatment or control to comply with Resolution No. 68-16. Economic analysis is only one of many factors considered in determining best practicable treatment or control. If monitoring indicates that the discharge has incrementally increased constituent concentrations in groundwater above background, this permit may be reopened and modified. Until groundwater monitoring is sufficient, this Order contains Groundwater Limitations that allow groundwater quality to be degraded for certain constituents when compared to background groundwater quality, but not to exceed water quality objectives. If groundwater quality has been degraded by the discharge, the incremental change in pollutant concentration (when compared with background) may not be increased. If groundwater quality has been or may be degraded by the discharge, this Order may be reopened and specific numeric limitations established consistent with Resolution 68-16 and the Basin Plan.

c. This Order requires the Discharger to begin groundwater monitoring and includes a regular schedule of groundwater monitoring in the attached Monitoring and Reporting Program. The groundwater monitoring reports are necessary to evaluate impacts to waters of the State to assure protection of beneficial uses and compliance with Regional Board plans and policies, including Resolution 68-16. Evidence in the record includes effluent monitoring data that indicates the presence of constituents that may degrade groundwater and surface water.

E. Other Monitoring Requirements

1. Biosolids Monitoring

a. Biosolids monitoring is required to ensure compliance with the biosolids disposal requirements (Special Provisions VI.C.6.a.). Biosolids disposal requirements are imposed pursuant to 40 CFR Part 503 to protect public health and prevent

groundwater degradation. Therefore, biosolids is required in this Order consistent with monitoring requirements and monitoring frequency established in the previous Order.

2. **Land Discharge Monitoring**

a. The land discharge monitoring is necessary to protect the beneficial uses of the groundwater as well as to prevent the ponds from becoming toxic or becoming offensive due to objectionable odors. The Discharger uses unlined storage ponds that are used for influent emergency storage, filter backwash flows, and secondary treated wastewater that can adversely affect the beneficial uses of groundwater as well as become toxic and/or omit objectionable odors. The unlined storage ponds can become hazardous if the pH falls below 6.0 or rises above 9.0. Furthermore, if DO in the ponds fall below 1.0 mg/l the ponds may produce objectionable odors. Monitoring of standard minerals and Title 22 metals is required to determine impacts on beneficial uses of underlying groundwater. Therefore, pond monitoring of pH, DO, standard minerals, and Title 22 metals is required in this Order.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Section 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. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal conditions that address enforcement authority specified in sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

f. **Pollution Prevention.** This Order requires the Discharger prepare and implement pollution prevention plans following CWC section 13263.3(d)(3) for Aluminum, Ammonia, Bis (2-Chloroethyl) ether, Bis (2-ethylhexyl) phthalate, Carbon Tetrachloride, Copper, Cyanide, Dibromochloromethane, Dichlorobromomethane, Persistent Chlorinated Hydrocarbon Pesticides, Total Trihalomethanes (TTHM), and Zinc. This reopener provision allows the Regional Water Board to reopen this Order for addition and/or modification of effluent limitations and requirements for these constituents based on a review of the pollution prevention plans. The Pollution Prevention Plan required herein is not incorporated by reference into this Order.

g. **Ammonia.** This Order establishes fixed ammonia effluent limitations based on worse case pH and temperature values. If the Regional Water Board staff determines that floating ammonia effluent limitations (based on pH and Temperature of the effluent and/or receiving water) are appropriate, this Order may be reopened to include revised ammonia effluent limitations and monitoring requirements.

h. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a numeric chronic toxicity 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.

i. **Salinity Evaluation and Minimization Plan.** This Order requires the Discharger shall prepare and implement a salinity evaluation and minimization plan to address sources of salinity from the municipal wastewater treatment system. The plan shall be completed and submitted to the Regional Water Board within 9 months of the effective date of this Order for approval by the Executive Officer. This reopener provision allows the Regional Water Board to reopen this Order for addition and/or modification of effluent limitations and requirements for salinity based on a review of the results of implementation of the salinity evaluation and minimization plan.

j. **Water Effects Ratio (WER) and Metal Translators.** A default WER of 1.0 has been used in this Order for calculating CTR criteria for applicable priority pollutant 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 Aluminum, Copper, and Zinc. If the Discharger performs studies to determine site-specific WERs and/or site-specific dissolved-to-total metal translators, this Order may be reopened to modify the effluent limitations for the applicable inorganic constituents.

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 III-8.00.) Adequate WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

Three species chronic toxicity monitoring results in the previous permit indicated that the receiving water used in the dilution series in many instances was toxic to *Pimephales promelas*, and *Ceriodaphnia dubia*. Furthermore, no dilution credit is allowed for the receiving water since it has been determined to be an ephemeral stream. The previous Order required monitoring four times per year using a dilution series that is not applicable to the discharge. The dilution series for the three species chronic toxicity monitoring has been modified to reflect the results from the previous Order. The dilution series specified in Attachment E will replace the dilution series specified in the previous Order. The dilution series will consist of 100% effluent, 100% receiving water, and 100% lab control water. The previous Order required testing four times per year for chronic toxicity (4 times per year). However, since the Discharger typically discharges six months out of the year between November and April (6 months) monthly testing will produce seven sets of data in a six-month period. Requiring monthly monitoring instead of previously required four times per year will not cause additional cost to the Discharger but is estimated to save the Discharger testing costs due to a reduced number of tests per species. Therefore, no additional burden is placed on the Discharger by requiring monthly testing.

Therefore, Attachment E of this Order requires monthly chronic WET monitoring for demonstration of compliance with the narrative toxicity objective.

In addition to WET monitoring, this provision requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if a pattern of toxicity is demonstrated.

Monitoring Trigger. A numeric toxicity monitoring trigger of a statistically significant difference between 100% effluent test concentration response and the laboratory control test response is applied in the provision, because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits a pattern of toxicity at 100% effluent.

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 a pattern of toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

The provision requires accelerated monitoring consisting of four chronic toxicity tests every two weeks using the species that exhibited toxicity. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991* (TSD). The TSD at page 118 states, "EPA recommends if toxicity is repeatedly or periodically present at levels above effluent limits more than 20 percent of the time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity (i.e. toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

See the WET Accelerated Monitoring Flow Chart (Figure F-1), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

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

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

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

- *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures,* Second Edition, EPA 600/6-91/005F, 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. **Groundwater Monitoring (Special Provisions VI.C.2.d.).** To determine compliance with Groundwater Limitations V.B., the Discharger is required to establish and implement a groundwater-monitoring network. This provision requires the Discharger to establish and implement a groundwater-monitoring network to ensure there are one or more background monitoring wells and a sufficient number of designated monitoring wells downgradient of every treatment, storage, and disposal unit that does or may release waste constituents to groundwater. Currently, there are no groundwater monitoring wells downgradient of the unlined storage ponds, treatment, storage, and disposal units that do or may release waste constituents to groundwater. The Discharger must install new groundwater monitoring wells, and collect one year of monitoring data, and submit a report evaluating the underlying groundwater by **24 months after the effective date of this Order**. If the monitoring shows that any constituent concentrations are increased above background water quality, by **30 months after the effective date of this Order**, the Discharger shall submit a technical report describing the groundwater evaluation report results and critiquing each evaluated facility component with respect to BPTC and minimizing the discharge's impact on groundwater quality.

3. Best Management Practices and Pollution Prevention

a. **Pollution Prevention Plan (PPP) for mercury.** A PPP for mercury is required in this Order per CWC section 13263.3(d)(1)(D) as part of the interim effluent limitation for mercury. The interim effluent limitations for mercury limits the mass loading to current levels. The Discharger has requested an expansion; therefore, it may be necessary to provide source controls to limit the mass loading of mercury entering the facility to comply with the interim effluent limitations for mercury. The PPP shall be developed in conformance with CWC section 13263.3(d)(3) as outlined in subsection b., below.

b. **CWC section 13263.3(d)(3) Pollution Prevention Plans.** The pollution prevention plans required for mercury shall, at minimum, meet the requirements outlined in CWC section 13263.3(d)(3). The minimum requirements for the pollution prevention plans include the following:

i. An estimate of all of the sources of a pollutant contributing, or potentially contributing, to the loadings of a pollutant in the treatment plant influent.

ii. An analysis of the methods that could be used to prevent the discharge of the pollutants into the Facility, including application of local limits to industrial or commercial dischargers regarding pollution prevention techniques, public education and outreach, or other innovative and alternative approaches to reduce discharges of the pollutant to the Facility. The analysis also shall identify sources, or potential sources, not within the ability or authority of the Discharger to control, such as pollutants in the potable water supply, airborne pollutants, pharmaceuticals, or pesticides, and estimate the magnitude of those sources, to the extent feasible.

iii. An estimate of load reductions that may be attained through the methods identified in subparagraph ii.

iv. A plan for monitoring the results of the pollution prevention program.

v. A description of the tasks, cost, and time required to investigate and implement various elements in the pollution prevention plan.

vi. A statement of the Discharger's pollution prevention goals and strategies, including priorities for short-term and long-term action, and a description of the Discharger's intended pollution prevention activities for the immediate future.

vii. A description of the Discharger's existing pollution prevention programs.

viii. An analysis, to the extent feasible, of any adverse environmental impacts, including cross-media impacts or substitute chemicals that may result from the implementation of the pollution prevention program.

ix. An analysis, to the extent feasible, of the costs and benefits that may be incurred to implement the pollution prevention program.

4. Construction, Operation, and Maintenance Specifications

a. **Treatment Pond Monitoring and Reporting.** Treatment pond monitoring and reporting is required to ensure the ponds are being properly maintained. Treatment ponds must maintain proper DO levels to prevent emission of objectionable odors. Proper freeboard is required to prevent washout of the ponds due to wave action. Ponds that are not managed properly provide a breeding ground for mosquitoes that can present a human health hazard.

b. **Ultraviolet Disinfection (UV) System Monitoring and Reporting.** UV System 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 dosage is dependent on several factors such as UV transmittance, UV power setting, and wastewater flow through the UV System. Monitoring and reporting of these parameters is necessary to determine compliance with minimum dosage requirements established by the California Department of Health Services (CDHS), 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"* first published in December 2000 revised as a Second Edition dated May 2003. Furthermore, a Memorandum dated November 1, 2004 issued by CDHS to Regional Board executive officers recommended that provisions be included in permits for 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). Minimum UV dosage requirements specified in Effluent Limitations and Discharge Specifications Section VI.C.4 and monitoring and reporting requirements found in Attachment E Section IX.B. ensures that adequate disinfection of wastewater is achieved.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. **Pretreatment Requirements.**

i. The Federal Clean Water Act, Section 307(b), and Federal Regulations, 40 CFR Part 403, require publicly owned treatment works to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or sludge disposal, and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Pretreatment requirements are imposed pursuant to 40 CFR Part 403.

ii. The Discharger shall implement and enforce its approved pretreatment program and is an enforceable condition of this Order. If the Discharger fails to perform the pretreatment functions, the Regional Water Board, the State Water Board or the U.S. EPA may take enforcement actions against the Discharger as authorized by the CWA.

6. Other Special Provisions (Not Applicable)

7. Compliance Schedules

The use and location of compliances schedules in the permit depends on the Discharger's ability to comply and the source of the applied water quality criteria.

a. The Discharger submitted a request, and justification dated 1 December 2006, for a compliance schedule for Ammonia. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of Section 2.1 of the SIP. This Order establishes a compliance schedule for the new, final, water quality-based effluent limitations for Ammonia and requires full compliance by 18 May 2008.

b. The Discharger submitted a request, and justification dated 1 December 2006, for a compliance schedule for Bis (2-Chloroethyl) ether, Bis (2-ethylhexyl) phthalate, Carbon Tetrachloride, Copper, Cyanide, Dibromochloromethane, Dichlorobromomethane, Total Trihalomethanes (TTHM), and ZInc. The compliance schedule justification included all items specified in Paragraph 3,

items (a) through (d), of Section 2.1 of the SIP. This Order establishes a compliance schedule for the new, final, water quality-based effluent limitations for Bis (2-Chloroethyl) ether, Bis (2-ethylhexyl) phthalate, Carbon Tetrachloride, Copper, Cyanide, Dibromochloromethane, Dichlorobromomethane, Total Trihalomethanes (TTHM), and Zinc and requires full compliance by 18 May 2010.

c. The Discharger submitted a request, and justification dated 1 December 2006, for a compliance schedule for Aluminum. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of Section 2.1 of the SIP. This Order establishes a compliance schedule for the new, final, water quality-based effluent limitations for Aluminum and requires full compliance by 18 May 2012.

d. The Discharger submitted a request, and justification dated 1 December 2006, for a compliance schedule for persistent chlorinated hydrocarbon pesticides. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of Section 2.1 of the SIP. This Order establishes a compliance schedule for the new, final, water quality-based effluent limitations persistent chlorinated hydrocarbon pesticides and requires full compliance by 18 May 2012.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, Central Valley Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for El Dorado Hills Wastewater Treatment Plant. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the 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 publication of a Notice of Public Hearing in a local newspaper and on the Central Valley Regional Water Board website.

B. Written Comments

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

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on 22 May 2007.

C. Public Hearing

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

Date: 21 and 22 June 2007
Time: 8:30 am
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 Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is http://www.waterboards.ca.gov/rwqcb5/ 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 Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Water Board's action to the following address:

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

E. Information and Copying

The Report of Waste Discharge (RWD), 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 Regional Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Vinoo Jain at 916-464-4815 or vkjain@waterboards.ca.gov.