CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2007-XXXX
NPDES NO. CA0084271

WASTE DISCHARGE REQUIREMENTS FOR MOUNTAIN HOUSE COMMUNITY SERVICES DISTRICT WASTEWATER TREATMENT FACILITY SAN JOAQUIN COUNTY

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

Discharger	Mountain House Community Services District
Name of Facility	Mountain House Wastewater Treatment Plant
Facility Address	17300 W. Bethany Road
	Mountain House, CA 95391
	San Joaquin County

The discharge from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Treated Wastewater	37º 47' 51.8" N	121º 31' 20.2" W	Old River

This Order was adopted by the Regional Water Board on:	**<Adoption Date>**
This Order shall become effective on:	**50 days following adoption**
This Order shall expire on:	**<Expiration Date>**
The U.S. Environmental Protection Agency (U.S. EPA) and the Regional Water Board have classified this discharge as a major discharge.	
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, **not later than 180 days in advance of the Order expiration date** as application for issuance of new waste discharge requirements.	

IT IS HEREBY ORDERED, that Order No. 98-192 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the California Water Code (CWC) 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>**.

_____
PAMELA C. CREEDON, Executive Officer

TABLE OF CONTENTS

I. Facility Information 3
II. Findings 3
III. Discharge Prohibitions 9
IV. Effluent Limitations and Discharge Specifications 9
A. Effluent Limitations – Discharge Point 001 (Old River) 9
1. Final Effluent Limitations 9
2. Final Effluent Limitations (3 mgd) 11
3. Final Effluent Limitations (5.4 mgd) 12
4. Interim Effluent Limitations—Discharge Point 001 13
B. Land Discharge Specifications – Not Applicable 13
C. Reclamation Specifications – Not Applicable 13
V. Receiving Water Limitations 14
A. Surface Water Limitations 14
B. Groundwater Limitations—Not Applicable 15
VI. Provisions 16
A. Standard Provisions 16
B. Monitoring and Reporting Program Requirements 20
C. Special Provisions 20
1. Reopener Provisions 20
2. Special Studies, Technical Reports and Additional Monitoring Requirements 21
3. Best Management Practices and Pollution Prevention 24
4. Compliance Schedules 25
5. Construction, Operation and Maintenance Specifications 26
6. Special Provisions for Municipal Facilities (POTWs Only) 27
7. Other Special Provisions 29
VII. Compliance Determination 30

Attachment A – Definitions A-1
Attachment B – Topographic Map B-1
Attachment C – Site Plan and Flow Schematics C-1
Attachment D –Standard Provisions D-1
Attachment E – Monitoring and Reporting Program (MRP) E-1
Attachment F – Fact Sheet F-1
Attachment G – Bibliography G-1

I. FACILITY INFORMATION

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

Discharger	Mountain House Community Services District
Name of Facility	Mountain House Wastewater Treatment Plant
Facility Address	17300 W. Bethany Road
	Mountain House, CA 95391
	San Joaquin County
Facility Contact, Title, and Phone	Mr. Paul Sensibaugh, General Manager (209) 468-9997
Mailing Address	SAME
Type of Facility	POTW
Facility Design Flow	3.0/5.4 million gallons per day (mgd)

II. FINDINGS

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

A. Background. Mountain House Community Services District (hereafter Discharger) currently discharges under two separate Orders: Order No. 98-109 covers discharges to land, and Order No. 98-192 (NPDES No. CA0084271) covers discharges to surface waters. On February 20, 2003, the Mountain House Community Services District submitted a Report of Waste Discharge (ROWD) for NPDES permit renewal. The Mountain House Community Services District Wastewater Treatment Plant accepts wastewater flows and provides wastewater treatment for the community of Mountain House. The Discharger currently only discharges under Order No. 98-109.

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 Facility is currently designed to treat flows from Phase I of the development. The 0.45 mgd Phase I wastewater treatment plant (WWTF) consists of a head works, influent pumps, aerated lagoons in series, chemical addition, two dissolved air flotation units, a flocculation unit, two filters, a clear well, two chlorine contact basins, bisulfite dechlorination, sludge drying beds, two effluent storage reservoirs, a reclamation area, and a tail water return system with no provisions to discharge to Old River. Headworks screenings are hauled to a landfill by a licensed waste hauler. The Phase I WWTF is regulated under WDRs Order No. 98-109. Upon reaching an influent flow of 0.30 mgd, the Discharger will discontinue the Phase I WWTF and commence treating the wastewater with the Phase II WWTF.

The Phase II WWTF is designed for an influent flow of 3.0 mgd, and includes a head works, an anoxic reactor for flow/load equalization and a carbon source for denitrification, sequencing batch reactors (SBRs) for biological treatment including

nitrification and denitrification, tertiary filtration, automated chemical feed, ultraviolet disinfection, and aerobic sludge digestion. The Phase I lined aeration lagoons will be retained as emergency storage lagoons. The aerobic sludge digestion is designed to meet the Class B biosolids requirements of 40 CFR Part 503. The Phase III WWTF is an expansion of the Phase II WWTF, and has a design treatment capacity of 5.4 mgd. Effluent from the Phase II and III treatment plants will be discharged to Old River.

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 (CWC). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC.

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). This action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of Division 13 of the Public Resources Code in accordance with Section 13389 of the CWC.

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), 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 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 numeric water quality objectives have not been established for a pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA Section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed State criterion or policy interpreting the State's narrative criterion, supplemented with other relevant information, as provided in 40 CFR Section 122.44(d)(1)(vi).

H. Water Quality Control Plans. The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition (revised September 2004), 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. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which establishes State Policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to Old River are as follows:

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	**Old River**	Existing: Municipal and domestic supply (MUN), agricultural irrigation and stock watering (AGR), industrial process water supply (PROC), industrial service supply (IND), water contact recreation (REC-1), other non-contact water recreation (REC-2), warm freshwater aquatic habitat (WARM), cold freshwater aquatic habitat (COLD), warm and cold fish migration habitat (MIGR), warm spawning habitat, wildlife habitat (WILD), and navigation (NAV). Intermittent: None Potential: None

The Basin Plan includes a list of Water Quality Limited Segments (WQLSs), which are defined as "…*those Sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources (40 CFR 130, et seq.).*" The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to WQLSs. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." The listing for the western portion Sacramento-San Joaquin Delta waterways includes: diazinon and chlorpyrifos, organo-chlorine Group A pesticides, DDT, mercury, electrical conductivity, and unknown toxicity. The listing for Old River between the San Joaquin River and the Delta-Mendota Canal also includes dissolved oxygen deficiencies.

The State Water Board adopted a Water Quality Control Plan for Control of

Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for surface waters.

Requirements of this Order specifically implement the applicable *Water Quality Control Plans*.

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

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

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 September 25, 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 May 18, 2010) to establish and comply with CTR criterion-based effluent limitations. However, the Discharger is considered a "New Discharger", under the SIP, because it commenced construction of its Phase I WWTP and Phase II WWTP expansions after the effective date of the SIP. Therefore, compliance schedules for CTR constituents cannot be allowed in this Order.

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

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 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 requirements include some limitations that are more stringent than required by the CWA. Specifically, this Order includes effluent limitations for BOD, TSS, turbidity and pathogens organisms 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.

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 May 18, 2000. All beneficial uses and water quality

objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "*applicable water quality standards for purposes of the* [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. Antidegradation Policy. Section 131.12 of 40 CFR requires that 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 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution 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. As discussed in detail in the Fact Sheet (Attachment F) the permitted discharge is consistent with the antidegradation provision of 40 CFR Section 131.12 and State Water Board Resolution 68-16.

O. Anti-Backsliding Requirements. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR 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 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement federal and State requirements. This MRP is provided in Attachment E.

Q. Standard and Special Provisions. Standard Provisions, which in accordance with 40 CFR Sections 122.41and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D. 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 (Attachment F).

R. 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 (Attachment F) of this Order.

S. 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 (Attachment F) of this Order.

III. DISCHARGE PROHIBITIONS

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

B. The by-pass or overflow of untreated wastewater or wastes to surface waters or surface water drainage courses is prohibited, except as allowed by Provision I.G. and I.H. of Attachment D, Federal Standard Provisions.

C. Neither the discharge nor its treatment shall create a nuisance or pollution as defined in CWC Section 13050.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001 (Old River)

1. Final Effluent Limitations

Effective immediately, the Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location M-001 as described in the MRP (Attachment E):

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 1:

Table 1: Final Effluent Limitations

Parameter	Units	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
Oil and Grease	mg/L	10		15		
Aluminum	μg/L	63	--	159	--	--
Iron (total recoverable)	μg/L	--	--	300	--	--
Bis(2-ethylhexyl)phthalate	μg/L	1.8	--	3.6	--	--
Bromoform	μg/L	4.3	--	8.6	--	--
Cyanide	μg/L	4.1	--	8.9	--	
Dichlorobromomethane	μg/L	0.56	--	1.1	--	
Dibromochloromethane	μg/L	0.41	--	0.82	--	--
Group A Pesticides	μg/L	--	--	--	--	ND
Total Trihalomethanes	μg/L	80	--	--	--	--

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. Total Residual Chlorine: Effluent total residual chlorine shall not exceed the following:

i. 0.01 mg/L as a four-day average;
ii. 0.02 mg/L as a one-hour average; and

d. Turbidity: Effluent turbidity shall not exceed the following:

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

e. Total Coliform Organisms: Effluent total coliform organisms concentrations shall not exceed the following:

i. 2.2 MPN/100 mL as a seven-day median based upon the last seven days;
ii. 23 MPN/100 mL more than once in any 30-day period; and
iii. 240 MPN/100 mL at any time.

f. Average Dry Weather Flow. The average dry weather discharge shall not exceed 3.0 million gallons per day.

g. Mercury: The total mass discharge of total mercury shall not exceed 0.005 pounds/month. This interim performance-based limitation shall be in effect until the Regional Water Board establishes final effluent limitations after adoption of the final mercury Delta TMDL.

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

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

i. Temperature: The maximum temperature of the discharge shall not exceed the natural receiving water temperature by more than 20°F.

j. Dissolved Oxygen (DO). The daily average effluent DO concentration shall not be less than 5.0 mg/L.

k. Electrical Conductivity. The electrical conductivity in the discharge shall not exceed a monthly average of 700 µmhos/cm (April 1 to August 31) and a monthly average of 1000 µmhos/cm (September 1 to March 31), unless:

1) The Discharger develops and implements a salinity source control program as approved by the Executive Officer that will identify and implement measures to reduce salinity in discharges from residential, commercial, industrial and infiltration sources in an effort to meet the interim salinity goal of a maximum 500 umhos/cm electrical conductivity increase over the weighted average electrical conductivity of the MHCSD's water supply; and

2) When notified by the Executive Officer, the Discharger participates financially in the development of the Central Valley Salinity Management Plan.

Failure to meet conditions 1) and 2), above, shall result in the final effluent limitation becoming effective.

2. Final Effluent Limitations (3 mgd)

Effective immediately and until compliance with Special Provisions VI.C.4.a., the Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location M-001 as described in the MRP (Attachment E):

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 2:

Table 2: Final Effluent Limitations (3 mgd)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD 5-day 20°C	mg/L	10	15	20	--	--
	lbs/day[1]	250	375	500	--	--
Total Suspended Solids	mg/L	10	15	20	--	--
	lbs/day[1]	250	375	500	--	--
Ammonia (as N)	mg/L	1.0	--	2.1	--	
	lbs/day[1]	24	--	53	--	--
Nitrate (as N)	mg/L	10	--	--	--	--
	lbs/day[1]	250	--	--	--	--
Nitrite (as N)	mg/L	1	--	--	--	--
	lbs/day[1]	25	--	--	--	--

1 Based on a design treatment capacity of 3.0 mgd (see Section VII.E. for procedures on compliance determination).

b. Average Dry Weather Flow. The average dry weather discharge shall not exceed 3.0 million gallons per day.

3. Final Effluent Limitations (5.4 mgd)

Effective upon compliance with Special Provisions VI.C.4.a. the permitted Average Dry Weather Flow is increased to 5.4 mgd. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location M-001 as described in the MRP (Attachment E)**:**

a. The Discharger shall maintain compliance with the effluent limitations specified in Table 3:

Table 3: Final Effluent Limitations (5.4 mgd)

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
BOD 5-day 20°C[8]	mg/L	10	15	20	--	--
	lbs/day[1]	450	675	900	--	--
Total Suspended Solids[8]	mg/L	10	15	20	--	--
	lbs/day[1]	450	675	900	--	--
Ammonia (as N)	mg/L	1.0	--	2.1	--	
	lbs/day[1]	45	--	95	--	--
Nitrate (as N)	mg/L	10	--	--	--	--
	lbs/day[1]	450	--	--	--	--
Nitrite (as N)	mg/L	1	--	--	--	--
	lbs/day[1]	45	--	--	--	--

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
[1] Based on a design treatment capacity of 5.4 mgd (see Section VII.E. for procedures on compliance determination)..						

b. Average Dry Weather Flow. The average dry weather discharge shall not exceed 5.4 million gallons per day.

4. Interim Effluent Limitations—Discharge Point 001

a. Effective immediately, the discharge of treated effluent shall maintain compliance with the effluent limitations for electrical conductivity specified in Table 4 at Discharge Point 001, with compliance measured at Monitoring Location M-001 as described in the attached Monitoring and Reporting Program (Attachment E, Section IV).

Table 4: Interim Effluent Limitations for Electrical Conductivity

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Electrical Conductivity (25º C)	µmhos/cm	1406	--	--	--	--

b. Effective immediately and ending on April 30, 2012, the discharge of treated effluent shall maintain compliance with the effluent limitations for aluminum specified in Table 5 at Discharge Point 001, with compliance measured at Monitoring Location M-001 as described in the attached Monitoring and Reporting Program (Attachment E). These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters during the time period indicated in this Order.

Table 5: Interim Effluent Limitations for Aluminum

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Aluminum	µg/L	--	--	567	--	

B. Land Discharge Specifications – Not Applicable

C. Reclamation Specifications – Not Applicable

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 Old River:

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

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

3. **Discoloration**. Discoloration that causes nuisance or adversely affects beneficial uses.

4. **Dissolved Oxygen.** Concentrations of dissolved oxygen to fall below 5 mg/L.

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

6. **Oils and Greases**. 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.

7. **pH.** The ambient pH to be depressed below 6.5, nor raised above 8.5, nor changes in normal ambient pH levels to be exceeded by more than 0.5 units as a 30-day average.

8. **Pesticides**:

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

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

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

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

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

9. Radioactivity:

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

b. Radionuclides to be present in excess of the maximum contaminant levels specified in Table 4 (MCL Radioactivity) of Section 64443 of Title 22 of the California Code of Regulations.

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

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

12. Taste and Odor. Taste or odor-producing substances in concentrations that cause nuisance, adversely affect beneficial uses, or impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to domestic or municipal water supplies.

13. Temperature.

a. The creation of a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-Sectional area of the river channel at any point.

b. A surface temperature rise greater than 4°F above the natural temperature of the receiving water at any time or place.

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

B. Groundwater Limitations—Not Applicable

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 14.

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:

i. **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.

ii. **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.

iii. **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 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, and adequate public notification to downstream water agencies or others who might contact the non-complying discharge.

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.

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 that 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 **January 31**. 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 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.

n. 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.

o. 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.

p. 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 Requirements

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

C. Special Provisions

1. Reopener Provisions

a. Conditions that necessitate a major modification of a permit are described in 40 CFR 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.

b. 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.

c. Effluent Recycling. If the Discharger proposes effluent recycling, this Order may be reopened and may be revised as appropriate.

d. Pollution Prevention. This Order requires the Discharger prepare pollution prevention plans following CWC section 13263.3(d)(3) for mercury, aluminum, and salinity. 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.

e. Whole Effluent Toxicity. As a result of a Toxicity Reduction Evaluation (TRE), this Order may be reopened to include a chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity effluent limitation based on that objective.

f. Dilution Credits. No dilution has been granted in this Order, thus end-of-pipe effluent limitations for all constituents are required. As discussed in the Fact Sheet, Section IV.C.2.b., the Discharger has not provided adequate information

for the allowance of dilution credits, most importantly, real-time flow monitoring data in the vicinity of the discharge. Should a real-time flow monitoring station be installed in the vicinity of the discharge, and if real-time flow monitoring data from the station and supporting mathematical modeling analysis demonstrates that sufficient dilution flows are available in Old River, this Order may be reopened to allow dilution credits based on the real-time flow monitoring data.

g. **Priority Pollutants.** Operation of the Phase II WWTF will likely result in changes in effluent quality. Based upon a review of sampling results for pollutants after commencement of Phase II WWTF operation, this Order may be reopened to modify effluent limitations and requirements for these constituents.

h. **Central Valley Drinking Water Policy.** If water quality objectives for organic carbon, nutrients, salinity, bromide, and/or pathogens are adopted to protect drinking water supplies in the Central Valley, this Order may be reopened and modified to include appropriate effluent limitations, as necessary, to require compliance with these objectives.

i. **NMFS Reasonable and Prudent Measures.** On September 1, 2006, the National Marine Fisheries Service (NMFS) issued a biological opinion in accordance with section 7 of the Endangered Species Act for the construction and operation of the outfall to Old River from the Mountain House Wastewater Treatment Plant (MHWWTP). NMFS predicts in its biological opinion that the project will result in the incidental take of listed species as a result of exposure to chronic, sublethal concentrations of toxic compounds discharged from the MHWWTP and that reasonable and prudent measures are necessary and appropriate to minimize the incidental take of listed species. This Order may be reopened should the measures required by NMFS result in the need for new or revised effluent limitations or requirements.

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, if applicable, 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 shall 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 > **1 TUc** (where TUc = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE.

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. Temperature Study. The Discharger shall submit to the Regional Water Board a technical report within six months of the discharge to surface waters exceeding 1.25 mgd as a monthly average flow. The technical report shall provide evidence that the discharge is in full compliance with the Thermal Plan requirements (Effluent Limitation IV.A.1.i, and Receiving Water Limitation V.A.13.), and that the discharge will remain in full compliance when average dry weather flows reach 5.4 mgd. If there is reasonable potential to cause or contribute to an exceedance of a water quality objective for temperature, the Discharger shall submit a corrective action plan and implementation time schedule for Regional Water Board approval.

c. Best Practicable Treatment or Control (BPTC) of Salinity. The Discharger shall submit to the Regional Water Board for approval by the Executive Officer, a work plan, including a time schedule for a comprehensive technical evaluation of the Facility's waste treatment and control of salinity, to determine BPTC of its discharge to Old River, to meet the requirements of State Water Board

[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.

Resolution 68-16. The technical report describing the work plan and schedule shall contain a preliminary evaluation and propose a time schedule for completing the comprehensive technical evaluation. To comply with Resolution 68-16, the treatment or control of discharges of waste to waters of the state must be sufficient to provide the minimum degradation of such waters that is feasible, and consistent with the maximum benefit to the people of the State, but in no case can the discharge cause the exceedance of applicable water quality objectives.

Following completion of the evaluation, the Discharger shall submit to the Regional Water Board a technical report describing the evaluation's results and critiquing the treatment facility with respect to BPTC. Where deficiencies are documented, the technical report shall provide recommendations for necessary modifications (e.g., new or revised salinity source control measures, facility component upgrade and retrofit) to achieve BPTC and identify the source(s) of funding and proposed schedule for modifications. The schedule shall be as short as practicable. 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 Order adoption
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 over the past reporting year	To be submitted in accordance with the MRP (Attachment E, Section X.D.1.)

3. Best Management Practices and Pollution Prevention

a. 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.d. 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 one (1) year 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.).

b. **Pollution Prevention Plan for Salinity.** The Discharger shall prepare and implement a pollution prevention plan for salinity in accordance with CWC Section 13263.3(d)(3) to reduce the salinity of its discharge. The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet, Attachment F, Section VII.B.3.d. 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.).

c. **Salinity Reduction Goal.** The Discharger shall provide to the Regional Water Board annual reports demonstrating reasonable progress in the reduction of salinity in its discharge to Old River. The Regional Water Board finds that a monthly average salinity of 1,000 µmhos/cm as electrical conductivity (EC) is a reasonable intermediate goal that can be achieved in this permit term. The annual reports shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).

4. Compliance Schedules

a. **Discharge Flow Expansion (Phase III Improvements).** The Discharger has requested to be permitted to expand discharge flows up to 5.4 mgd to Old River. The permitted discharge flow of 5.4 mgd to Old River is subject to compliance with the following conditions:

i. **Facility Improvements.** The Discharger shall have completed construction and startup of the Phase III WWTF, as identified in the Fact Sheet II.A. and shall provide evidence, certified by the plant design engineer, that the plant is operating properly.

ii. **Effluent Limitation Compliance.** The discharge shall demonstrate compliance with Final Effluent Limitations IV.A.

iii. **Request for Increase.** The Discharger shall submit a request for an increase in the permitted discharge flow rate, which demonstrates compliance with items i. and ii., above. The increase in the permitted discharge flow rate shall not be effective until the Executive Officer verifies compliance with Special Provisions VI.C.4.b. and approves the Discharger's request.

b. Compliance Schedule for Final Effluent Limitations for Aluminum.
By April 30, 2012, The Discharger shall comply with the final effluent limitations for aluminum. The Discharger shall comply with the following compliance schedule.

Task	Date Due
Submit Method of Compliance Work plan/schedule	**Within 6 months of the effective date of the permit**
Submit Pollution Prevention plan (PPP)[1] pursuant to CWC section 13263.3	**Within 9 months of the effective date of the permit**
Full compliance	**April 30, 2012**

Progress reports[2] shall be submitted in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.).

---

[1] The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet, Attachment F, Section VII.B.3.d.

[2] The progress reports shall detail what steps have been implemented towards achieving compliance with waste discharge requirements, including studies, construction progress, evaluation of measures implemented, and recommendations for additional measures as necessary to achieve full compliance by the final date.

5. Construction, Operation and Maintenance Specifications

a. Emergency Storage 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; and

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.

6. Special Provisions for Municipal Facilities (POTWs Only)

a. 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 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.

b. Certified Operators.

i. The Discharger shall provide certified wastewater treatment plant operators in accordance with Title 23 of the California Code of Regulations, Division 3, Chapter 26.

c. Pretreatment Requirements.

i. 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).

ii. 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, nonbiodegradable 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.

iii. The Discharger shall implement, as more completely set forth in 40 CFR Part 403, the legal authorities, programs, and controls necessary to ensure that industrial discharges do not introduce pollutants into the sewerage system that, either alone or in conjunction 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.

iv. Within one year of adoption of this Order, the Discharger shall submit, for Regional Water Board approval, a pretreatment program that demonstrates it has complied with Provision VI.C.6.c.i, ii, and iii, above.

v. The Discharger shall implement its approved pretreatment program and the program shall be an enforceable condition of this permit. If the Discharger fails to perform the pretreatment functions, the Regional Water Quality Control Board (Regional Water Board), the State Water Resources Control Board (State Water Board) or the U.S. Environmental Protection Agency (USEPA) may take enforcement actions against the Discharger as authorized by the Clean Water Act.

d. Collection System. On May 2, 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.

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)].

7. Other Special Provisions

a. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of, or clearance from the State Water Resources Control Board (Division of Water Rights).

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 this office.

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 paragraph of Standard Provision 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.

c. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition or 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)].

VII. COMPLIANCE DETERMINATION

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

A. BOD and TSS Effluent Limitations

Compliance with the final effluent limitations for BOD and TSS required in Sections IV.A.1.a., and IV.A.1.b. shall be ascertained by 24-hour flow proportioned composite samples.

B. Aluminum Effluent Limitations

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.

C. Mercury Mass Loading Limitation

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.

D. Average Dry Weather Flow.

Average Dry Weather Flow (ADWF) represents the daily average flow when groundwater is at or near normal and runoff is not occurring. Compliance with the ADWF effluent limitations will be measured at times when groundwater is at or near normal and runoff is not occurring.

E. Effluent Mass Limitations.

The effluent mass limitations contained in Final Effluent Limitations IV.A.2.a. and IV.A.3.a. are based on the permitted average daily discharge flow (Final Effluent Limitations IV.A.2.b. and IV.A.3.b., respectively), and calculated as follows:

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

If the effluent flow exceeds the permitted average daily discharge flow due to wet-weather storm events or when groundwater is above normal and runoff is occurring, the effluent mass limitations contained in Final Effluent Limitations IV.A.2.a. and IV.A.3.a. shall not apply. Under these specific circumstances the effluent mass limitations shall be recalculated based on the wet weather effluent flow rate rather than the permitted average daily discharge flow.

F. Group A Pesticides Effluent Limitation.

The non-detectable (ND) limitation applies to each individual pesticide. No individual pesticide may be present in the discharge at detectable concentrations. The Discharger shall use USEPA standard analytical techniques with a minimum acceptable reporting level as indicated in appendix 4 of the SIP.

ATTACHMENT A – DEFINITIONS

Acute Toxic Unit (TU_a): the reciprocal of the effluent concentration that causes 50 percent of the organisms to die in an acute toxicity test ($TU_a = 100/LC_{50}$) (see LC_{50}).

Average Four-Day Effluent Limitation: the highest allowable average of daily discharges over a four-day period, calculated as the sum of all daily discharges measured during a four-day period divided by the number of daily discharges measured during that four-day period.

Average Hourly Effluent Limitation: the highest allowable average of discharges over a one-hour period, calculated as the sum of all discharges measured during that one-hour period divided by the number of discharges measured during that one-hour period.

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".

Biosolids: sludge that has been treated and tested and shown to be capable of being beneficially and legally used pursuant to federal and state regulations as a soil amendment for agriculture, silviculture, horticulture, and land reclamation activities.

Chronic Toxic Unit (TU_c): the reciprocal of the effluent concentration that causes no observable effect on the test organisms in a chronic toxicity test ($TU_c = 100/NOEC$) (see NOEC)

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 one 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.

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).

LC_{50}, Lethal Concentration, 50 percent: the toxic or effluent concentration that would cause death in 50 percent of the test organisms over a specified period of time.

Maximum Daily Effluent Limitation (MDEL): the highest allowable daily discharge of a pollutant.

NOEC, No Observed Effect Concentration: the highest tested concentration of an effluent or test sample whose effect is not different from the control effect, according to the statistical test used (see LOEC). The NOEC is usually the highest tested concentration of an effluent or toxic that causes no observable effects on the test organisms (i.e. the highest concentration of toxicity at which the values for the observed responses do not statistically differ from the controls).

Percent Removal: 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 (85 percent removal).

Residual Sludge: sludge that will not be subject to further treatment at the Facility.

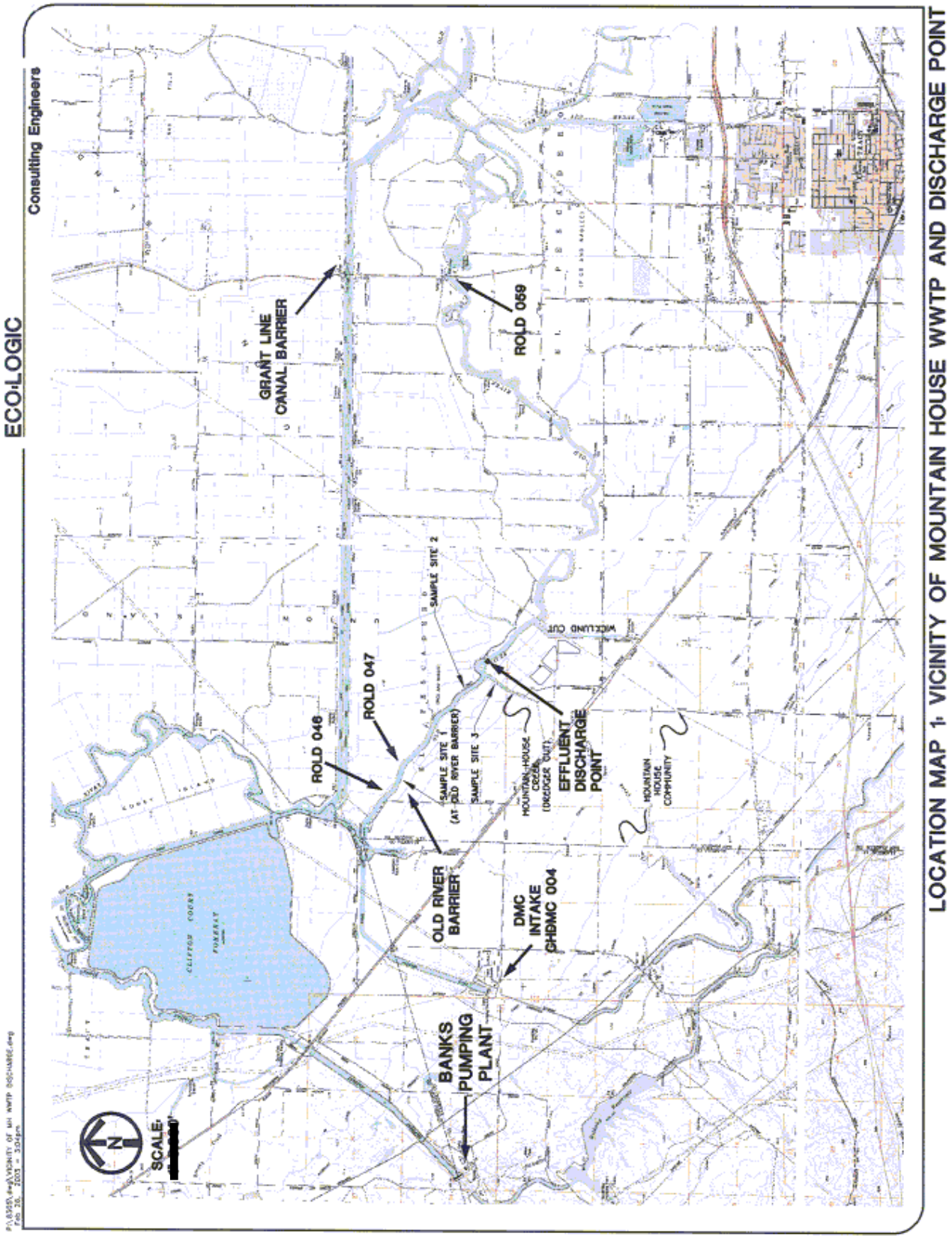
Sludge: the solid, semisolid, and liquid residues removed during primary, secondary, or advanced wastewater treatment processes.

Solid Waste: grit and screening material generated during preliminary treatment.

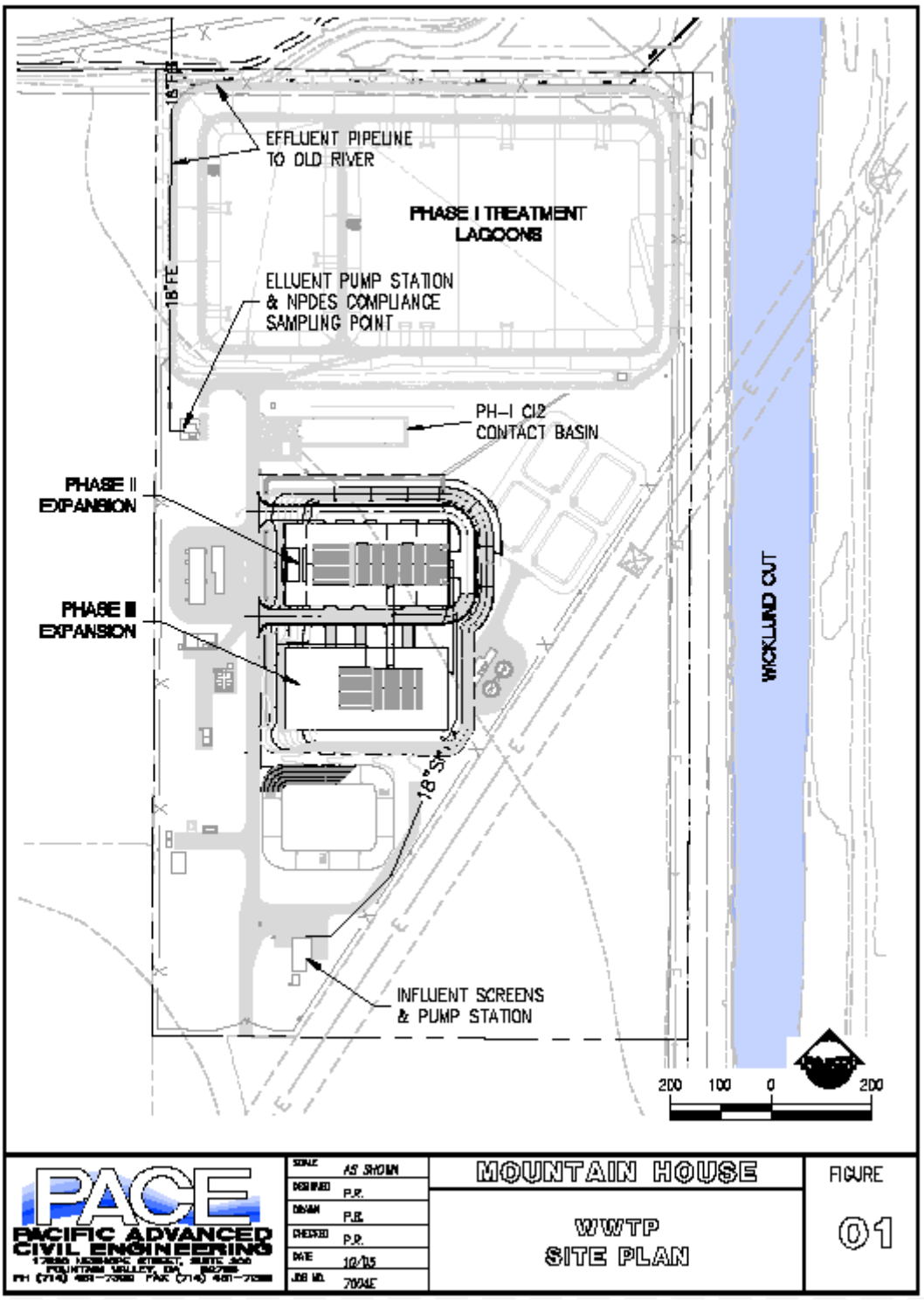
Toxicity Test: the procedure using living organisms to determine whether a chemical or an effluent is toxic. A toxicity test measures the degree of the effect of a specific chemical or effluent on exposed test organisms.

Toxic Unit: the measure of toxicity in an effluent as determined by the acute toxic units (TU_a) or chronic toxic units (TU_c) measured. The larger the TU, the greater the toxicity.

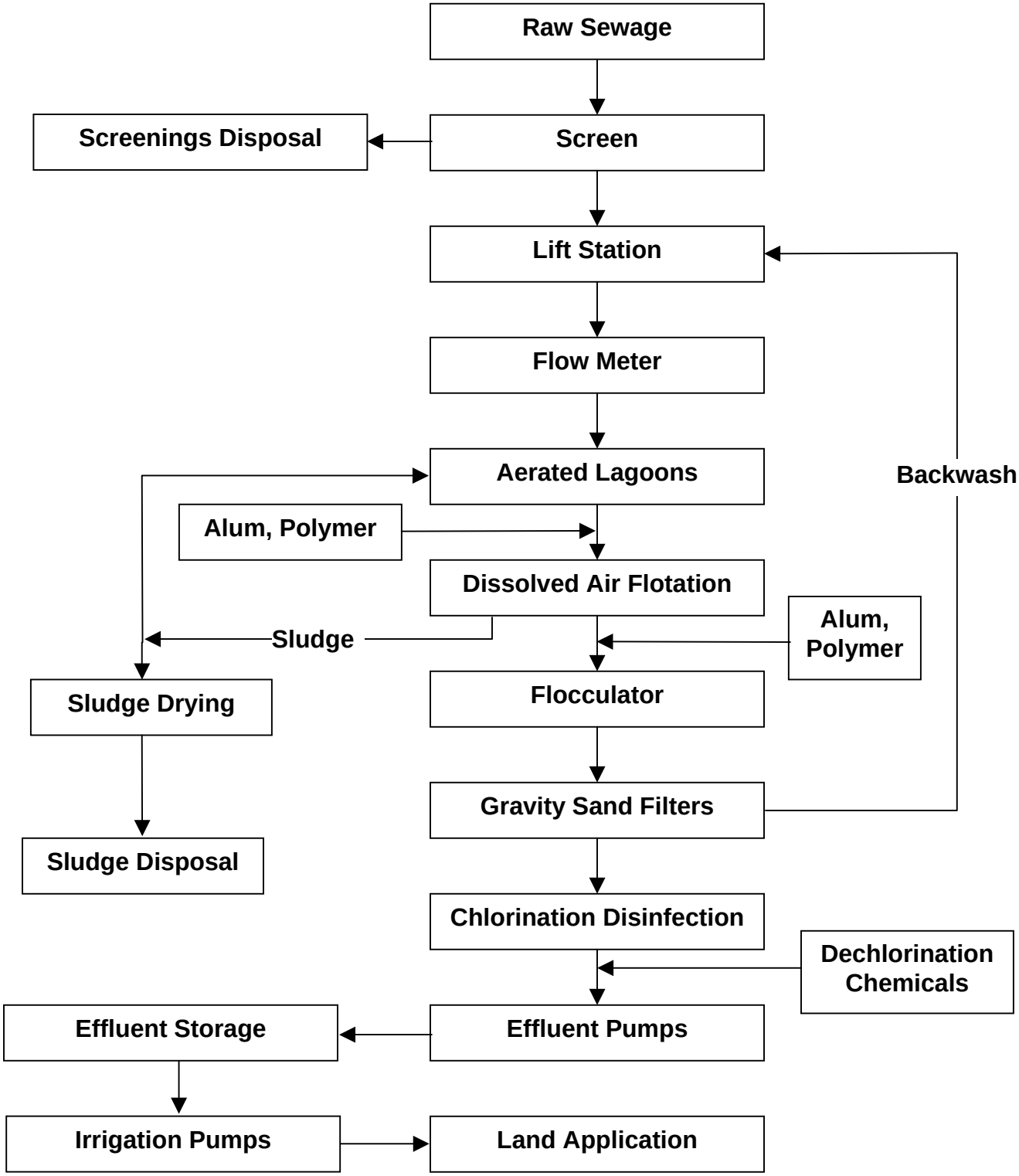
ATTACHMENT B – TOPOGRAPHIC MAP



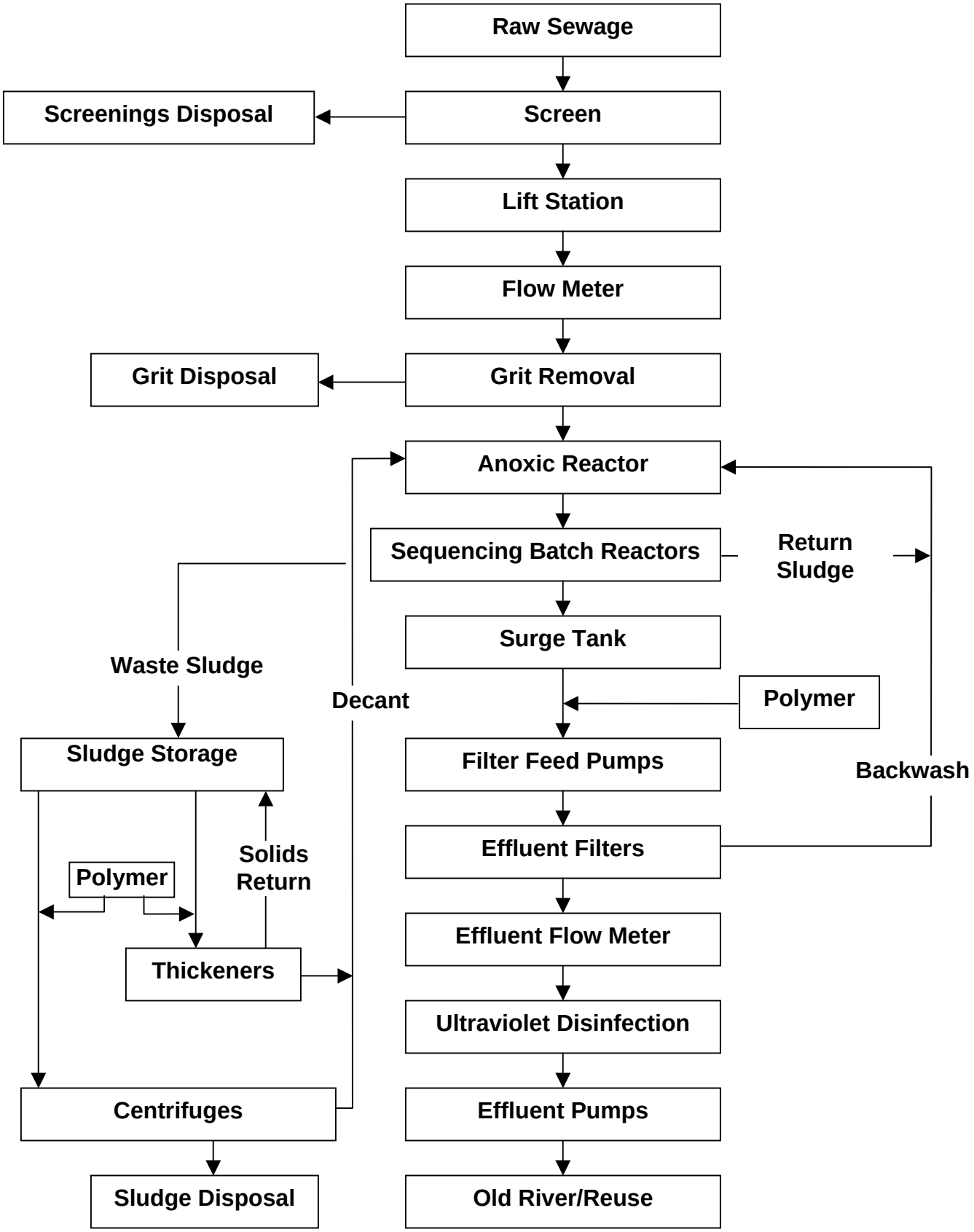
ATTACHMENT C—SITE MAP AND FLOW SCHEMATICS



MOUNTAIN HOUSE – PHASE I WWTF



Mountain House –Phase II & III WWTF



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 (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, modification, or denial of a permit renewal application [*40 CFR Section 122.41(a)*].

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

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

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

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

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order [*40 CFR Section122.41(i)(2)*];

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

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

G. Bypass

1. Definitions

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

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

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

3. Prohibition of bypass – Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless [*40 CFR Section 122.41(m)(4)(i)*]:

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

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

    c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below [*40 CFR Section 122.41(m)(4)(C)*].

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

5. Notice

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

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

H. Upset

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

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

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

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

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

   b. The permitted facility was, at the time, being properly operated [*40 CFR Section 122.41(n)(3)(i)*];

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit [*40 CFR Section 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 CWC [*40 CFR Section 122.41(l)(3)*] [*40 CFR Section 122.61*].

III. STANDARD PROVISIONS – MONITORING

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

B. Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order [*40 CFR Section 122.41(j)(4)*] [*40 CFR Section 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 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time [*40 CFR Section 122.41(j)(2)*].

B. Records of monitoring information shall include:

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

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

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

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

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

6. The results of such analyses [*40 CFR Section 122.41(j)(3)(vi)*].

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

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

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

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

2. All permit applications shall be signed as follows:

   a. For a corporation: By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures [*40 CFR Section 122.22(a)(1)*];

   b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively [*40 CFR Section 122.22(a)(2)*]; or

   c. For a municipality, State, federal, or other public agency: by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (*e.g.*, Regional Administrators of USEPA) [*40 CFR Section 122.22(a)(3)*].

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

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

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

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

4. If an authorization under Standard Provisions Reporting V.B.3, above paragraph (3.) of this provision 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 must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative [40 CFR Section 122.22(c)].

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

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

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order [*40 CFR Section 122.41(l)(4)*].

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

reporting results of monitoring of sludge use or disposal practices [*40 CFR Section 122.41(l)(4)(i)*].

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

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

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date [*40 CFR Section 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 CFR Section 122.41(l)(6)(i)*].

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

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

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

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

F. Planned Changes

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR Section 122.29(b) [*40 CFR Section 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 which are not subject to effluent limitations in this Order. [*40 CFR Section 122.41(l)(1)(ii)*].

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

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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.

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

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

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

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

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

Attachment E – Monitoring and Reporting Program – Table of Contents

Attachment E – Monitoring and Reporting Program (MRP) E-1
I. General Monitoring Provisions E-1
II. Monitoring Locations E-1
III. Influent Monitoring Requirements E-2
A. Monitoring Location M-INF E-2
IV. Effluent Monitoring Requirements E-2
A. Monitoring Location M-001 ..... E-2
V. Whole Effluent Toxicity Testing Requirements E-4
A. Acute Toxicity Testing. E-4
B. Chronic Toxicity Testing. E-5
C. WET Testing Notification Requirements E-6
D. WET Testing Reporting Requirements E-6
VI. Land Discharge Monitoring Requirements—NOT applicable E-7
A. Pond Monitoring—Monitoring Location –Not Applicable E-7
VII. Reclamation Monitoring Requirements E-7
A. Monitoring Location—Effluent Storage Lagoons—Not Applicable E-7
VIII. Receiving Water Monitoring Requirements – Surface Water E-8
A. Surface Water Monitoring E-8
B. Monitoring Location—Groundwater Monitoring Wells—Not Applicable E-9
IX. Other Monitoring Requirements E-9
A. Water Supply Monitoring—Monitoring Location S-001 ..... E-9
B. Biosolids Monitoring—Monitoring Location B-001 ..... E-9
X. Reporting Requirements E-10
A. General Monitoring and Reporting Requirements E-10
B. Self Monitoring Reports (SMRs) E-12
C. Discharge Monitoring Reports (DMRs) E-13
D. Other Reports E-13

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (CFR) at 40 CFR Section 122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC Sections 13267 and 13383 also authorize the Regional Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and California regulations. This MRP is effective upon compliance with Provision VI.C.4.a.

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 non-certified 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.

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:

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
Influent	M-INF	Domestic Influent to Facility
Effluent	M-001	Effluent discharged to Outfall 001
	R-001	Old River, Midstream, 37° 48' 20"N, 121° 32' 03" W
	R-002	Old River, Midstream, at Outfall 001
	R-003	Old River, Midstream, 37° 47' 05"N, 121° 29' 57" W
	R-004	Wicklund Cut, midstream, Bethany Road, 37° 46' 50"N, 121° 31' 03" W
P-001	P-001	Effluent Emergency Storage Ponds
B-001	B-001	Biosolids
S-001	S-001	Municipal Water Supply

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-INF

1. Samples shall be collected at approximately the same time as effluent samples and shall be representative of the influent for the period sampled. The Discharger shall monitor influent to the WWTF at M-INF as follows:

Parameter	Units	Sample Type	Minimum Sampling Frequency
5-Day BOD_5	mg/L, lbs/day	24-hr. Composite[1]	1/day
Total Suspended Solids	mg/L, lbs/day	24-hr. Composite[1]	1/day
pH	standard units	Grab	1/day
Flow	mgd	Meter	Continuous
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/week
TDS	mg/L	Grab	1/week
Mercury, methyl	µg/L	Grab[2]	1/month

[1] 24-hr flow proportioned composite

[2] Unfiltered methylmercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*, for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by U.S. EPA Method 1630 (Revision E) with a method detection limit of 0.02 ng/L.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-001

1. Effluent samples shall be collected downstream from the last connection through which wastes can be admitted into the outfall, following the last unit process. Effluent samples should be representative of the volume and quality of the discharge. Time of collection of samples shall be recorded. The Discharger shall monitor WWTF effluent at M-001 as follows:

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	
Total Residual Chlorine[1]	mg/L	Meter	Continuous	
Temperature[2]	°F	Meter	Continuous	
BOD 5-day 20°C	mg/L	24-hr Composite[3]	1/day	
Total Suspended Solids	mg/L	24-hr Composite[3]	1/day	
pH	Standard Units	Meter	Continuous	
Total Coliform Organisms	MPN/100 mL	Grab	1/day	
Settleable Solids	mL/L	Grab	1/day	
Turbidity	NTU	Meter	Continuous	
Dissolved Oxygen	mg/L	Meter	Continuous	
Ammonia (as N) [3, 4]	mg/L	Grab	1/week	
Nitrate (as N)	mg/L	Grab	1/week	
Nitrite (as N)	mg/L	Grab	1/week	
Total Kjeldahl Nitrogen (as N)	mg/L	Grab	1/week	
Total Organic Carbon	mg/L	Grab	1/month	
Total Phosphorus	mg/L	Grab	1/month	
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/month	
Total Dissolved Solids	mg/L	Grab	1/month	
Aluminum, Total[5]	µg/L	24-hr Composite[3]	1/month	
Iron, Total	µg/L	24-hr Composite[3]	1/month	
Bis(2-ethylhexyl)phthalate[6]	µg/L	Grab	1/month	
Bromoform[6]	µg/L	Grab	1/month	
Chloroform[6]	µg/L	Grab	1/month	
Aldrin	µg/L	Grab	1/month	
Cyanide	µg/L	Grab	1/month	
Heptachlor	µg/L	Grab	1/month	
Dichlorobromomethane[6]	µg/L	Grab	1/month	
Dibromochloromethane[6]	µg/L	Grab	1/month	
Mercury, Total	µg/L	Grab	1/month	Method 1631
Mercury, methyl	µg/L	Grab	1/month	Method 1630[10]
Standard Minerals[7]	mg/L	24-hr Composite[3]	1/year	
Priority Pollutants[6, 8, 9]	µg/L	Grab	1/year	

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

[1] Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L. Chlorine residual monitoring shall be required only if chlorine is in use at the facility. If no chlorine is in use, monitoring report shall state "Not Chlorinating."
[2] Effluent Temperature monitoring shall be at the Outfall location.
[3] 24-hour flow proportioned composite
[4] Concurrent with biotoxicity monitoring
[5] Report as total.
[6] 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).
[7] Standard minerals shall include all major cations and anions and include verification that the analysis is complete (i.e., cation/anion balance).Concurrent with receiving surface water sampling.
[8] Quarterly for first year of Phase II WWTF operation.
[9] Inorganic and semi-volatile organic pollutants shall be 24-hour composite samples.
[10] Unfiltered methylmercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*, for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by U.S. EPA Method 1630 (Revision E) with a method detection limit of 0.02 ng/L.

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, 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 monthly acute toxicity testing, concurrent with effluent ammonia sampling.

2. *Sample Types* – For static non-renewal and static renewal testing, the samples shall be 24-hour, flow-proportional composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location M-001.

3. *Test Species* – Test species shall be larval stage (0 to 14 days old) rainbow trout (*Oncorhynchus mykiss*) *or* fathead minnows (*Pimephales promelas*).

4. *Methods* – The acute toxicity testing shall be conducted in accordance with *EPA-821-R-02-012, Fifth Edition*, or later amendment with Executive Officer

approval. Temperature, total residual chlorine, ammonia, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

5. Dilution Water The Discharger shall use laboratory water for sample dilution.

6. *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 seven (7) business 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 quarterly three-species, chronic toxicity testing.

2. *Sample Types* – Effluent samples shall be flow-proportional, 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location M-001. The receiving water control shall be a grab sample obtained from the R-001 and R-003 sampling locations.

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

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

a. The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);

b. The fathead minnow, *Pimephales promelas* (larval survival and growth test); and

c. The green alga, *Selenastrum capricornutum* (growth test).

5. *Methods* – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition,* EPA/821-R-02-013, October 2002, or later amendment with Executive Officer approval.

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 chronic toxicity testing shall be performed using the dilution series identified in Table E-1, below.

Table E-1
Chronic Toxicity Testing Dilution Series

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

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

   a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition*, EPA/821-R-02-013, October 2002 (Method Manual), and its subsequent amendments or revisions; or

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

C. WET Testing Notification Requirements

The Discharger shall notify the Regional Water Board within 24 hours after the receipt of test results exceeding the monitoring trigger during regular or accelerated monitoring, or an exceedance of the acute toxicity effluent limitation.

D. WET Testing Reporting Requirements

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

1. **Chronic WET Reporting.** Regular chronic toxicity monitoring results shall be reported to the Regional Water Board within 30 days following completion of the

test, and shall contain, at minimum:

a. The results expressed in TUc, measured as 100/NOEC, and also measured as $100/LC_{50}$, $100/EC_{25}$, $100/IC_{25}$, and $100/IC_{50}$, as appropriate.

b. The statistical methods used to calculate endpoints;

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

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

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

Additionally, the monthly discharger self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or 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—NOT APPLICABLE

A. Pond Monitoring—Monitoring Location –Not Applicable

VII. RECLAMATION MONITORING REQUIREMENTS

A. Monitoring Location—Effluent Storage Lagoons—Not Applicable

VIII. RECEIVING WATER MONITORING REQUIREMENTS – Surface Water

A. Surface Water Monitoring

1. The Discharger shall monitor Old River at R-001, R-002, R-003, and R-004 as follows:

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen[1]	mg/L	Grab	Weekly	
pH	Standard Units	Grab	Weekly	
Temperature[1]	°F (°C)	Grab	Weekly	
Electrical Conductivity @ 25°C[1]	µmhos/cm	Grab	Weekly	
Ammonia (as N)[2]	mg/L	Grab	Weekly	
Hardness as $CaCO_3$	mg/L	Grab	Monthly	
Mercury, total	ng/L	Grab	Monthly	Method 1631
Mercury, methyl	ng/L	Grab	Monthly	Method 1630[8]
Nitrate (as N)	mg/L	Grab	Monthly	
Nitrite (as N)	mg/L	Grab	Monthly	
Total Kjeldahl Nitrogen (as N)	mg/L	Grab	Monthly	
Total Organic Carbon	mg/L	Grab	Monthly	
Total Phosphorus	mg/L	Grab	Monthly	
Chloroform [3]	µg/L	Grab	Quarterly	
Standard Minerals[4]	mg/L	Grab	Annually	
Priority Pollutants[3, 5, 6]	µg/L	Grab	Annually	

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

2 Temperature and pH shall be determined at the time of sample collection.

3 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).

4 Standard minerals shall include all major cations and anions and include verification that the analysis is complete (i.e., cation/anion balance).

5 Concurrent with effluent sampling.

6 Sampling only required at R-001.

7 Unfiltered methylmercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*, for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by U.S. EPA Method 1630 (Revision E) with a method detection limit of 0.02 ng/L

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-00l through R-004. Attention shall be given to the presence or absence of:

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

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

B. Monitoring Location—Groundwater Monitoring Wells—Not Applicable

IX. OTHER MONITORING REQUIREMENTS

A. Water Supply Monitoring—Monitoring Location S-001

The Discharger shall monitor the Municipal Water Supply at S-001 as follows. A sampling station shall be established where a representative sample of the municipal water supply can be obtained. Municipal water supply samples shall be collected at approximately the same time as effluent samples.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Dissolved Solids	mg/L	Grab	Quarterly	
Electrical Conductivity	µmhos/cm	Grab	Quarterly	
Standard Minerals	mg/L	Grab	Annually	

[1] If the water supply is from more than one source, the monitoring report shall report the electrical conductivity and total dissolved solids results as a weighted average and include copies of supporting calculations.

[2] Standard minerals shall include all major cations and anions and include verification that the analysis is complete (*i.e.*, cation/anion balance).

B. Biosolids Monitoring—Monitoring Location B-001

A composite sample of biosolids shall be collected in accordance with USEPA's POTW Biosolids Sampling and Analysis Guidance Document, August 1989, (or most recent edition) and tested for the following constituents:

Constituent	Units	Sample Type	Frequency
Quantity	Dry Tons	--	Quarterly
Solids Content	% percentage	Composite	Quarterly
Disposal Location	--	--	Quarterly
Arsenic	mg/kg	Composite	Quarterly
Cadmium	mg/kg	Composite	Quarterly
Chromium	mg/kg	Composite	Quarterly
Copper	mg/kg	Composite	Quarterly
Lead	mg/kg	Composite	Quarterly
Mercury	mg/kg	Composite	Quarterly
Molybdenum	mg/kg	Composite	Quarterly
Nickel	mg/kg	Composite	Quarterly

Selenium	mg/kg	Composite	Quarterly
Zinc	mg/kg	Composite	Quarterly
Oil and Grease	mg/kg	Composite	Quarterly
Nitrogen	mg/kg	Composite	Quarterly
Ammonia	mg/kg	Composite	Quarterly
Nitrate	mg/kg	Composite	Quarterly
Total Kjeldahl Nitrogen	mg/kg	Composite	Quarterly
Fecal Coliform	mg/kg	Composite	See Footnote 1
Priority Pollutants	mg/kg	Composite	See Footnote 2

[1] The Discharger shall collect seven composite samples over a two week period each quarter, and analyze the samples for fecal coliform (report as MPN/gm total solids). Results for each sample shall be reported along with the geometric mean of the results.

[2] **Within 180 days of the effective date of this Order, and annually thereafter**, the Discharger shall submit 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 biosolids 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*". Other guidance is available in USEPA's POTW Biosolids Sampling and Analysis Guidance Document, August 1989 (or most recent edition).

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. Monitoring periods and reporting for all required monitoring shall commence upon start-up of the Phase II WWTF and shall be completed according to the following schedule:

Sampling Frequency	Monitoring Period	SMR Due Date
Continuous	All	First day of second calendar month following month of sampling
Hourly	Hourly	First day of second calendar month following month of sampling
Daily	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	First day of second calendar month following month of sampling
Weekly	Sunday through Saturday	First day of second calendar month following month of sampling
Monthly	1st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
Quarterly	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1

Sampling Frequency	Monitoring Period	SMR Due Date
Semi-annually	January 1 through June 30 July 1 through December 31	August 1 February 1
Yearly	January 1 through December 31	February 1

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

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

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

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

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

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

4. 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.

5. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the reported analytical result are readily discernible. The data shall be summarized in such a manner to clearly illustrate whether the discharge complies with waste discharge requirements. Monthly maximums, minimums, and averages shall be reported for each monitored constituent and parameter. Removal efficiencies (%) for biochemical oxygen demand and total suspended solids and all periodic averages and medians for which there are limitations shall also be calculated and reported.

6. 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.

7. 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.

8. 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.*"

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. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under Sections III through IX. Additionally, the Discharger shall report in the SMR the results of any special studies, acute and chronic toxicity testing, TRE/TIE, BMP, BPTC, and Pollution Prevention Plan required by Special Provisions – VI.C.2-VI.C.5 of this Order. The Discharger shall submit monthly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

3. The Discharger shall submit hard copy SMRs (with an original signature) when required by Section X.B.1 above in accordance with the following requirements:

   a. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

b. 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:

California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670

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 submit electronically 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:

State Water Resources Control Board
Discharge Monitoring Report Processing Center
Post Office Box 671
Sacramento, CA 95812

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

D. Other Reports

1. 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.

Special Provision	Reporting Requirements
Temperature Study	**Six months after** discharge to surface waters exceeds 1.25 mgd, average daily flow.
Pollution Prevention Plan for Mercury (Special Provisions VI.C.3.a.)	**June 1**, annually, after approval of work plan until final compliance
Pollution Prevention Plan for Salinity (Special Provisions VI.C.3.b.)	**June 1**, annually, after approval of work plan until final compliance
Compliance Schedule for Aluminum (Special Provisions VI.C.4.c.)	**June 1**, annually, until full compliance

2. **Biosolids Reporting Requirements**. Within 90 days of start-up of the Phase II WWTF and annually by January 31 thereafter, the Discharger shall submit:

   a. Certification of compliance with 40 CFR part 503;

   b. Annual sludge production in dry tons and percent solids;

   c. Quantitative results of chemical analyses for the priority pollutants listed in 40 CFR Section 122 Appendix D, Tables II and III (excluding total phenols);

   d. A schematic diagram showing sludge handling facilities and a solids flow diagram;

   e. Depth of application and drying time for sludge drying beds (if applicable); and

   f. A description of the disposal method(s) used at the WWTF, including the following information. If more than one method is used, include the percentage of annual sludge production disposed by each method.

      i. For **landfill disposal**, include (1) the Regional Water Board's WDR numbers that regulate the landfill(s) used, (2) the present classifications of the landfill(s) used, and (3) the names and locations of the receiving facility(ies).

      ii. For **land application,** include (1) location of the site(s), (2) the Regional Water Board's WDR numbers that regulate the site(s), (3) the application rate in lbs/year (specify wet or dry), and (4) subsequent uses of the land.

      iii. For **incineration**, include (1) name and location of the site(s) where sludge incineration occurs, (2) the Regional Water Board's WDR numbers that regulate the site(s), (3) the disposal method of the ash, and (4) the names and locations of facilities receiving ash (if applicable).

      iv. For **composting**, include (1) name and location of the site(s) where sludge composting occurs, and (2) the Regional Water Board's WDR

numbers that regulate the site(s).

3. **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 **February 28** 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.

      Biosolids 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 that 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 non-categorical 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 **within 21 days of the end of the quarter**. 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 must be submitted. The information required in the fourth quarter report shall be included as part of the annual report. This quarterly 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 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.

Duplicate signed copies of these 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

4. **Annual Operations Report**. By **February 1** 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 WWTF.

   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 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.

Attachment F – Fact Sheet – Table of Contents

Attachment F – Fact Sheet F-1
I. Permit Information F-1
II. Facility Description F-2
A. Description of Wastewater and Biosolids Treatment or Controls F-2
B. Discharge Points and Receiving Waters F-3
C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data F-3
D. Compliance Summary F-4
E. Planned Changes F-4
III. Applicable Plans, Policies, and Regulations F-4
A. Legal Authorities F-4
B. California Environmental Quality Act (CEQA) F-5
C. State and Federal Regulations, Policies, and Plans F-5
D. Impaired Water Bodies on CWA 303(d) List F-13
E. Other Plans, Policies, and Regulations F-14
IV. Rationale For Effluent Limitations and Discharge Specifications F-14
A. Discharge Prohibitions F-15
B. Technology-Based Effluent Limitations F-16
1. Scope and Authority. F-16
2. Applicable Technology-Based Effluent Limitations. F-16
C. Water Quality-Based Effluent Limitations (WQBELs) F-17
1. Scope and Authority F-17
2. Applicable Beneficial Uses and Water Quality Criteria and Objectives F-17
3. Determining the Need for WQBELs F-30
4. WQBEL Calculations F-52
5. Whole Effluent Toxicity (WET) F-59
D. Interim Effluent Limitations F-60
1. Electrical Conductivity (EC) and Aluminum. F-60
E. Land Discharge Specifications F-61
F. Reclamation Specifications (Not Applicable) F-61
V. Rationale for Receiving Water Limitations F-61
A. Surface Water F-61
B. Groundwater (Not Applicable) F-63
VI. Rationale for Monitoring and Reporting Requirements F-63
A. Influent Monitoring F-63
B. Effluent Monitoring F-63
C. Whole Effluent Toxicity Testing Requirements F-63
1. Acute Toxicity. F-64
2. Chronic Toxicity. F-64
3. Dilution Water F-64
D. Receiving Water Monitoring F-64
1. Surface Water F-64
2. Groundwater (Not Applicable) F-65
E. Other Monitoring Requirements F-65
1. Biosolids Monitoring F-65
2. Municipal Water Supply Monitoring. F-65
VII. Rationale for Provisions F-65

A. Standard Provisions F-65
B. Special Provisions F-65
1. Reopener Provisions F-65
2. Special Studies and Additional Monitoring Requirements F-67
3. Best Management Practices and Pollution Prevention F-71
4. Compliance Schedules F-72
5. Special Provisions for Municipal Facilities (POTWs Only) F-73
6. Other Special Provisions—None F-73
VIII. Public Participation F-73
A. Notification of Interested Parties F-74
B. Written Comments F-74
C. Public Hearing F-74
D. Waste Discharge Requirements Petitions F-74
E. Information and Copying F-75
F. Register of Interested Persons F-75
G. Additional Information F-75

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 1. FACILITY INFORMATION

WDID	5B391078003
Discharger	Mountain House Community Services District.
Name of Facility	Mountain House Wastewater Treatment Plant
Facility Address	Mountain House Community Services District 17300 West Bethany Road, Mountain House, CA 95391 San Joaquin County
Facility Contact, Title and Phone	Mr. Paul Sensibaugh, General Manager
Authorized Person to Sign and Submit Reports	Mr. Paul Sensibaugh, General Manager
Mailing Address	222 East Weber Avenue, Room 3, Stockton, CA 95202
Billing Address	SAME
Type of Facility	POTW
Major or Minor Facility	Major
Threat to Water Quality	Category 1
Complexity	Category A
Pretreatment Program	Required
Facility Permitted Flow[1]	3.0/5.4 mgd[1]
Facility Design Flow[1]	3.0/5.4 mgd[1]
Watershed	Sacramento-San Joaquin Delta
Receiving Water	Old River
Receiving Water Type	Sacramento-San Joaquin Delta

[1] Effective upon compliance with Provisions VI.C.4.a.ii, the design and permitted flow is 3.0 mgd for discharge to Old River. Effective upon compliance with Provisions VI.C.4.b.ii, the design and permitted flow is 5.4 mgd for discharge to Old River.

A. The Mountain House Wastewater Treatment Plant (hereafter Facility) treats primarily domestic, commercial, and light industrial, wastewater collected via the Mountain House Community Services District wastewater collection system. ECO Resources maintains the collection system and operates the wastewater treatment facilities under contract with Mountain House Community Services District.

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 wastewater discharge to Old River, a water of the United States, is currently regulated by Order 98-192, which was adopted on September 11, 1998 and expired on September 1, 2003. The terms of Order No. 98-192 automatically continued in effect after the permit expiration date. The Facility has never discharged to Old River.

The Facility discharge to land is currently regulated by Order 98-109, which was adopted on April 17, 1998.

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 February 20, 2003. On July 21, 2003, Order 98-192 was administratively extended.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

1. The Facility treats domestic wastewater collected via the Mountain House Community Services District (Mountain House) wastewater collection system.

2. The Discharger provides wastewater treatment and disposal services for residences and businesses.

3. The Mountain House Community Services District is a new residential, commercial, and industrial community being developed in western San Joaquin County, between Old River and Interstate 205 approximately three miles west of the City of Tracy. Mountain House, a proposed self-sufficient community, will accommodate all of the necessary services for up to 43,500 residents. San Joaquin County LAFCO has established Mountain House Community Services District to operate the treatment and disposal facilities.

The Facility is composed of Phase I, Phase II, and Phase III wastewater treatment plants (WWTF). The Phase I WWTF, which is designed only for land discharge and is regulated under Order No. 98-109, consists of three influent headworks which include three concrete channels, one channel is equipped with a Hycor screen, one with a manual bar screen, the third channel is not in use; influent pumps, four aerated lagoons in series, chemical addition, two dissolved air flotation units, a flocculation unit, two filters, a clear well, two chlorine contact basins, bisulfite dechlorination, sludge drying beds, two effluent storage reservoirs, a reclamation area, and a tail water return system (Attachment C-1).

The Discharger commenced operation of the Phase II WWTF on March 13, 2007, and is designed for up to 3.0 mgd. The Phase II WWTF utilizes portions of the Phase I WWTF but includes an anoxic reactor for flow/load equalization and a

carbon source for denitrification, sequencing batch reactors (SBRs) for biological treatment including nitrification and denitrification, new tertiary filters, automated chemical feed, pre- and post on-line turbidity instrumentation, and ultraviolet disinfection, and two stage aerobic digesters to achieve Class B biological sludge treatment. Sludge supernatant will return to the anoxic reactor (Attachment C-2).

Phase III, which expands the capacity to 5.4 mgd, includes a larger influent pumping system and effluent pumping system, a larger bar screen, and an additional SBR. The Phase II and Phase III WWTFs are designed to treat biosolids to Class B as defined by 40 CFR Part 503. The biosolids will be removed by a hauler for disposal at a licensed biosolids facility.

B. Discharge Points and Receiving Waters

1. The Facility and discharge point are located just north of Section 3, T2S, R4E, MDB&M, as shown in Attachment B (Figure B-1), a part of this Order.

2. The Discharger proposes to discharge treated effluent at Discharge Point 001 through a diffuser at a proposed distance of 25-50 feet from shore and at a proposed depth of 5-10 feet. Discharge Point 001 is located at Old River near Wicklund Cut at Latitude 37° 47' 21" N and longitude 121° 31' 17" W.

3. Old River, in the vicinity of the discharge, is tidally influenced. River flow moves upstream during the incoming or flood tide, while downstream flows occur during the outgoing or ebb tide. Multiple dosing of the receiving water with effluent may occur as the tide moves the water column upstream and downstream past the outfall. Upstream San Joaquin River releases, tidal influences, the South Delta Temporary Barriers Project, and State Water Project pumping at Clifton Court Forebay affect the amount of flow in Old River. A more detailed discussion of Old River hydrodynamics and dilution is provided in Attachment F, Section IV.C.2.b.

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

1. Effluent limitations/Discharge Specifications contained in the Order No. 98-109, and representative monitoring data for the discharge to land are as follows:

Table 2. Summary of Existing Requirements and Self-Monitoring Data

Parameter (units)	Effluent Limitations			Monitoring Data (From Jan 2004– To Nov 2005)		
	Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
BOD_5[1] (mg/L))	60		120	17		27
Total Coliform Organisms (MPN/100mL)	23[2]		500	<2	--	50

1 5-day, 20°C biochemical oxygen demand
2 30-day median

D. Compliance Summary

1. No significant violations have been reported for this facility.

E. Planned Changes

1. **Phase I WWTF (0.45 mgd Design Capacity).** The Phase I WWTF includes four aerated lagoons in series, dissolved air flotation to remove algae, filters, a two-unit chlorine contact basin, two effluent storage reservoirs, and an interim land reclamation area.

2. **Phase II WWTF (3.0 mgd Design Capacity) and Phase III WWTF (5.4 mgd Design Capacity).** The Phase II WWTF utilizes the existing bar screens and influent channels, and replaces the Phase I WWTF with grit removal, an emergency storage reservoir, an anoxic reactor/surge basin, parallel sequencing batch reactors, an effluent surge basin, sludge digesters, sludge centrifuge, filters, and ultraviolet disinfection. The Phase III WWTF is an expansion of the Phase II WWTF, adding additional treatment units to handle the expanded flows. The Phase II and Phase III WWTFs will discharge directly to Old River.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order is issued pursuant to Section 402 of the Federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC for discharges that are not subject to regulation under

CWA Section 402.

B. California Environmental Quality Act (CEQA)

The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of Division 13 of the Public Resources Code in accordance with Section 13389 of the CWC. San Joaquin County, on November 10, 1994, certified an environmental impact report in accordance with CEQA and the State CEQA Guidelines for the discharge to land.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans**. The Regional Water Board adopted a *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Revised September 2004)* (Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water 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 beneficial uses of the Sacramento-San Joaquin Delta, including Old River downstream of the discharge are as follows:

Table 3. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	**Old River**	Existing: Municipal and domestic supply (MUN), agricultural irrigation and stock watering (AGR), industrial process water supply (PROC), industrial service supply (IND), water contact recreation (REC-1), other non-contact water recreation (REC-2), warm freshwater aquatic habitat (WARM), cold freshwater aquatic habitat (COLD), warm and cold fish migration habitat (MIGR), warm spawning habitat, wildlife habitat (WILD), and navigation (NAV). Intermittent: None Potential: None

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 be 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 November 28, 1975, whether or not they are included in the water quality standards. Federal Regulations, 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.

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

   The State Water Board Water Quality Control Plan for Control of Temperatures in Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan) is applicable to this discharge. For purposes of the Thermal Plan, the Discharger is considered to be an Existing Discharger of Elevated Temperature Waste. The Thermal Plan in section 5.A., requires the following:

   "5. Estuaries

   A. Existing discharges

   (1) Elevated temperature waste discharges shall comply with the following:

   a. *The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.*

   b. *Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.*

   c. *No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.*

   d. *Additional limitations shall be imposed when necessary to assure protection of beneficial uses.*

(2) Thermal waste discharges shall comply with the provisions of 5A (1) above and, in addition, the maximum temperature of thermal waste discharges shall not exceed 86°F."

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

4. ***State Implementation Policy.*** On March 2, 2000, State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP*).* The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the California Toxics Rule. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005.

5. **Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan).** The Bay-Delta Plan was adopted in May 1995 by the State Water Board, superseding the 1991 Bay-Delta Plan. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection.

   The Bay-Delta Plan attempts to create a management plan that is acceptable to the stakeholders while at the same time is protective of beneficial uses of the San Joaquin River. The SWRCB adopted Decision 1641 (D-1641) on December 29, 1999. D-1641 implements flow objectives for the Bay-Delta Estuary, approves a petition to change points of diversion of the Central Valley Project and the State Water Project in the Southern Delta, and approves a petition to change places of use and purposes of use of the Central Valley Project. The water quality objectives of the Bay-Delta Plan are implemented as part of this Order.

6. ***Alaska Rule.*** On March 30, 2000, USEPA revised its regulation that specifies when new and revised State and Tribal water quality standards (WQS) become effective for CWA purposes (40 CFR Section 131.21, 65 FR 24641, April 27, 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 May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

7. ***Stringency of Requirements for Individual Pollutants*.** This Order contains restrictions on individual pollutants that are no more stringent than required by the federal CWA. Individual pollutant restrictions consist of technology-based restrictions and water quality-based effluent limitations. The technology-based effluent limitations consist of restrictions on BOD_5 and TSS. Restrictions on BOD_5 and TSS are specified in federal regulations as discussed in Findings II.F., and the permit's technology-based pollutant restrictions are no more stringent than required by the CWA. 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 May 1, 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 May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "*applicable water quality standards for purposes of the [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.

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

   The previous permit (Order No. 98-192) authorized a discharge of 5.4 mgd of tertiary treated municipal wastewater to Old River. In adopting Order 98-192, the Regional Water Board made findings that, "*The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Resources Control Board Resolution 68-16.*" This Order does not provide for an expansion from previously authorized discharge rate of 5.4 mgd. Furthermore, this Order incorporates effluent limitations and requirements that are at least as stringent (and in many cases more stringent) than the previous permit. In adopting this Order, the Regional Water Board has again considered 40 CFR 131.12 and Resolution 68-16 and although this Order may allow some degradation of the quality of waters of the state, it is consistent with Resolution 68-16 because (1) such degradation is consistent with the maximum benefit to the people of the state, (2) the discharge is

the result of wastewater utility service that is necessary to accommodate housing and economic expansion, and (3) it results in a high level of treatment of sewage waste. This Order requires tertiary treatment or equivalent, which is a high level of treatment that is considered best practicable treatment or control (BPTC) for most constituents in the wastewater and will result in attaining water quality standards applicable to the discharge. The discharge from the facility may currently cause or contribute to exceedances of applicable water quality objectives for certain constituents as described in this Order. However, this Order requires the Discharger, in accordance with specified compliance schedules, to meet requirements that will result in the use of BPTC of the discharge for those constituents and will result in compliance with water quality objectives. This Order requires compliance with technology-based standards and more stringent water quality-based standards.

Salinity. Prior to receiving the original NPDES permit (Order No. 98-192) adopted in September 1998, the Discharger submitted an investigation regarding the salinity impacts from the Facility's discharge into Old River. The report, prepared in 1998 by ECO:LOGIC titled, *Analysis of Effluent Discharge to Old River*, found that based on data existing at the time, effluent discharged from the Facility would increase salinity in Old River by as much as 2% during low flow summer months. According to the report, however, a reduction in salinity loading to Old River would occur due to land-use changes in the Mountain House community as agricultural land, and its associated high saline drainage, becomes converted to urban use. The analysis provided in the reported indicated that, on average, under the urban land use scenario (including salt emissions from both urban drainage and Facility effluent) salinity in Old River is similar or less than values predicted with agricultural land use.

In response to a request from the South Delta Water Agency, a more detailed analysis was conducted in1998 that led to a similar conclusion. More recently, a follow-up study to further develop estimates for the evaluation of salt emissions associated with land-use changes was conducted in 2003 by ECO:LOGIC titled, *Converting Farm Land to Urban Use: A Salinity Impact Assessment Update*. Data presented in this study suggest that salinity in agricultural drainage from the Mountain House site may have been underestimated in the previous analysis. Nevertheless, the report's findings are similar to the 1998 report, concluding that "…*urbanization of the Mountain House site with tertiary effluent discharge to Old River should not exacerbate EC concentrations in Old River compared to the historical impact resulting from agricultural use*."

This Order includes final WQBELs stating that the electrical conductivity in the discharge shall not exceed a monthly average of 700 µmhos/cm (April 1 to August 31) and a monthly average of 1000 µmhos/cm (September 1 to March 31), <u>unless;</u>

(1) The Discharger develops and implements a salinity source control program as approved by the Executive Officer that will identify and implement measures to reduce salinity in discharges from residential, commercial, industrial and infiltration sources in an effort to meet an interim salinity goal of a maximum

500 umhos/cm electrical conductivity increase over the weighted average conductivity of the City of Tracy's water supply; and

(2) When notified by the Executive Officer, the Discharger participates financially in the development of the Central Valley Salinity Management Plan.

Failure to meet conditions (1) and (2), above, would result in the final effluent limitation becoming effective. Furthermore, this Order establishes an interim effluent limit of 1400 µmhos/cm as electrical conductivity (EC) based on the Discharger's current level of performance, requires that the Discharger implement best practicable treatment or control (BPTC) of its discharge, requires the development and implementation of pollution prevention plan for salinity in accordance with CWC section 13263.3(d)(1)(D., and includes a salinity reduction goal of 1000 µmhos/cm.

9. ***Water Reuse Policy.*** The Basin Plan's Water Reuse Policy states, "*The Regional Water Board encourages the reclamation and reuse of wastewater…and requires as part of a Report of Waste Discharge an evaluation of reuse and land disposal options as alternative disposal methods. Reuse options should include consideration of the following, where appropriate, based on the quality of the wastewater and the required quality for the specific reuses: industrial and municipal supply, crop irrigation, landscape irrigation, ground water recharge, and wetland restoration*." The purpose of the Water Reuse Policy is to evaluate alternative methods of disposal to prevent unnecessary discharges to surface water.

The previous Order (Order 98-192) permitted the discharge of tertiary treated effluent to Old River under the condition that the Discharger demonstrate that permanent reclamation of effluent proposed to be discharge to Old River is infeasible. Under Order No. 98-109, interim wastewater reclamation has been achieved using spray fields that are scheduled for development. ECO:LOGIC prepared a series of studies for the Discharger investigating the feasibility of wastewater reclamation, including *An Assessment of the Feasibility of Effluent Reclamation (April 1998), Reconnaissance Study of Water Sources for Use on Irrigated Public Areas (December 1998),* and a follow-up investigation in February 2003 titled, *Effluent Reclamation Update*.

The initial reclamation feasibility study conducted in April 1998 examined several scenarios that included; (1) winter storage with summer reclamation, (2) winter discharge of secondary treated wastewater to Old River with summer reclamation, and (3) year-round tertiary treated wastewater discharge to Old River. Year-round discharge was chosen as the cost-effective disposal method due to the costs involved with either complete or partial reclamation via irrigation of fodder crops. These costs included the acquisition of between 1000-2400 acres of land for reclamation and the cost for pumps and conveyances to move wastewater to the reclamation area. The 2003 study also considered potential negative impacts to groundwater quality due to the salinity of the effluent and concluded that the need to dilute reclaimed water with California Aqueduct water to avoid groundwater degradation further increased the cost of reclamation.

The use of tertiary effluent to irrigate the Mountain House golf course, although less cost-effective than potable water due to the added cost of effluent run-off containment facilities and a second water distribution system, was originally included in the Discharger's water use plan. However, due to concerns regarding interpretation of Water Code Section 60310 (e)(2) that prohibits the entrance of recycled water "mist" into dwellings, the Discharger chose to hold its plan to require the golf course developer to use recycled water in abeyance until the Department of Health Services provided further written guidance regarding the issue.

A third possibility for reuse of the tertiary effluent produced by the Facility involves a proposed 1,100 megawatt gas-fired power generating station (the East Altamont Energy Center) that was approved by the California Energy Commission (CEC) in 2003. If constructed, the plant would be located directly west of Mountain House and have a peak demand for cooling water of 6.25 mgd. The 2002 version of the environmental assessment document filed with the CEC for the proposed power station states that "*the project owner shall use 100 percent of the tertiary treated water produced by the MHWWTP*". However, due to economic conditions, Calpine, the owner of the proposed power plant, has not yet begun construction of the facility and the CEC classifies the project as "on hold" with no projected operational date.

Based on the analysis of the available disposal alternatives, the current plan to produce tertiary effluent for discharge to Old River is considered by the Discharger to be superior to all other alternatives because of cost-effectiveness and because it leaves open the possibility that water reuse can be achieved in the future at the proposed power plant.

10. ***Anti-Backsliding Requirements*****.** Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR 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. All effluent limitations in the Order are at least as stringent as the effluent limitations in the previous Order.

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

12. ***Emergency Planning and Community Right to Know Act***. Section 13263.6(a), CWC, 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 surface waters 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 Board plan, so no effluent limitations are included in this permit pursuant to CWC Section 13263.6(a).

13. ***Storm Water Requirements*.** USEPA promulgated Federal Regulations for storm water on 16 November 1990 in 40 CFR Parts 122, 123, and 124. The NPDES Industrial Storm Water Program regulates storm water discharges from municipal sanitary sewer systems. Wastewater treatment plants are applicable industries under the storm water program and are obligated to comply with the Federal Regulations.

14. ***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.

    On September 4, 2002, the U.S. Army Corps of Engineers (Corps) requested consultation from the National Marine Fisheries Service (NMFS) in accordance with section 7 of the Endangered Species Act for the construction and operation of an outfall to Old River from the Mountain House Wastewater Treatment Plant (MHWWTP), and the restoration of the Mountain House Creek channel and floodplain. Subsequently on April 7, 2003, the Corps requested that NMFS consider the creek restoration and wastewater plant outfall as two separate projects. NMFS provided a biological opinion, dated September 1, 2006, based on the construction and operation of the proposed MHWWTP outfall, and its effects on Federally listed endangered Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*), threatened Central Valley spring-run Chinook salmon (*O. tshawytscha*), threatened Central Valley steelhead (*O. mykiss*), threatened southern distinct population segment of North America green sturgeon (*Acipenser medirostris*), and designated critical habitat for Central Valley steelhead.

    NMFS predicts in its biological opinion that the project will result in the incidental take of listed species as a result of exposure to chronic, sublethal concentrations of toxic compounds discharged from the MHWWTP. Nevertheless, NMFS finds that the, "*level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.*" NMFS further states that,

"*Based on the best available scientific and commercial information, the biological opinion concludes that the MHWWTP expansion project, as presented by the Corps, is not likely to jeopardize the continued existence of the listed species or destroy or adversely modify designated critical habitat.*" To minimize the incidental take of listed species, NMFS recommends that the Discharger implement reasonable and prudent measures. This Order includes a reopener provision to allow the permit to be reopened should the measures required by NMFS result in the need for new or revised effluent limitations or requirements.

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 western portion Sacramento-San Joaquin Delta waterways includes: diazinon and chlorpyrifos, organo-chlorine Group A pesticides, DDT, mercury, electrical conductivity, and unknown toxicity. The listing for Old River between the San Joaquin River and the Delta-Mendota Canal also includes dissolved oxygen (DO) deficiencies.

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 TMDL for DO deficiencies was adopted by the Regional Water Board on January 27, 2005. The TMDL for organo-phosphate pesticides (diazinon and chlorpyrifos) is scheduled for presentation to the Regional Water Board for approval in June 2006, the TMDL for methylmercury is scheduled for December 2006, and the TMDL for Group A pesticides is scheduled for 2011.

   Regional Water Board staff is developing a draft methylmercury TMDL that proposes methylmercury load reductions for facilities discharging to the South Delta, including Old River. Health advisories by the Cal/EPA Office of Environmental Health Hazard Assessment remain in effect for human consumption of fish in the Delta, including Old River at Tracy, due to excessive concentrations of mercury in fish tissue. Mercury fish tissue monitoring substantiates these health warnings. Based on 8 fish tissue monitoring samples of legally catchable largemouth bass collected from 1998-1999 in Old River near Paradise Cut, fish tissue concentrations ranged from 0.20 mg/kg to 0.58 mg/kg, with an average of 0.39 mg/kg, which exceeds the USEPA recommended criterion for the protection of human health (0.3 mg/kg in fish tissue).

These fish tissue data confirm there is currently no assimilative capacity for mercury in Old River and applicable water quality standards must be applied as end-of-pipe effluent limitations. Effluent Limitations for mercury are included in this Order.

E. Other Plans, Policies, 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.

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., Section 1311(b)(1)(C); 40 CFR, Section 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, Section 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 Section 122.44(a) requires that permits include applicable technology-based

limitations and standards, and 40 CFR Section 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 Section 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. When a reasonable potential exists for exceeding a narrative objective, federal regulations mandate numerical effluent limitations and the Basin Plan narrative criteria clearly establish a procedure for translating the narrative objectives into numerical effluent limitations.

A. Discharge Prohibitions

As stated in Section I.G. of Standard Provisions (Attachment D), 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. In the case of United States v. City of Toledo, Ohio (63 F. Supp 2d 834, N.D. Ohio 1999) the Federal Court ruled that "*any bypass which occurs because of inadequate plant capacity is unauthorized…to the extent that there are 'feasible alternatives', including the construction or installation of additional treatment capacity*".

B. Technology-Based Effluent Limitations

1. Scope and Authority.

40 CFR Section 133.102 contains regulations describing the minimum level of effluent quality for biochemical oxygen demand (BOD) and total suspended solids (TSS) attainable by secondary treatment.

2. Applicable Technology-Based Effluent Limitations.

The Federal Clean Water Act, Section 301, requires that not later than July 1, 1977, publicly owned wastewater treatment works meet effluent limitations based on secondary treatment or any more stringent limitation necessary to meet water quality standards. Federal Regulations, 40 CFR, Part 133, establish the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for five-day biological oxygen demand (BOD) and total suspended solids (TSS). Tertiary treatment is necessary to protect the beneficial uses of the receiving stream and the final effluent limitations for BOD and TSS are based on the technical capability of the tertiary process. BOD is a measure of the amount of oxygen used in the biochemical oxidation of organic matter. The secondary and tertiary treatment standards for BOD and TSS are indicators of the effectiveness of the treatment processes. The principal design parameter for wastewater treatment plants is the daily BOD and TSS loading rates and the corresponding removal rate of the system. In applying 40 CFR Part 133 for weekly and monthly average BOD and TSS limitations, the application of tertiary treatment processes results in the ability to achieve lower levels for BOD and TSS than the secondary standards currently prescribed; the 30-day average BOD and TSS limitations have been revised to 10 mg/L, which is technically based on the capability of a tertiary system. A daily maximum limitation for BOD and TSS is also included in the Order to assure that the treatment works is not organically overloaded and operates in accordance with design capabilities. The Phase II and Phase III can meet tertiary limitations because they are designed for <5 mg/L BOD_5 and TSS and <2 NTU average turbidity. The application of tertiary treatment and the corresponding maximum daily, and average weekly and monthly limitations for BOD and TSS are in accordance with 40 CFR Part 125.3 technology based treatment requirements providing best practicable waste treatment technology utilizing best professional judgment to establish the case by case effluent limitations. See Tables F-1 and F-2 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 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 and TSS over each calendar month.

Table F-1.
Summary of Final Technology-based Effluent Limitations
Discharge Point 001
Phase II – 3.0 mgd

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily
BOD 5-day 20°C	mg/L	10	15	20
	lbs/day	250	375	500
Total Suspended Solids	mg/L	10	15	20
	lbs/day	250	375	500

Table F-2.
Summary of Final Technology-based Effluent Limitations
Discharge Point 001
Phase III – 5.4 mgd

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily
BOD 5-day 20°C	mg/L	10	15	20
	lbs/day	450	675	900
Total Suspended Solids	mg/L	10	15	20
	lbs/day	450	675	900

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

As specified in 40 CFR 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 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 water quality criteria contained in the CTR and NTR.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

a. Beneficial Uses. The beneficial uses of the Sacramento-San Joaquin Delta, including Old River downstream of the discharge, as identified in Table II-1 of the Basin Plan are municipal and domestic supply, agricultural irrigation, agricultural stock watering, industrial process water supply, industrial service supply, water contact recreation, other non-contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm spawning habitat, wildlife habitat, and navigation. The

beneficial uses of the underlying groundwater are municipal and domestic, industrial service, industrial process and agricultural supply.

b. Dilution Credits/Mixing Zones. The issues of dilution credits and mixing zones are complex. Subsection i. summarizes the flow management of the San Joaquin River (SJR) and the 1995 Bay Delta Plan, Subsection ii. discusses the flow dynamics of Old River, Subsection iii. reviews the history of available flow data, Subsection iv. discusses the existing hydrodynamic and water quality models, Subsection v. discusses available mixing zone guidance, Subsections vi. through x. provide evaluations of available dilution credits for compliance with acute, chronic, human health, pathogens, and ammonia water quality criteria, respectively, Subsection xi. discusses the lack of assimilative capacity in the receiving water for specific constituents, and Subsection xii. explains the need for real-time flow monitoring data in the vicinity of the discharge for the allowance of dilution credits in future permits.

i. Delta Operations, 1995 Bay-Delta Plan, and CALFED. The *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan) was adopted in May 1995 by the State Water Board. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection. The Bay-Delta Plan is reviewed periodically in compliance with CWC section 13240 and federal CWA section 303(c).

In December 1999 and March 2000 the State Water Board adopted and revised Water Rights Decision 1641 (D-1641) as part of the State Water Board's implementation of the 1995 Bay-Delta Plan. The implementation plan to meet water quality objectives in the 1995 Bay-Delta Plan supports compliance with the objectives by making changes in the flow of water or in the operation of facilities that move water. Accordingly, this decision amends certain water rights by assigning responsibilities to the persons or entities holding those rights to help meet the objectives.

a) South Delta Temporary Barriers Program. The responsibility for meeting certain objectives in the South Delta has been placed with the Department of Water Resources (DWR) and the United States Bureau of Reclamation (USBR). To meet these objectives, USBR controls the San Joaquin River flow at Vernalis and DWR utilizes temporary barriers in the south Delta through the South Delta Temporary Barriers Program, instituted in 1991. The South Delta Temporary Barriers Program provides temporary measures to mitigate flow, water quality, water availability, and the protection of migrating San Joaquin River salmon. This project is ongoing until permanent flow control structures are installed as part of the South Delta Improvements Program (see subsection (b) below).

The South Delta Temporary Barriers Program is comprised of temporary barriers that are installed at the Head of Old River, Middle River, Grant

Line Canal, and Old River near Tracy. See Figure F-1 for a map of the barrier locations. The Head of Old River (HOR) barrier restricts flow from entering Old River. In the spring, the HOR barrier is principally a fish barrier and is installed to help reduce fishery impacts caused by the Central Valley Project and the State Water Project. The spring installation of the HOR barrier reduces entrainment of emigrating juvenile San Joaquin fall-run Chinook salmon in the southern Delta. In the fall, the HOR barrier is installed to maintain flow rates in the SJR thereby improving dissolved oxygen conditions in the Stockton Deep Water Ship Channel.

The Grant Line Canal, Middle River, and Old River barriers are agricultural barriers. These are intended to primarily benefit agricultural water users in the south Delta. The agricultural barriers allow incoming tides to flow upstream while restricting downstream flow. These barriers significantly reduce tidally caused flow reversals in the South Delta. The agricultural barriers are installed to reduce salinity in the South Delta in an effort to meet the D-1641 salinity objectives. The barriers also increase water levels and circulation patterns for local agricultural diversions.

The HOR barrier is installed for a month or so each in the fall and spring and the agricultural barriers are installed from spring to fall. Typically, the fall HOR barrier is installed in October and removed in November, the spring HOR barrier is installed in April and removed in May, and the agricultural barriers are installed in April and removed in November. The lowest flows in Old River occur when all barriers are installed, which can take place in May, October, and November. Figure F-2 shows the periods when the barriers have been installed between 1994 and 2004.

Continued installation of the barriers will allow DWR to perform monitoring to determine potential hydraulic effects on south Delta channels and biological effects on vegetation and fisheries within the south Delta. The information gathered will be used to assist the development of long-term solutions to agricultural water supply problems and improvements to salmon migration. Using temporary barriers will also allow DWR to improve permanent barrier designs and review alternative timing operations for the permanent barriers.

b) CALFED South Delta Improvements Program (SDIP). CALFED issued a Record of Decision (ROD) in August 2000, which included the following elements related to the South Delta:

- Increase SWP pumping from March 15 to December 15; and modify existing pumping criteria from December 15 to March 15 to allow greater use of SWP export capacity.
- Increase SWP pumping to the maximum capability.

- Design and construct new fish screens at the Clifton Court Forebay and Tracy pumping plant facilities to allow the export facilities to pump at full capacity more regularly.
- Dredge and install operable barriers to ensure delivery of adequate quantity and quality water to agricultural diverters within the South Delta.

This resulted in the proposed CALFED South Delta Improvements Program (SDIP). DWR and USBR are responsible for implementing the SDIP. A draft EIR/S is under development for implementation of the SDIP. Actions contemplated as part of the SDIP include providing for more reliable long-term export capability by the state and federal water projects, protection of local diversions, and reducing impacts on San Joaquin River salmon. Specifically, the CALFED actions in the SDIP include consideration of placement of a permanent operable fish gate at the head of Old River, up to three permanent operable flow control gates in south Delta channels, dredging of Middle River, extension of some agricultural diversions, and increasing diversion capability of Clifton Court Forebay from 6,680 cfs to 8,500 cfs.

Biological opinions from the Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) have been issued for the SDIP that claim no jeopardy for listed species. However, some questions regarding the science used to develop the NMFS' biological opinion have been raised with respect to salmon and steelhead species. DFG is also expected to issue a Natural Communities Conservation Plan Determination once the CEQA document is completed. DWR expects the Final EIR to be completed in the summer of 2006 and permanent flow control structures operable by April 2009.

ii. South Delta/Old River Hydrodynamics. Flow conditions in Old River in the vicinity of the discharge are affected by San Joaquin River flows, barrier operations, and state and federal pumping operations from the State Water Project and Central Valley Project. Additionally, the discharge is located in a tidal zone. River flow moves upstream during the incoming or flood tide, while downstream flows occur during the outgoing or ebb tide. Multiple dosing of the receiving water with effluent occurs as the tide moves the water column upstream and downstream past the point of discharge. The complex dynamics of the stream flow, the tidal flows, the barrier operations, and the state and federal pumping operations must be considered in an evaluation of the available dilution for the discharge.

The flow of diluting water at the point of discharge varies with the tidal cycle. Typically, as net river flow drops, at some point in the tidal cycle the incoming tide balances against the downstream river flow resulting in river flow stagnation and very little dilution of effluent. Below this net river flow,

the direction of the river flow reverses with incoming tides resulting in short periods of time with zero net river flows. Additionally, with flow reversals, some volume of river water is multiple dosed with the effluent as the river flows downstream past the discharge, reverses, moves upstream past the discharge a second time, then again reverses direction and passes the discharge point a third time as it moves down the river. A particular volume of river water may move back and forth, past the discharge point many times due to tidal action, each time receiving an additional load of wastewater. This is exacerbated with the barriers installed in the South Delta. The barriers minimize inflow from the San Joaquin River and restrict downstream flows. Therefore, flows while the barriers are in place are primarily tidal, since the HOR barrier directs the majority of San Joaquin River flows north towards Stockton. In addition, the agricultural barriers allow flood tides through but the ebb tides are restricted. This maintains water levels for irrigation, but reduces downstream flow in Old River.

iii. Historical Receiving Water Flow Data. Real-time flow monitoring data for Old River in the vicinity of the discharge is not available. The nearest real-time flow monitoring station is located approximately 8 miles upstream at the Head of Old River. Less than two years of historical flow data is available (February 2000 through December 2002). DWR began collecting flow data at the Head of Old River in February 2000. However, the flow sensor was removed in January 2003 due to faulty instrumentation.

Based on discussions with DWR staff, the existing flow data may be unreliable under the conditions that result in critical low flows in Old River. The installation of the South Delta temporary barriers reduces flow in Old River and the lowest flow likely occurs when all barriers are installed. However, when the HOR barrier is in place, eddies are created in front of the flow-measuring instrument causing excessive noise and possible false negative flows. The instrumentation was changed in 2003 to correct the problem, however, data are not available during critical periods since that time.

Additional flow data in the area are also available from the United States Geological Survey (USGS) San Joaquin River (SJR) flow monitoring station at Vernalis, upstream of Head of Old River. SJR flow data from 1923 to the present are available from the Vernalis station. These flow data are not directly representative of that in Old River due to great variations that can occur with barrier operations and Delta withdrawals. However, the data are useful for determining critical low flow periods in the region.

The Discharger has not installed a real-time monitoring station in the vicinity of the outfall to provide continuous monitoring of flow direction and velocity. Real-time monitoring would provide an accurate assessment of dilution.

iv. Water Quality Model. The Discharger submitted a *Tidal Dilution Study of the Mountain House Wastewater Treatment Plant Discharge into Old River*

dated September 2005 prepared for Pacific Advanced Civil Engineering, Inc. and prepared by Jones & Stokes, Sacramento, CA. The Dilution Study includes: Old River channel geometry, simulated and measured tidal stages in the South Delta for April-July 2004, dye studies of near-field tidal dilution, Department of Water Resources Delta Simulation Model 2 (DSM2) modeling of Mountain House WWTF effluent dilution, potential interaction with effluent from the City of Tracy WWTF, and near-field mixing at the Mountain House Diffuser. The Dilution Study was assumed to represent a low flow worst-case scenario and did not discuss potential flows during the remainder of the year. The Dilution Study does not discuss underlying model fundamentals, assumptions, limitations, or the level of confidence and uncertainty in model results.

The Dilution Study utilized 6.5 mgd for the effluent discharge rate and considered three different scenarios: no barriers, future operations, and the April – July 2004 South Delta flows. It hypothesizes that during the April – July 2004 study period, all barriers were in place and assumes that diversions, pumping, agricultural withdrawals, river flows, and operation of barriers will remain predictable and consistent. However, barrier operation is not consistent from year to year as illustrated by the fact that during 2005, the HOR barrier was not installed. Thus, other factors including barrier operation, river flow, Tracy Pumping Plant withdrawal, Bank's Pumping Plant withdrawal, and agricultural withdrawals not subject to Discharger control may impact flows in Old River. These latter factors directly affect the river flow quantity and direction.

The Dilution Study simulated and measured tidal stages and mixing and dilution patterns by following pulse (batch) releases of rhodamine-WT tracer dye. During ebb tide, the flow moved upstream; during flood tide, the flow moved downstream. The pulse releases demonstrated that the dye dispersed equally both directions and was consistent with mixing a single batch of dye throughout a large basin without exiting the basin. The dye study verifies that the flow essentially is stagnant, there is little or no available dilution and with a wastewater discharge, the chemical characteristics of river water will approach that of the effluent. Consequently, there is no basis for a dilution credit.

v. Regulatory Guidance for Dilution Credits and Mixing Zones. The CWA directs states to adopt water quality standards to protect the quality of its waters. USEPA's current water quality standards regulation authorizes states to adopt general policies, such as mixing zones, to implement state water quality standards (40 CFR section 122.44 and section 122.45). The USEPA allows states to have broad flexibility in designing its mixing zone policies. Primary policy and guidance on determining mixing zone and dilution credits is provided by the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays and Estuaries of California (State Implementation Policy or SIP), the USEPA Technical Support Document for Water Quality-Based Toxics Control (EPA/505/2-90-

001) (TSD), and the Basin Plan. For NPDES permits in California, the SIP policy supersedes the USEPA guidance for priority pollutants, to the extent that it addresses a particular procedure. The SIP does not apply to non-priority pollutants, in which case the more stringent of the Basin Plan or USEPA guidance applies.

The allowance of mixing zones by the Regional Water Board is discussed in the Basin Plan, Policy for Application of Water Quality Objectives, which states in part, "*In conjunction with the issuance of NPDES and storm water permits, the Regional [Water] Board may designate mixing zones within which water quality objectives will not apply provided the discharger has demonstrated to the satisfaction of the Regional [Water] Board that the mixing zone will not adversely impact beneficial uses. If allowed, different mixing zones may be designated for different types of objectives, including, but not limited to, acute aquatic life objectives, chronic aquatic life objectives, human health objectives, and acute and chronic whole effluent toxicity objectives, depending in part on the averaging period over which the objectives apply. In determining the size of such mixing zones, the Regional [Water] Board will consider the applicable procedures and guidelines in the EPA's Water Quality Standards Handbook and the [TSD]. Pursuant to EPA guidelines, mixing zones designated for acute aquatic life objectives will generally be limited to a small zone of initial dilution in the immediate vicinity of the discharge*."

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

Section 1.4.2.1 of the SIP defines a dilution credit as, "*a numerical value associated with the mixing zone that accounts for the receiving water entrained into the discharge. The dilution credit is a value used in the calculation of effluent limitations. Dilution credits may be limited or denied on a pollutant-by-pollutant basis, which may result in a dilution credit for all, some or no priority pollutants in a discharge.*"

Regarding, the SIP states, "*A mixing zone shall be as small as practicable. The following conditions must be met in allowing a mixing zone:*

"A: A mixing zone shall not:

(1) *compromise the integrity of the entire water body;*
(2) *cause acutely toxic conditions to aquatic life passing through the mixing zone;*
(3) *restrict the passage of aquatic life;*
(4) *adversely impact biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or State endangered species laws;*
(5) *produce undesirable or nuisance aquatic life;*
(6) *result in floating debris, oil, or scum;*
(7) *produce objectionable color, odor, taste, or turbidity;*
(8) *cause objectionable bottom deposits;*
(9) *cause nuisance;*
(10) *dominate the receiving water body or overlap a mixing zone from different outfalls; or*
(11) *be allowed at or near any drinking water intake. A mixing zone is not a source of drinking water. To the extent of any conflict between this determination and the Sources of Drinking Water Policy (Resolution No. 88-63), this SIP supersedes the provisions of that policy*."

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

With the installation of temporary barriers in the South Delta, the hydrodynamics of Old River are such that during critically dry years there may be very limited flow available for dilution. Additionally, the receiving water is significantly impaired and a migratory corridor for threatened and endangered species. Old River and the Sacramento-San Joaquin Delta are listed as impaired under section 303(d) of the federal CWA and identified as "*Toxic Hot Spots*," pursuant to the Bay Protection and Toxic Hot Spot Cleanup Program. Therefore, to ensure the adequate protection of beneficial uses, dilution credits cannot be allowed for the acute and chronic aquatic life conditions and for human health protection.

vi. Evaluation of Available Dilution for Acute Aquatic Life Criteria. The SIP requires that if a year-round dilution credit is to be considered for establishing effluent limitations for priority pollutants regulated under the California Toxics Rule (CTR), critical receiving water flow and maximum discharged effluent flows must be evaluated as part of the dilution calculation. For acute aquatic life criteria, the SIP requires an evaluation of the lowest one-day receiving water flow with a statistical return frequency of

once every 10 years (1Q10) compared to the maximum daily effluent flow during the discharge period. There is no real time flow data for Old River near the point of discharge to make this evaluation. The acute critical low flow of the receiving stream is 0 cfs.

During the tidal cycle, slack tide can last several hours, resulting in no flow available for dilution for acute aquatic life criteria (1-hr duration). Therefore, a year-round acute dilution credit and mixing zone are not available for compliance with acute aquatic life criteria.

vii. **Evaluation of Available Dilution for Chronic Aquatic Life Criteria.** The TSD states that: "*Concentrations above the chronic criteria are likely to prevent sensitive taxa from taking up long-term residence in the mixing zone. In this regard, benthic organisms and territorial organisms are likely to be of greatest concern. The higher the concentration occurring within the isopleth, the more taxa are likely to be excluded, thereby affecting the structure and function of the ecological community. It is thus important to minimize the overall size of the mixing zone and the size of elevated concentration isopleths within the mixing zone.*"

For the determination of a year-round chronic aquatic life criteria dilution credit, the SIP requires an evaluation of the lowest seven (7) consecutive day receiving water flows with a statistical frequency of once every 10 years (7Q10) compared against the four-day average of daily maximum effluent discharge flows during the discharge period. There is insufficient real-time receiving water flow data to provide a 7Q10 design flow.

Flow through Old River, when not modified by barriers, is typically composed of the larger fraction of the flow from the San Joaquin River. Installation of the temporary barriers directs the majority of the San Joaquin River flow north, greatly reducing the flow in Old River. Therefore, with the barriers installed, most flow at the point of discharge can be attributed to tidal influences.

During critically dry years, the diluting flow for the chronic condition would likely be minimal. Therefore, the discharge must meet end-of-pipe limits for compliance with chronic aquatic life criteria. No dilution credit will be applied year-round for the determination of effluent limitations for chronic aquatic life criteria.

viii. **Evaluation of Available Dilution for Priority Pollutant Human Health Criteria.** The discharge point is within approximately five miles of the Tracy Pumping Plant on the Delta Mendota Canal, a source of drinking water. The human health-based criteria for carcinogens, other than arsenic, are based on safe levels for lifetime exposure and dilution is based on the harmonic mean flow of the receiving water. In determining the available receiving water dilution for compliance with human carcinogen criteria, the SIP, section 1.4.2.1 requires that the harmonic mean of the receiving water

flow be compared against the arithmetic mean of the effluent flow of the observed discharge period. The Dilution Study did not include adequate information to support allowing a harmonic mean dilution for human health pollutant criteria. In addition, since direct Old River flow measurements to reflect flows in the discharge vicinity do not exist to provide evidence that a harmonic mean dilution exists, a dilution credit for priority pollutant human health criteria cannot be allowed.

ix. Evaluation of Available Dilution for Pathogen/Disinfection Considerations. The Delta has the designated beneficial use of drinking water/municipal supply and must be protected for that use even if the existing use is several miles downstream. For agricultural use and body contact recreational uses, the impacts to human health can result from very short exposures and can occur at or near the outfall. As discussed in the acute dilution section, dilution is not available over short timeframes at the outfall due to the slack water that occurs with the installation of barriers and their effect on tidal flows. The quality of the discharge must be protective of drinking water/municipal supply, body contact recreation, and agricultural supply at the outfall. Therefore dilution is not available for pathogens.

x. Evaluation of Available Dilution for Ammonia (30-Day Average Chronic Toxicity). During critically dry years, the diluting flow for the 30-day average chronic condition would likely be minimal. Without dilution credits, the discharge must meet end-of-pipe limits for compliance with the ammonia 30-day average chronic aquatic life criteria. No dilution credit will be applied year-round for the determination of effluent limitations for ammonia.

xi. Evaluation of Available Dilution for Specific Constituents (Assimilative Capacity). Dilution credits cannot be allowed for aluminum, iron, and mercury due to a lack of assimilative capacity in Old River. Based on data collected by the Discharger, the receiving water exceeds the water quality objectives for aluminum, iron, and mercury.

xii. Dilution Credits for Future Permits. No dilution has been granted in this Order, thus end-of-pipe effluent limitations for all constituents are required. As discussed in detail above, the Discharger has not provided adequate information for the allowance of dilution credits, most importantly, real-time flow monitoring data in the vicinity of the discharge. Real-time flow monitoring data in the vicinity of the discharge and supporting mathematical modeling analysis demonstrating that sufficient dilution flows are available is necessary and will be required for any consideration to allow dilution credits in future permit decisions.

c. ***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 shall be used in those equations." [emphasis added]

The State Water Resources Control 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 must be set 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 the worst-case condition (*e.g.*, lowest ambient hardness) in order to protect beneficial uses for all discharge conditions. Based on 15 samples collected in 2004-2005, the lowest receiving water hardness was measured as 100 mg/L as $CaCO_3$.

d. ***Translators***— The water quality objectives for metals are typically defined as dissolved metal. Whereas effluent limitations for metals, and most water quality data, are expressed as total metal. Therefore, metal translators are used to convert dissolved metal to total metal or vice versa. There have been no approved studies to evaluate discharge-specific metal translators for the discharge to Old River. Therefore, default USEPA translators have been used for reasonable potential analysis and effluent limitation derivation for metals. Where default USEPA translators are not available, a translator of 1.0 has been used.

Figure F-1. South Delta Temporary Barrier Locations

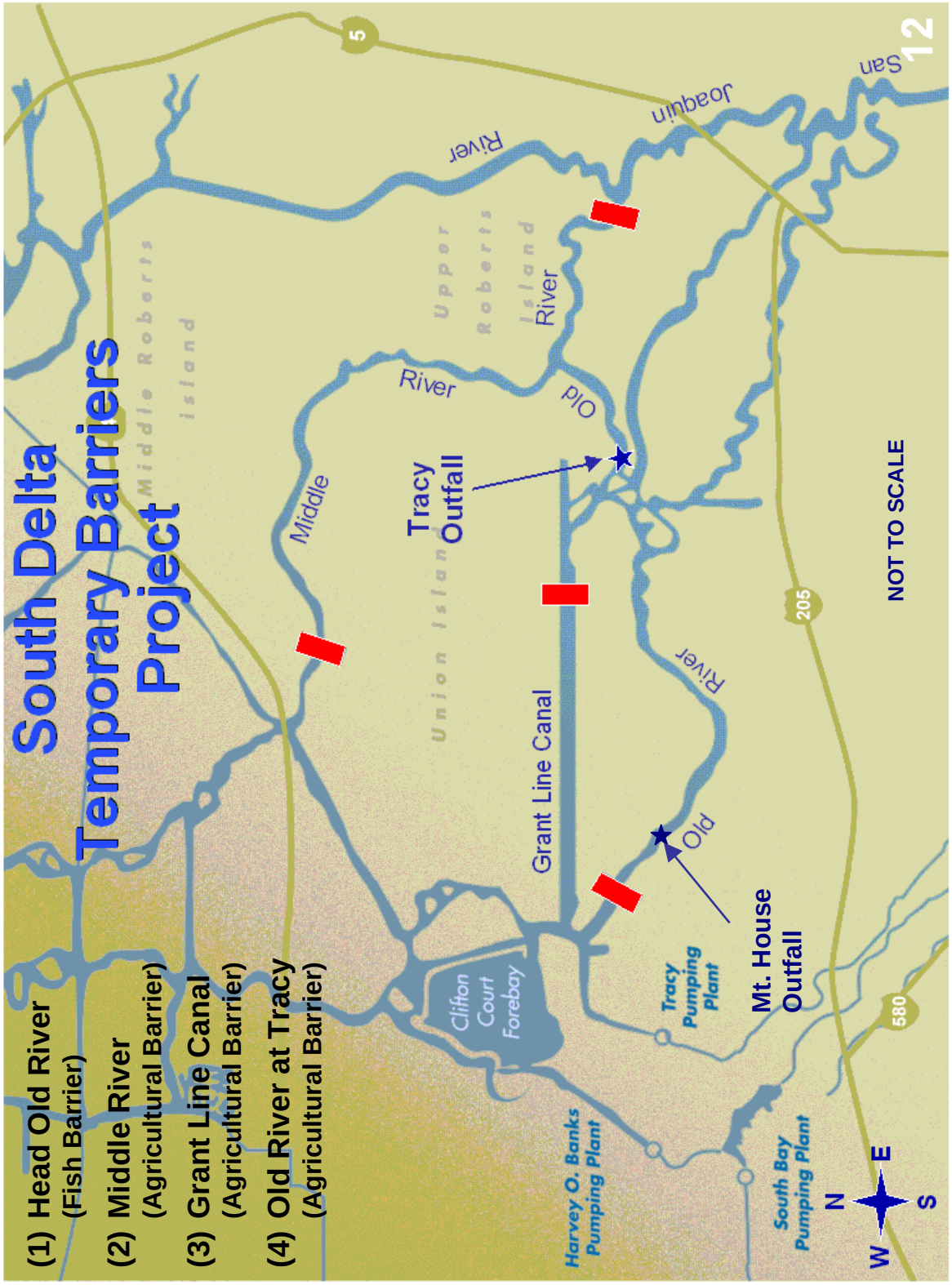
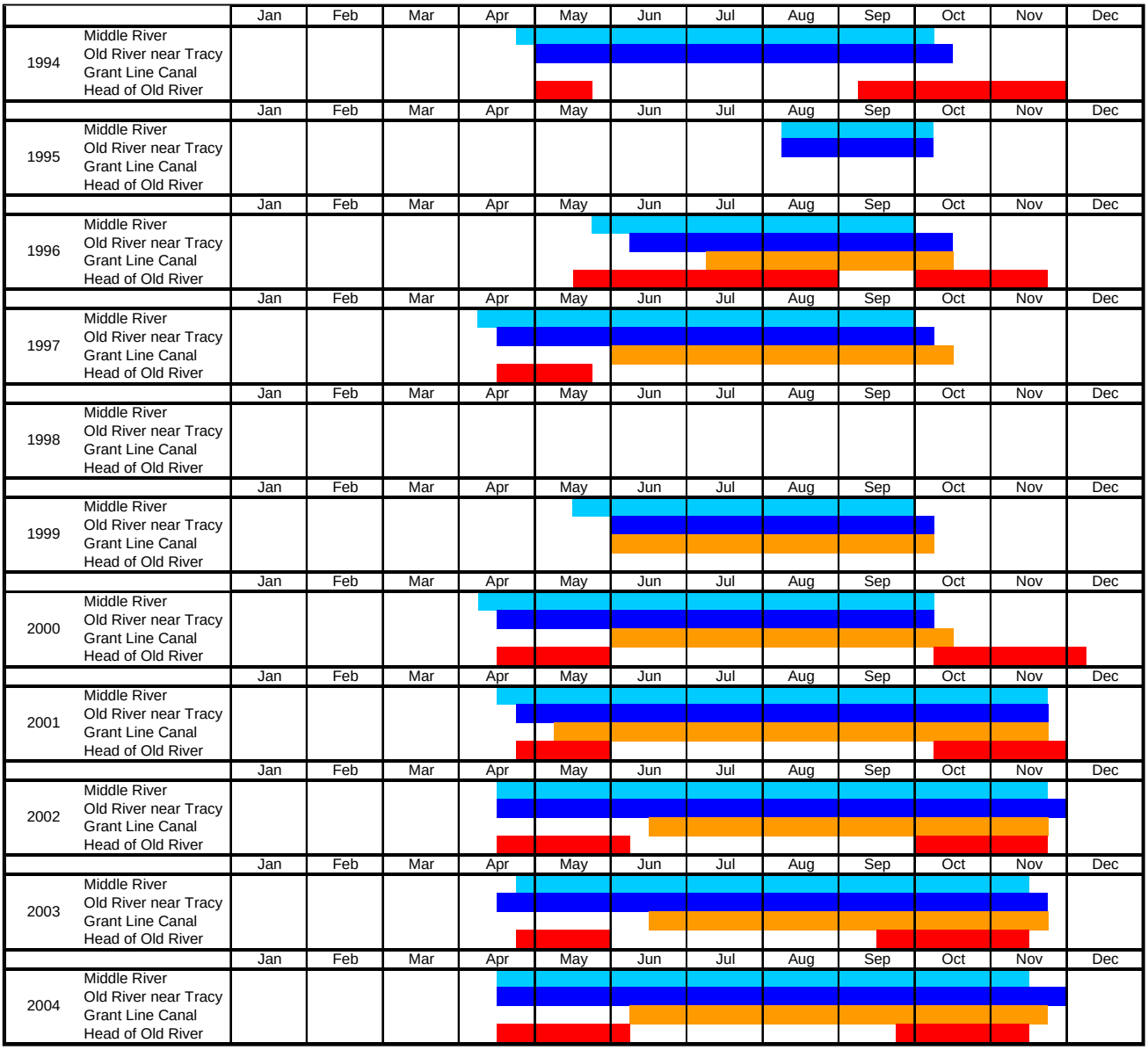


Figure F-2
South Delta Temporary Barrier Operations 1994-2000



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 CTR and NTR. The Basin Plan contains numeric site-specific water quality objectives, a narrative toxicity objective, and narrative chemical constituents objective. 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 a 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 for aluminum, ammonia, bis(2-ethylhexyl)phthalate, bromoform, chloroform, cyanide, chloride, dibromochloromethane, dichlorobromomethane, electrical conductivity, Group A pesticides, iron, mercury, nitrate, nitrite, total dissolved solids, and total trihalomethanes. Water quality-based effluent limitations (WQBELs) effluent limitations for these constituents, with the exception of chloride, EC, and TDS, are included in this Order. See Table F-5 for a summary of the reasonable potential analyses (RPA). 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. 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. WQBELswere calculated in accordance with section 1.4 of the SIP, as described in Attachment F, Section IV.C.4.

e. **Aldrin.** (See subsection z, Organo-chlorine pesticides.)

f. **Aluminum**. Based on information included in analytical laboratory reports submitted by the Discharger, 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, and, therefore violates the Basin Plan's narrative toxicity objective. U.S. EPA 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. The California drinking water secondary maximum contaminant level is 200 µg/L.

The Discharger uses alum (aluminum sulfate hydrate) in the domestic water treatment plant and prior to filtration in the Phase I WWTF. The alum sludge from the water treatment plant is sent to the wastewater treatment plant. There may be high concentrations of aluminum in the effluent from the Phase I WWTF because of the discharge of alum sludge from the water treatment plant and from the use of alum as a filter aid.

The maximum effluent concentration for aluminum was 540 µg/L, based on 15 samples collected between May 2004 and September 2005, while the maximum observed upstream receiving water aluminum concentration was 2400 µg/L, based on 15 samples collected between March 2004 and June 2005. 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. Applying 40 CFR Section 122.44(d)(1)(vi)(B), effluent limitations for aluminum are included in this Order and are based on U.S. EPA's Ambient Water Quality Criteria for the protection of the beneficial use of freshwater aquatic habitat. This Order contains final Average Monthly Effluent Limitations (AMEL) and Maximum Daily Effluent Limitations (MDEL) for aluminum of 63 µg/L and 159 µg/L, respectively (See Attachment F, Table F-6 for WQBEL calculations). Based on the sample results in the effluent from the Phase I WWTF, the Phase I WWTF would not consistently meet these new effluent limitations for aluminum.

Aluminum exists as aluminum silicate in suspended clay particles, which US EPA acknowledges might be less toxic than other forms of aluminum. Correspondence with US EPA indicates that U.S. EPA's Ambient Water Quality Criteria are not intended to apply to aluminum silicate particles. Therefore, a monitoring method that excludes clay particles would satisfy compliance with the standard. In U.S. EPA's *Ambient Water Quality Criteria for Aluminum—*

1988 [EPA 440/5-86-008], U.S. EPA states that "*[a]cid-soluble aluminum…is probably the best measurement at the present…*" This Order allows the use of acid soluble methods of measurement to show compliance with the effluent limitations for aluminum because the method will exclude aluminum silicate.

Based on the sample results in the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. 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 adopted after September 25, 1995. The water quality-based effluent limitations for aluminum are based on 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. To ensure that timely efforts are made by the Discharger to comply with the aluminum effluent limitations, this Order also requires preparation of a pollution prevention plan in compliance with CWC section 13263.3.

g. Ammonia. Untreated domestic wastewater contains ammonia. Nitrification is a biological process that converts ammonia to nitrate, and denitrification is a process that converts nitrate to nitrogen gas, which is then released to the atmosphere. Ammonia is highly toxic to aquatic life. Therefore, the effluent has a reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

i. Toxicity Criteria. For protection of the Basin Plan's narrative toxicity objective, USEPA's 1999 Update of Ambient Water Quality Criteria for Ammonia provides the applicable water quality criteria. The most stringent acute ammonia criteria are applied when salmonids are present within the water column. Old River at Tracy is a migratory path for salmonids, and they are likely to be present in the river at any time of the year. The chronic ammonia criteria are most stringent when early life stages (ELS) of aquatic species are present. A Department of Fish and Game memorandum dated February 27, 2001, states that ELS of multiple fish and invertebrates species are present in the Delta year-round. Therefore, both acute and chronic ammonia toxicity are based on the assumption that both salmonids and ELS of fishes are present in Old River near the Facility's outfall year-round.

ii. Acute Toxicity. The acute criterion, or criterion maximum concentrations (CMC), for ammonia is a function of pH, and is stated as a 1-hour average concentration. A worst-case scenario occurs when there is little to no dilution of the effluent by the receiving water. Therefore, for the acute criterion, water quality objectives need to be achieved in the effluent at the end-of-pipe. As allowed by the TSD, this Order calculates the CMC using critical conditions that are a combination of worst-case observations. The

receiving water and effluent pH were evaluated to determine the critical pH for calculation of the acute criterion.

15 receiving water pH observations from March 2004 through May 2005 were evaluated to determine the acute design pH. The maximum receiving water pH observation during this time was 8.5 on July 21, 2004. In evaluating the effluent, the maximum receiving water pH is used for calculation of the acute criterion. Therefore, the acute criterion for ammonia was determined by using a pH of 8.5, resulting in a CMC of 2.14 mg/L, ammonia as nitrogen, calculated with salmonids present.

iii. **Chronic Toxicity.** The chronic criterion, or criterion continuous concentration (CCC), for ammonia is a function of both pH and temperature. For ammonia, the CCC is stated as a 30-day average concentration, with the highest 4-day average within the 30-day average not to exceed 2.5 times the CCC. As allowed by the TSD, the CCC is calculated using critical conditions that are a combination of worst-case observations. A worst-case scenario occurs when there is little to no dilution of the effluent by the receiving water. The receiving water and effluent pH and temperature were evaluated to determine the critical pH for calculation of the chronic criterion.

15 receiving water pH observations from March 2004 through May 2005 were evaluated to determine the chronic design pH. For the chronic criterion, the median pH observations were used. The median was chosen for chronic toxicity, because over a period of time receptors would be exposed to a more or less average ammonia concentration. Using this approach, the chronic design pH was calculated as 7.7.

The chronic criterion decreases as temperature increases. Since the effluent and receiving water temperatures vary seasonally, a chronic criterion was calculated for both winter (Nov 1 – May 31) and summer (June 1 – Oct 31). The effluent summer temperature averages less than the receiving water temperature and the effluent winter temperature averages more than the receiving water temperature. The 30-day average winter effluent temperature was used in the calculation of the chronic criterion. Based on 12 measurements, the maximum winter effluent water temperature was 24.9°C and based on 11 temperature measurements the maximum summer receiving water temperature was 25.2°C. Using the chronic design pH of 7.7, this results in a summer chronic criterion of 1.83 mg/L, ammonia as nitrogen, and a winter chronic criterion of 1.83 mg/L, ammonia as nitrogen, calculated with ELS present.

iv. **Effluent Limitations.** Applying 40 CFR Section 122.44(d)(1)(vi)(B), effluent limitations for ammonia are included in this Order and are based on U.S. EPA's Ambient Water Quality Criteria for the protection of the beneficial use of freshwater aquatic habitat. This Order contains final AMEL and MDEL for ammonia of 1.0 mg/L and 2.1 mg/L, respectively (See Attachment F, Table F-7 for WQBEL calculations). The use of seasonal effluent limitations was

considered due to the seasonal variation of temperature of the effluent. However, the acute criterion, which is not dependent on temperature, controls the effluent limitation derivation. Therefore, for the protection of the acute condition (1-hr duration), the ammonia effluent limitations apply year-round. Furthermore, due to periods of no flow in the receiving water, a dilution credit cannot be granted.

v. **Time Schedule.** Based on sample results in the effluent for the Phase I WWTF, the Phase I WWTF may not consistently be able to comply with the effluent limitations. The newly constructed Phase II WWTF has been designed for full nitrification and biological nitrogen removal with an effluent total nitrogen <5 mg/L to achieve compliance with water quality objectives, and will be in operation prior to the onset of a discharge to surface waters.

h. **Bis(2-ethylhexyl)phthalate.** Based on 12 monitoring samples performed by the Discharger from May 2004 through May 2005 from the unchlorinated tertiary filter effluent from the Phase I WWTF, the maximum effluent concentration of bis(2-ethylhexyl)phthalate was 7.4 µg/L for one sample with the reported results ranging from <0.7 µg/L to <8.8 µg/L for the remaining 11 samples. The CTR human health criterion is 1.8 µg/L and municipal and domestic supply is a beneficial use of the receiving water. Therefore, because one sample exceeded the criterion and because the detection levels in some of the samples exceeded the criterion, the discharge has a reasonable potential to cause or contribute to an in-stream excursion of a water quality objective and effluent limitations are necessary. A dilution credit for bis(2-ethylhexyl)phthalate cannot be granted because sufficient information has not been provided to make a determination of the human health dilution credits. This Order contains final AMEL and MDEL for bis(2-ethylhexyl)phthalate of 1.8 µg/L and 3.6 µg/L, respectively (See Attachment F, Table F-8 for WQBEL calculations). If the Discharger provides new information to determine human health dilution credits, this Order may be reopened and the final effluent limitations for bis(2-ethylhexyl)phthalate can be modified.

Based on sample results in the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The Discharger is considered a "New Discharger", under the SIP, because it commenced construction of its Phase I and Phase II WWTP expansions after the effective date of the SIP. Therefore, a compliance time schedule for compliance with the bis(2-ethylhexyl)phthalate effluent limits is established in Time Schedule Order (TSO) No. R5-2007-____ in accordance with Water Code section 13300.

i. **Chloride.** (see Subsection cc. Salinity)

j. **Chlorine Residual**. The Discharger's Phase I WWTF uses chlorine for disinfection, which is extremely toxic to aquatic organisms, and uses a bisulfite

process to dechlorinate the effluent. The Phase I WWTF only discharges to land and is governed by Order No. 98-109. The Phase II WWTF employs ultraviolet (UV) disinfection but retains the existing effluent chlorination and dechlorination system as an emergency backup system. Because of the potential chlorine use, there is reasonable potential for chlorine to be discharged at toxic concentrations from the Phase II WWTF. The Basin Plan contains a narrative toxicity objective. Consistent with 40 CFR 122.44(d), it is appropriate to use the USEPA Ambient Water Quality Criteria for the Protection of Freshwater Aquatic Life, 11 µg/L as a 4-day average (chronic) concentration and 19 µg/L as a 1-hour average (acute) concentration, to implement the narrative toxicity objective. Therefore, this Order includes water quality-based effluent limitations for chlorine based on the USEPA ambient criteria to protect freshwater aquatic life.

The Facility proposes to discharge through a diffuser to Old River. The Regional Water Board does not anticipate residual chlorine impacts to benthic organisms because chlorine residual limitations required in this Order are protective of aquatic organisms in the undiluted discharge. Therefore the Regional Water Board does not anticipate an impact as long as the discharge complies with the effluent limitations.

k. **Chloroform**. (see Subsection hh. Total Trihalomethanes).

l. **Cyanide.** The Phase I WWTF effluent has reasonable potential to cause or contribute to an in-stream excursion above water quality objectives for cyanide. The maximum effluent concentration for cyanide is 10 µg/L, based on 15 samples collected between May 2004 and September 2005. The maximum observed background receiving water concentration was non-detect (<2 µg/L to <17 µg/L), in 17 samples collected between March 2004 and August 2005.

The CTR cyanide aquatic toxicity criteria are 5.2 µg/L as a 4-day average (chronic) concentration and 22 µg/L as a 1-hour average (acute) concentration. This Order contains final AMEL and MDEL for cyanide of 4.1 and 8.9 µg/L (See Attachment F, Table F-10 for WQBEL calculations) to protect freshwater aquatic life.

Based on sample results in the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. The Discharger is considered a "New Discharger", under the SIP, because it commenced construction of its Phase I and Phase II WWTP expansions after the effective date of the SIP. Therefore, a compliance time schedule for compliance with the cyanide effluent limits is established in Time Schedule Order (TSO) No. R5-2007-____ in accordance with Water Code section 13300.

m. Dibromochloromethane. The Phase I WWTF effluent has reasonable potential to cause or contribute to an in-stream excursion above water quality objectives for dibromochloromethane. The maximum effluent concentration of dibromochloromethane is 56 µg/L based on 13 samples collected from May 2004 through May 2005. The CTR human health criterion is 0.4 µg/L, and municipal and domestic supply is a beneficial use of the receiving water. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion of a water quality objective and effluent limitations are necessary. A dilution credit for dibromochloromethane cannot be granted because sufficient information has not been provided to support a determination to grant dilution credits for human health water quality objectives. This Order contains final AMEL and MDEL for dibromochloromethane of 0.41 µg/L and 0.82 µg/L, respectively (See Attachment F, Table F-11 for WQBEL calculations). If the Discharger provides sufficient information to support the granting of human health dilution credits, this Order may be reopened and the final effluent limitations for dibromochloromethane can be modified.

The Discharger's Phase I WWTF is unable to comply with these limitations. The Phase II WWTF employs ultraviolet (UV) disinfection but retains the existing effluent chlorination and dechlorination system as an emergency backup system. Because of the potential chlorine use, there is reasonable potential to exceed the water quality objectives for dibromochloromethane if the effluent is chlorinated. Therefore, this Order includes water quality-based effluent limitations for chlorine based on the USEPA ambient criteria for human health based upon consumption of water and aquatic organisms.

This Order requires the Discharger to commence operation of the Phase II WWTF with its included ultraviolet disinfection prior to discharging to Old River.

n. Dichlorobromomethane. The Phase I WWTF effluent has reasonable potential to cause or contribute to an in-stream excursion above water quality objectives for dichlorobromomethane. The maximum effluent concentration of dichlorobromomethane is 78 µg/L from the Phase I WWTF based on 13 monitoring samples collected from May 2004 through May 2005. The CTR human health criterion is 0.56 µg/L, and municipal and domestic supply is a beneficial use of the receiving water. Therefore, the discharge has a reasonable potential to cause or contribute to an in-stream excursion of a water quality objective and effluent limitations are necessary. A dilution credit for dichlorobromomethane cannot be granted because sufficient information has not been provided to support a determination to grant dilution credits for human health water quality objectives. This Order contains final AMEL and MDEL for dichlorobromomethane of 0.56 µg/L and 1.1 µg/L, respectively (See Attachment F, Table F-12 for WQBEL calculations).

The Discharger's Phase I WWTF is unable to comply with these limitations. The Phase II WWTF employs ultraviolet (UV) disinfection but retains the existing effluent chlorination and dechlorination system as an emergency backup system. Because of the potential chlorine use, there is reasonable

potential to exceed the water quality objectives for dibromochloromethane if the effluent is chlorinated. Therefore, this Order includes water quality-based effluent limitations for chlorine based on the USEPA ambient criteria for human health based upon consumption of water and aquatic organisms.

This Order requires the Discharger to commence operation of the Phase II WWTF with its included ultraviolet disinfection prior to discharging to Old River.

o. Dissolved Oxygen (DO). The Basin Plan contains a numeric site-specific water quality objective for the Delta, in the vicinity of the discharge, that requires that dissolved oxygen concentrations shall not be reduced below 5 mg/L. Old River from the San Joaquin River to the Delta Mendota Canal is listed on the CWA Section 303(d) list for low dissolved oxygen.

Receiving water and effluent DO concentration data are not available. Based on 556 receiving water samples measured in the vicinity of the upstream City of Tracy discharge from 1998 through 2003, the average DO concentration was 8.8 mg/L, with a maximum and minimum of 14.3 mg/L and 4.6 mg/L, respectively. The discharge contains constituents that cause an oxygen demand on the receiving water (e.g. BOD, TSS, ammonia, and nitrogen). Since, at times the receiving water does not comply with the Basin Plan's water quality objective for 5.0 mg/L DO, the discharger has a reasonable potential to cause, or contribute, to an in-stream excursion of the DO water quality objective. Water quality effluent limitations for DO have been included in this Order based on the Basin Plan's water quality objective for DO.

p. Electrical Conductivity. (see Subsection cc. Salinity)

q. Heptachlor. (See subsection z, Organo-chlorine pesticides.)

r. Iron. The effluent has reasonable potential to cause or contribute to an in-stream excursion above water quality objectives for iron. The maximum effluent concentration for iron is 800 µg/L based on 12 samples collected between June 2004 and May 2005. The maximum observed constituent concentration in the background receiving water for iron was 2,900 µg/L in 12 samples collected from March 2004 to May 2005. The Discharger's data does not state whether the results are for total or dissolved iron. The Basin Plan contains a site-specific numeric objective for the Delta of 300 µg/L for iron, expressed as dissolved metal. The secondary MCL is also 300 µg/L, but is expressed as total recoverable metal. The receiving water has exceeded the numeric site-specific Basin Plan objective and the secondary MCL for iron. Therefore, no assimilative capacity is available in the receiving water for iron.

The numeric site-specific objective is applied as a maximum daily limitation, whereas the secondary MCL is applied as a monthly average limitation. For permit effluent limitation derivation, the more stringent site-specific numeric objective applies to the discharge. The limitation must be expressed as total recoverable metal. There have been no approved studies to evaluate

discharge-specific metal translators for iron; therefore, the dissolved Basin Plan objective translates to a total recoverable concentration of 300 µg/L (using a factor of 1.0). An MDEL of 300 µg/L for iron, expressed as total recoverable metal, is included in this Order.

Based on the sample results in the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for iron are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this Order, which was adopted after July 1, 2000. Therefore, a compliance time schedule for compliance with the iron effluent limitations is established in TSO No. R5-2007-XXX in accordance with CWC section 13300.

s. **Mercury.** Effluent samples collected from May 2004 through May 2005 contained mercury concentrations ranging from 0.03 ng/L to 3.7 ng/L. Receiving water monitoring from March 2004 through May 2005 contained mercury water column concentrations ranging from 2.95 ng/L to 20.0 ng/L. In addition, fish tissue monitoring has been conducted in Old River.[1] Based on 8 fish tissue monitoring samples of legally catchable largemouth bass collected from 1998-1999 in Old River near Paradise Cut, fish tissue concentrations ranged from 0.20 mg/kg to 0.58 mg/kg, with an average of 0.39 mg/kg. These fish tissue monitoring data include exceedances of the USEPA recommended criterion for the protection of human health, 0.3 mg/kg in fish tissue, thus demonstrating a lack of assimilative capacity for mercury in Old River. Since mercury is contained in the discharge, there is reasonable potential for the discharge to cause, or contribute to an in-stream excursion of the Basin Plan's narrative toxicity objective, based on the USEPA's recommended fish tissue criterion for the protection of human health.

The CTR contains criteria for mercury. However, the bioaccumulation rates in fish tissue used to calculate the CTR water quality criteria are based only on a laboratory-derived bioconcentration factor that considers organism uptake from water only and does not consider the contribution from the organism's food source. Therefore, the CTR criteria are not protective of actual bioaccumulation conditions in the receiving water. For compliance with the Basin Plan's narrative toxicity objective, the Regional Water Board must apply the USEPA recommended criterion for fish tissue concentration.
The Delta waterways are listed in accordance with CWA section 303(d) as impaired for mercury, based on bioaccumulation of this pollutant in fish tissue. Furthermore, health advisories by the Cal/EPA Office of Environmental Health Hazard Assessment remain in effect for human consumption of fish in the

[1] Sampling performed by San Francisco Estuary Institute. This data only represents fish tissue sampling of trophic level 4 largemouth bass that are of size to be consumed by humans (length greater than legal size limit).

Delta, including Old River at Tracy, due to excessive concentrations of mercury in fish tissue. Regional Water Board staff is developing a draft Methyl Mercury TMDL for the Delta that proposes methyl mercury load reductions for facilities discharging to the South Delta, including Old River. The Delta Methyl Mercury TMDL is scheduled for adoption by the Regional Water Board in June 2006.

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 a 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.

An interim effluent mass limitation for mercury of 0.005 pounds/month (as total recoverable) has been included in this Order. The interim effluent limitation was determined using the current permitted design flow of 5.4 mgd and the maximum observed concentration of 3.7 ng/L.

To track the Discharger's compliance with the interim mass limitation, the Discharger is required to calculate a monthly average of the mass loading for mercury. In addition to the numeric interim mass-based limitation for mercury, this Order requires the Discharger to prepare 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 interim mercury mass loading limitation(s) and the need for a mercury offset program.

t. **Nitrate.** Nitrate is known to cause adverse health effects in humans. The Basin Plan's chemical constituents water quality objective prohibits chemical constituents in concentrations that exceed drinking water MCLs published in Title 22, CCR, or that adversely affect beneficial uses. MUN is a beneficial use of Old River. The California DHS has adopted primary MCLs for the protection of human health for nitrate that is equal to 10 mg/L (measured as nitrogen). Title 22, CCR, Table 64431-A, also includes a primary MCL of 10 mg/L for nitrate measured as nitrogen. The discharge from the Facility has a reasonable potential to cause or contribute to an in-stream excursion above water quality standards for nitrate because of the nitrification and denitrification processes. Effluent limitations for nitrate and nitrite are required pursuant to CWC Section 13263.6 (a). Effluent limits for nitrate is based on the MCLs. To ensure the treatment process adequately denitrifies the waste stream to protect the beneficial uses of municipal and domestic supply, this Order contains average monthly effluent limitations for nitrate of 10 mg/L (measured as nitrogen).

The Phase I effluent has reasonable potential to cause or contribute to an in-stream excursion above water quality objectives for nitrate. The maximum effluent concentration for the Phase I WWTF for nitrate is 11 mg/L based on 13 samples collected between May 2004 and May 2005. However, the Phase II WWTF and the proposed Phase III WWTF have been designed to denitrify with a discharge of <5 mg/L as NO_3-Nand therefore will be able to comply with the effluent limitations.

This Order requires the Discharger to commence operation of the Phase II WWTF and demonstrate compliance with the effluent limitation for nitrate prior to discharge to Old River.

u. **Nitrite.** Nitrite is known to cause adverse health effects in humans. The Basin Plan's chemical constituents water quality objective prohibits chemical constituents in concentrations that exceed drinking water MCLs published in Title 22, CCR, or that adversely affect beneficial uses. The California DHS has adopted primary MCLs for the protection of human health for nitrite that is equal to 1.0 mg/L (measured as nitrogen). Title 22, CCR, Table 64431-A, also includes a primary MCL of 1.0 mg/L for nitrite measured as nitrogen. The discharge from the Phase I WWTF has a reasonable potential to cause or contribute to an in-stream excursion above water quality standards for nitrite because of the nitrification and denitrification processes. Effluent limitations for nitrite are required pursuant to CWC Section 13263.6 (a). Effluent limits for nitrite is based on the MCLs. To ensure the treatment process adequately denitrifies the waste stream, this Order contains average monthly effluent limitations for nitrite of 1.0 mg/L (measured as nitrogen).

Based on sample results in the effluent from the Phase I WWTF, the limitations appear to put the Discharger in potential non-compliance. However, the Phase II WWTF has been designed and constructed but is not yet operational. According to information from the Discharger, the Phase II WWTF and the proposed Phase III WWTF will be able to comply with the effluent limitations for nitrite.

This Order requires the Discharger to commence operation of the Phase II WWTF and demonstrate compliance with the effluent limitation for nitrite prior to discharge to Old River.

v. **Oil and Grease.** The Basin Plan includes water quality objectives for oil and grease and floating material in surface waters, which state: "*Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses*" and that: "[w]*ater shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses*". The anti-degradation provisions of the State Water Resources Control Board, Resolution No. 68-16 state that: " *Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality*

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

The previous permit includes monthly average and daily maximum effluent limitations of 10 mg/L and 15 mg/L, respectively, for oil and grease. Order 98-109 does not require monitoring oil and grease, therefore there is no data from the Phase I WWTF for oil and grease. These effluent limitations are maintained in this Order and are based on the Basin Plan narrative objectives for oil and grease and floating materials and the anti-degradation policy (State Water Board Resolution No. 68-16).

w. Organo-Chlorine Pesticides. Organo-chlorine pesticides include aldrin, alpha BHC, beta BHC, beta endosulfan, delta BHC, 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, chlordane, dieldrin, endrin, endrin aldehyde, alpha endosulfan, endosulfan sulfate, heptachlor, heptachlor epoxide, lindane and toxaphene. Aldrin and heptachlor were detected in the effluent in concentrations as high as 0.002 µg/L, and 0.01 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 anti-degradation policies. The CTR contains numeric criteria for aldrin and heptachlor, of 0.00013 µg/L and 0.00021 µg/L, respectively, for freshwaters from which both water and organisms are consumed.

The detection of aldrin at a median of 0.002 µg/L and a maximum of 0.005 µg/L and heptachlor with a median of <0.005 µg/L and a maximum of 0.023 µg/L in the effluent presents a reasonable potential to exceed the Basin Plan limitations for chlorinated hydrocarbon pesticides and the CTR criteria for aldrin and heptachlor.

Effluent Limitations for Group A organo-chlorine 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.

Based on the sample results in the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for organochlorine pesticides are a new regulatory requirement within this permit, which becomes applicable to the waste discharge with the adoption of this

Order, which was adopted after July 1, 2000. Therefore, a compliance time schedule for compliance with the organochlorine pesticides effluent limitations is established in TSO No. R5-2007-XXX in accordance with CWC section 13300.

x. **Pathogens**. The beneficial uses of the Old River include municipal supply, water contact recreation, and agricultural irrigation supply, and there is 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*l* as a 7-day median. Title 22 also requires that recycled water used as a source of water supply for nonrestricted recreational impoundments be disinfected tertiary recycled water that has been subjected to conventional treatment. A nonrestricted 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.

This Order contains effluent limitations and require a tertiary level of treatment, or equivalent, necessary to protect the beneficial uses of the receiving water. The establishment of tertiary limitations has been previously required for this discharge. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR 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. 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 irrigation, agricultural stock watering, industrial process water supply, industrial service supply, body contact water recreation, other non-body contact water recreation, warm freshwater aquatic habitat, cold freshwater aquatic habitat, warm fish migration habitat, cold fish migration habitat, warm spawning habitat, wildlife habitat, and navigation.

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 allows 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 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.

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-15.00, 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 Old River, including water contact recreation and irrigation uses.

y. **pH.** The Basin Plan includes numeric water quality objectives that the pH "*…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.*" The receiving water is designated as having both COLD and WARM beneficial uses. Effluent limitations for pH are included in this Order and are based on the Basin Plan water quality objective for pH. This Order requires continuous monitoring for pH, and includes instantaneous maximum and minimum pH effluent limitations of 8.5 and 6.5, respectively, which are applied to ensure compliance with the Basin Plan objective.

z. **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, contains a narrative objective, and contains numeric water quality objectives for EC, TDS, Sulfate, and Chloride (See Table F-3).

Table F-3
Salinity Water Quality Criteria and Objectives

Parameter	Agricultural WQ Goal[1]	Secondary MCL[3]			Basin Plan (1995 Bay-Delta Plan)	Effluent	
						Avg	Max
		Recommended	Upper	Short-term Maximum			
EC (µmhos/cm)	700[2]	900	1600	2200	700 (1 Apr – 31 Aug) 1000 (1 Sep – 31 Mar)	951	1600
TDS (mg/L)	450	500	1000	1500	N/A	615	840
Sulfate (mg/L)	N/A	250	500	600	N/A	95	160
Chloride (mg/L)	106	250	500	600	N/A	197	310

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.

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

4 Compliance with the Bay-Delta Plan water quality objectives are determined at three monitoring locations in the South Delta.

i. 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, that would implement the narrative chemical constituent objective, is 450 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). Water Quality for Agriculture 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 450 mg/L water quality goal is intended to prevent reduction in crop yield, i.e., a restriction on use of water, 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, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the TDS, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

The average TDS effluent concentration was 615 mg/L and a ranged from 470 mg/L to 840 mg/L for 13 samples collected by the Discharger from May 2004 through May 2005. These concentrations exceed the applicable water quality goals. The background receiving water TDS ranged from 240 mg/L to 780 mg/L, with an average of 473 mg/L in 15 sampling events performed by the Discharger from March 2004 through May 2005. This data indicates the receiving water frequently exceeds water quality objectives and lacks assimilative capacity for TDS.

ii. Chloride. The secondary MCL for chloride is 250 mg/L, as the 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, that would implement the narrative chemical constituent objective, 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). 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 130-310 mg/L, with an average of 196 mg/L based on 13 samples collected by the Discharger between May 2004 and May 2005. Background concentrations in Old River ranged from 51-180 mg/L, with an average of 100 mg/L based on results from 15 samples collected by the Discharger between March 2005 and May 2005. Both the receiving water and the effluent exceed the water quality goal of 106 mg/L.

iii. **Sulfate.** The secondary MCL for sulfate is 250 mg/L as the 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 54-160 mg/L, with an average of 95 mg/L based on 13 samples collected by the Discharger between March 2004 and May 2005. Background concentrations in Old River ranged from 51-180 mg/L, with an average of 100 mg/L based on results from 15 samples collected by the Discharger between March 2004 and May 2005. The effluent meets the secondary MCL recommended level of 250 mg/L.

iv. **Electrical Conductivity (EC).** The Basin Plan contains site-specific water quality objectives for electrical conductivity for the South Delta established by the D-1641. The water quality objectives have been established at 700 µmhos/cm (from April 1 to August 31) and 1000 µmhos/cm (from September 1 to March 31) based on a 30-day running average for protection of the agricultural beneficial uses. The nearest monitoring station at which D-1641 compliance is monitored is station P-12 (Old River at Tracy Road Bridge), approximately 7 miles east (upstream) of the discharge. The recommended secondary California maximum contaminant level (MCL) for EC is 900 µmhos/cm and the recommended agricultural water quality goal, that would implement the narrative chemical constituent objective, is 700 µmhos/cm 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). The 700 µmhos/cm agricultural water quality goal is intended to prevent reduction in crop yield, i.e., a restriction on use of water, for salt-sensitive crops such as beans, carrots, turnips, and strawberries. These crops are either currently grown in the South Delta or may be grown in the future. Most other crops can tolerate higher EC concentrations without harm, however, as the salinity of the irrigation water increases, more crops are potentially harmed by the EC, or extra measures must be taken by the farmer to minimize or eliminate any harmful impacts.

The average EC effluent concentration was 1001 µmhos/cm and a ranged from 728 µmhos/cm to 1242 µmhos/cm 26 samples collected by the Discharger from September 2004 through September 2006. These levels exceed the applicable goals. The background receiving water EC ranged from 360 µmhos/cm to 1300 µmhos/cm, with an average of 813 µmhos/cm in 15 sampling events performed by the Discharger from March 2004 through May 2005. These data show that the receiving water frequently has no assimilative capacity for EC.

v. **Salinity Issues in the South Delta.** . The *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan) was adopted in May 1995 by the State Water Board. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection. In December 1999 and March 2000, the State Water Board adopted and revised Water Rights Decision 1641 (D-1641) as part of the State Water Board's implementation of the 1995 Bay-Delta Plan. The Bay-Delta Plan contains salinity water quality objectives (see Table F-3) to protect the agricultural beneficial uses. These salinity objectives must be met by DWR and USBR as a requirement of Water Rights permits and licenses issued by the State Water Board for operation of the State Water Project (SWP) and Central Valley Project (CVP).

In D-1641, the State Water Board states, "*Salinity problems in the southern Delta result from low flows in the San Joaquin River and discharges of saline drainage water to the river. The actions of the CVP are the principal causes of the salinity concentrations exceeding the objectives at Vernalis. Downstream of Vernalis, salinity is influenced by San Joaquin River inflow, tidal action, diversions of water by the SWP, CVP, and local water users, agricultural return flows, and channel capacity. Measures that affect circulation in the Delta, such as barriers, can help improve the salinity concentrations.*" D-1641 makes DWR and USBR responsible for meeting the salinity water quality objectives and finds that the installation of permanent south Delta barriers would assist in achieving the objectives. "*The DWR and the USBR are partially responsible for salinity problems in the southern Delta because of hydrologic changes that are caused by export pumping. Therefore, this order amends the export permits of the DWR and of the USBR to require the projects to take actions that will achieve the benefits of the permanent barriers in the southern Delta to help meet the 1995 Bay-Delta Plan's interior Delta salinity objectives by April 1, 2005.*"

vi. **Effluent Salinity Controls**. Effluent limitations based on the MCL, Bay-Delta Plan, or the agricultural water quality goal would likely require construction and operation of a reverse osmosis treatment plant. The State Water Board, in Water Quality Order 2005-005 (for the City of Manteca), states, *"…the State Board takes official notice [pursuant to Title 23 of*

California Code of Regulations, Section 648.2] of the fact that operation of a large-scale reverse osmosis treatment plant would result in production of highly saline brine for which an acceptable method of disposal would have to be developed. Consequently, any decision that would require use of reverse osmosis to treat the City's municipal wastewater effluent on a large scale should involve thorough consideration of the expected environmental effects." The State Water Board states in that Order, "*Although the ultimate solutions to southern Delta salinity problems have not yet been determined, previous actions establish that the State Board intended for permit limitations to play a limited role with respect to achieving compliance with the EC water quality objectives in the southern Delta.*" The State Water Board goes on to say, "*Construction and operation of reverse osmosis facilities to treat discharges…prior to implementation of other measures to reduce the salt load in the southern Delta, would not be a reasonable approach.*"

The Regional Water Board, with cooperation of the State Water Board, has begun the process to develop a new policy for the regulation of salinity in the Central Valley. In a statement issued at the March 16, 2006, Regional Water Board meeting, board member Dr. Karl Longley directed staff to continue to exercise our authority to regulate discharges of salt to minimize salinity increases within the Central Valley. Dr. Longley stated, "*The process of developing new salinity control policies does not, therefore, mean that we should stop regulating salt discharges until a salinity Policy is developed. In the meantime, the Board should consider all possible interim approaches to continue controlling and regulating salts in a reasonable manner, and encourage all stakeholder groups that may be affected by the Regional Water Board's policy to actively participate in policy development.*"

Considering the actions by the Regional Water Board to develop a new salinity policy for the Central Valley and based on the fact that the Discharger could not reasonably be expected to achieve compliance with final salinity water quality-based effluent limits (WQBELs) within the five year life of this Order, on August 4, 2006, Regional Water Board staff recommended for adoption a permit that did not include final WQBELs for salinity. Instead, the proposed Order included an interim performance-based effluent limitation for EC and required the Discharger to implement measures to reduce the salinity in its discharge to Old River. The proposed Order required the Discharger develop and implement a pollution prevention plan for salinity, required the submittal of annual reports demonstrating its efforts to reduce salinity, and established an intermediate salinity goal of 1000 µmhos/cm as EC to be achieved during the permit term. In addition, the proposed Order included a requirement to study the affects of the saline discharge in the South Delta and a reopener provision to allow modification of the permit requirements, if necessary.

The Regional Water Board held a lengthy hearing on this permit at the August 2006 Board meeting, with salinity issues being the major topic of

testimony and Board discussion. The hearing was continued pending a better assessment of the impacts of the discharge on Delta salinity and development of alternative means of regulating salinity for Board consideration. The Regional Water Board was concerned with the possible impacts of the discharge without requiring final WQBELs, especially considering the impaired nature of the southern Delta, and directed staff to work with the Discharger, the Department of Water Resources (DWR), and other stakeholders to model the affects of the discharge in the southern Delta. It was suggested that DWR's Delta Simulation Model II (DSM2), which has been used extensively for the SDIP, could be used for this purpose. A stakeholder group that included representatives from the City of Tracy, Mountain House Community Services District, South Delta Water Agency, California Sportfishing Protection Alliance, DWR, and the Regional Water Board was formed to develop appropriate scenarios for running the DSM2 model. The model was run under reasonable worst-case conditions, with temporary barrier operations to evaluate current conditions and with permanent gates to evaluate future conditions.

The DSM2 modeling demonstrates that even under reasonable worst-case conditions the MHCSD discharge has limited impacts on salinity in the southern Delta. Based on the modeling, the areas of greatest impacts from the MHCSD discharge are limited to the section of Old River between Tracy Blvd and the Delta Mendota Canal. The modeling focused on the months of August and October as critical periods. In August with temporary barriers, the maximum reasonable worst-case monthly average EC increase near the discharge was less than 2 percent[2], with receiving water increases diminishing as you move away from the discharge point. In October, the maximum reasonable worst-case monthly average EC increase is 5 percent[3], due to reduced circulation in Old River. This maximum increase is based on the assumption of low exports from the Central Valley Project (CVP) and State Water Project (SWP) drinking water plants and the south Delta salinity standard in October is 1000 µmhos/cm, for the protection of the MUN beneficial use. Furthermore, the modeling predicted no increases in EC caused by the MHCSD discharge near the CVP or SWP pumping plants under these reasonable worst-case conditions.

The Regional Water Board finds that imposing water quality-based effluent limitations for salinity that require the construction and operation of reverse osmosis facilities to treat discharges prior to implementing other measures to reduce the salt loading in the southern Delta is not a reasonable approach. This Order provides reasonable salinity controls, as described below, that put the Discharger on the path to reducing its salt loading to the Delta.

[2] Ambient and effluent EC of 700 and 1400 µmhos/cm, respectively, and an effluent flow of 3 mgd were assumed for the DSM2 modeling.

[3] Ambient and effluent EC of 1000 and 1400 µmhos/cm, respectively, and an effluent flow of 3 mgd were assumed for the DSM2 modeling.

This Order includes final WQBELs stating that the electrical conductivity in the discharge shall not exceed a monthly average of 700 µmhos/cm (April 1 to August 31) and a monthly average of 1000 µmhos/cm (September 1 to March 31), unless;

(1) The Discharger develops and implements a salinity source control program as approved by the Executive Officer that will identify and implement measures to reduce salinity in discharges from residential, commercial, industrial and infiltration sources in an effort to meet an interim salinity goal of a maximum 500 umhos/cm electrical conductivity increase over the weighted average conductivity of the City of Tracy's water supply; and

(2) When notified by the Executive Officer, the Discharger participates financially in the development of the Central Valley Salinity Management Plan.

Failure to meet conditions (1) and (2), above, would result in the final effluent limitation becoming effective. Furthermore, this Order requires the Discharger to implement measures to reduce the salinity in its discharge to Old River. The Antidegradation Policy (Resolution 68-16) requires that the Discharger implement best practicable treatment or control (BPTC) of its discharge. Special Provisions VI.C.2.c. of this Order requires the Discharger to perform a systematic and comprehensive technical evaluation of each major component of the Facility's waste treatment and control to determine BPTC for each waste constituent, as required by Resolution 68-16. Furthermore, per CWC section 13263.3(d)(1)(D), Special Provisions VI.C.3.b. of this Order requires the Discharger develop and implement a pollution prevention plan for salinity in accordance with CWC section 13263.3(d)(3).

aa. Sulfate. (see Subsection cc. Salinity)

bb. ***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 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.

cc. Temperature. (see Section V.A.4. for rationale for effluent and receiving water temperature limitations.)

dd. Total Dissolved Solids. (see Subsection cc. Salinity)

ee. Total Trihalomethanes. Information submitted by the Discharger indicates that the effluent from the Phase I WWTF contains trihalomethanes (THMs), including 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 January 1, 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 the consumption of the 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 Old River 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 May 2004 through May 2005 indicate that THMs were present with a maximum concentration of 227 µg/L and an average concentration of 79 µg/. Chloroform samples collected over the same period contained a maximum concentration of 79 µg/L and an average concentration of 30 µg/L. The discharge has a reasonable potential to cause or contribute to an in-stream excursion above the water quality objective for MUN use by causing an exceedance of the USEPA primary MCL for total THMs. An AMEL of 80 µg/L for Total THMs is included in this Order and is based on the Basin Plan narrative chemical constituents objective.

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

gg. Turbidity. (see Subsection aa. Pathogens)

4. WQBEL Calculations

a. 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 based upon a design treatment capacity of 3.0 or 5.4 mgd, depending upon the completed phase.

b. 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, bromoform, chlorine residual[4], chloroform, iron, cyanide, dichlorobromomethane, dibromochloromethane, and dissolved oxygen 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.

c. The Discharger conducted monitoring for priority and non-priority pollutants. The analytical results were submitted to the Regional Water Board. The results of these sampling events were used in developing this Order. All detectable results from these analyses are summarized in Tables F-4 and F-5 (below). Unless otherwise noted, all mass limitations in this Order were calculated by

[4] 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.m., above, for rational regarding the chlorine residual effluent limitations.

multiplying the concentration limitation by the design flow and the appropriate unit conversion factors.

Table F-4
Statistics for Effluent Constituents with Detectable Results[1]

Constituent	Units	MEC	Mean	Std. Dev.	CV	# of Samples
2,4-D[2]	µg/L	2.3				4
2,4,5-TP (Silvex)	µg/L	0.24	[2]	[2]	[2]	4
Aluminum	µg/L	540	135	131	0.97	15
Aldrin	µg/L	0.005	0.002	0.002	0.6	4
Antimony	µg/L	0.55	0.28	0.12	0.44	13
Arsenic	µg/L	2.00	1.37	0.31	0.22	13
Barium	µg/L	37	24	8.4	0.35	12
Bentazon	µg/L	1.0	0.45	0.39	0.6	4
Bis(2-ethylhexyl)phthalate	µg/L	7.4	2.1	2.1	1	11
Bromoform	µg/L	19	3.9	5.3	1.4	13
Chloride (mg/L)	mg/L	310	197	55.9	0.28	13
Chloroform	µg/L	79	29.8	30.8	1.0	13
Chromium (total)	µg/L	3.3	1.1	0.73	0.65	13
Copper	µg/L	6.8	3.0	1.8	0.6	9
Cyanide	µg/L	10	4.7	3.5	0.74	16
Dalapon	µg/L	<10	[2]	[2]	[2]	4
Dibromochloromethane	µg/L	56	16.1	16.6	1.0	13
Dichlorobromomethane	µg/L	78	28.4	27.2	0.96	13
Fluoride	µg/L	560	120	141	1.2	14
Foaming Agents (MBAS)	µg/L	74	27	20	0.74	13
Heptachlor	µg/L	0.02	0.01	0.01	0.6	4
Iron[1]	µg/L	800	131	264	2.0	12
Lead	µg/L	1.0	0.41	0.35	0.86	13
Manganese	µg/L	20	7.1	7.4	1.1	11
Mercury	ng/L	3.65	1.3	1.15	0.82	13
Nickel	µg/L	5.8	4.0	1.1	0.26	13
Nitrate (as N)	µg/L	11,000	4,490	3,572	0.79	13
Pentachlorophenol	µg/L	[2]	[2]	[2]	[2]	12
Phosphorus, Total (as P)	µg/L	980	442	414	0.94	13
Selenium	µg/L	2.8	1.20	0.64	0.48	13
Sulfate	mg/L	160	95	36	0.38	13
Thallium	µg/L	[2]	[2]	[2]	[2]	13
Total THMs	µg/L	227	79.0	77.7	0.98	13
Tributylin	µg/L	0.008	0.003	0.002	0.24	13
Zinc	µg/L	10	6.6	2.4	0.4	13

Values Modified from Tentative Order Highlighted in Yellow

Table F-5. Summary of Reasonable Potential Analysis

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
2,3,7,8-TCDD	pg/L	< 2.90	< 2.90	0.013	--	--	0.013	0.014	--	--	No
2,4-D	µg/L	2.30	0.38	70	--	--	--	--	--	70	No
2,4,5-TP (Silvex)	µg/L	0.24	< 0.31	--	--	--	--	--	--	--	No
Aluminum	µg/L	1700	2400	87	750 (1)	87 (1)	--	--	--	200	Yes, MEC>C
Aldrin	µg/L	0.005	< 0.002	0.00013	1.1	0.001	0.00013	0.00014	ND	ND	Yes
Ammonia (as N)	mg/L	32.9	0.26	1.83	2.14 (1)(4)	1.47 (1)(5)	--	--	--	--	Yes, MEC>C
Antimony	µg/L	0.55	0.50	6	--	--	14	4300	--	6	No
Arsenic	µg/L	2	4.5	10	340	150	--	--	--	10	No
Barium	µg/L	83	83	100	--	--	--	--	100	1000	No
Bentazon	µg/L	2.0	< 0.60	680	--	--	680	21,000	--	--	No
Bis(2-ethylhexyl)phthalate	µg/L	7.4	1.0	1.80	--	--	1.8	5.9	--	4	Yes, MEC > C
Bromoform	µg/L	19	< 0.18	4.3	--	--	4.3	360	--	--	Yes, MEC > C & B > C
Chloride	mg/L	496	690	106	860 (1)	230 (1)	--	--	--	106 (6)	Yes, MEC > C & B > C
Chloroform	µg/L	79	0.4	80	--	--	--	--	--	80	Yes, MEC>C
Chromium (total)	µg/L	3.3	6	50	--	--	--	--	--	50	No
Copper	µg/L	6.8	7.1	9.6	14.6 (2)	9.6 (2)	1300	--	10.4	1300	No
Cyanide	µg/L	10	< 17	5.2	22	5.2	700	220,000	50	150	Yes, MEC > C
Dalapon	µg/L	0.55 (7)	< 0.30	110	--	--	--	--	--	--	No
Dibromochloromethane	µg/L	56	< 0.50	0.41	--	--	0.41	34	--	--	Yes, MEC > C
Dichlorobromomethane	µg/L	78	< 0.50	0.56	--	--	0.56	46	--	--	Yes, MEC > C
Fluoride	µg/L	1790	500	2000	--	--	--	--	--	2000	No
Foaming Agents (MBAS)	µg/L	187	< 100	500	--	--	--	--	--	500	No
Heptachlor	µg/L	0.023	< 0.005	0.036	0.086 (3)	0.036 (3)	0.76	0.81	ND	ND	Yes
Iron	µg/L	2940	2900	300	--	--	--	--	300	300	Yes, MEC>C & B > C
Lead	µg/L	1	1.9	2.8	70.9 (2)	2.8 (2)	--	--	--	15	No
Manganese	µg/L	47	300	50	--	--	--	--	50	50	Yes, B > C
Mercury	µg/L	0.00365	20	0.05	reserved	reserved	0.05	0.051	--	2	Yes
Nickel	µg/L	5.8	5.2	55.9	504 (2)	55.9 (2)	--	--	--	100	No
Nitrate (as N)	mg/L	11	4.5	10	--	--	--	--	--	10	Yes, MEC > C
Pentachlorophenol	µg/L	0.065 (7)	0.097	0.28	5.5	--	0.28	8.2	--	1	No
Phosphorous	mg/L	2.9	0.7	--	--	--	--	--	--	--	No
Selenium	µg/L	2.8	2.6	50	--	--	--	--		50	No
Specific Conductace (EC)	µS/cm	1830	1100	700	--	--	--	--	--	700 (6)	Yes, MEC>C & B > C
Sulfate	mg/L	216	180	250	--	--	--	--	--	250	No
Thallium	µg/L	0.5 (7)	0.12	2	--	--	--	--	--	2	No
Total Dissolved Solids (TDS)	mg/L	1330	780	450	--	--	--	--	--	450 (6)	Yes, MEC>C & B > C
Total Trihalomethane	µg/L	227	ND	80	--	--	--	--	--	80	Yes, MEC>C
Zinc	µg/L	10	10	100	126 (2)	127 (2)	--	--	100	5000	No

General Note: All inorganic concentrations are given as total recoverable.

MEC = Projected Maximum Effluent Concentration (calculated using multiplier from Table 3-1, TSD for non-CTR, or 1.0 for CTR).

B = Maximum Receiving Water Concentration or lowest detection level, if non-detect

C = Criterion used for Reasonable Potential Analysis

CMC = Criterion Maximum Concentration (CTR criterion unless otherwise noted)

CCC = Criterion Continuous Concentration (CTR criterion unless otherwise noted)

MCL = Drinking Water Standards Maximum Contaminant Levels

Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective

Footnotes:

(1) USEPA National Recommended Ambient Water Quality Criteria

(2) Calculated using a receiving water hardness of 109 mg/L as $CaCO_3$.

(3) as Endrin

(4) Salmonids present and acute design pH of 8.5

(5) ELS present, chronic design pH of 7.8, and temperature of 26.5C

(6) Agricultural water quality goal

(7) Greatest reported value.

b. Effluent Limitations for water quality-based limitations were calculated in accordance with Section 1.4 of the SIP and the TSD. The following paragraphs describe the general methodology used for calculating Effluent Limitations.

c. **Calculations for Effluent Limitations.** In calculating maximum effluent limitations, the effluent concentration allowances were set equal to the criteria/standards/objectives.

$$ECA_{acute} = CMC \qquad ECA_{chronic} = CCC$$

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

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

where:

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)
D_{HH} =	dilution ratio for human health, agriculture, or other long-term criterion/objective
HH =	human health, agriculture, or other long-term criterion/objective
B_{HH} =	background concentration for human health. (for carcinogens: arithmetic mean of R-1 concentrations, for non-carcinogens: observed maximum R-1 concentration; or lowest detection level if all results are non-detect)

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.

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

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

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

where: $mult_{AMEL}$ = statistical multiplier converting minimum LTA to AMEL
$mult_{MDEL}$ = statistical multiplier converting minimum LTA to MDEL
M_A = statistical multiplier converting CMC to LTA
M_C = statistical multiplier converting CCC to LTA

Water quality-based effluent limitations were calculated for aluminum, ammonia, bis(2-ethyhexl)phthalate, bromoform, chloroform, cyanide, dibromochloromethane, and dichlorobromomethane as follows in Tables F-6 through F-12, below.

Table F-6
WQBEL Calculations for Aluminium

Parameter	Acute	Chronic
Criteria (µg/L) [(1)]	750	87
Dilution Credit	No Dilution	No Dilution
ECA	750	87
ECA Multiplier	0.204	0.373
LTA	153	32.5
AMEL Multiplier (95th%)	(2)	1.95
AMEL (µg/L)	(2)	**63**
MDEL Multiplier (99th%)	(2)	4.90
MDEL (µg/L)	(2)	**159**

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

Table F-7
WQBEL Calculations for Ammonia

Parameter	June 1 to October 31		November 1 to May 31	
	Acute	Chronic	Acute	Chronic
pH (1)	8.5	7.7	8.5	7.7
Temperature °C (2)	N/A	25	N/A	25
Criteria (mg/L) (3)	2.14	1.83	2.14	1.83
Dilution Credit	No Dilution	No Dilution	No Dilution	No Dilution
ECA	2.14	1.83	2.14	1.83
ECA Multiplier	0.321	0.527	0.321	0.527
LTA (4)	0.687	0.96	0.687	0.96
AMEL Multiplier (95th%)	1.55	(5)	1.55	(5)
AMEL (mg/L)	**1.0**	(5)	**1.0**	(5)
MDEL Multiplier (99th%)	3.11	(5)	3.11	(5)
MDEL (mg/L)	**2.1**	(5)	**2.1**	(5)

1 Acute design pH = 8.5 (max. allowed effluent pH), Chronic design pH = median receiving stream Ph
2 Temperature = Maximum 30-day average seasonal effluent temperature
3 USEPA National Recommended Water Quality Criteria to Protect Aquatic Life.
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 acute LTA ($LTA_{acute} < LTA_{chronic}$)

Table F-8
WQBEL Calculations for Bis(2-ethylhexyl)phthalate

Parameter	Acute	Chronic
Criteria (µg/L)	N/A	1.8
Dilution Credit	N/A	No Dilution
ECA	N/A	1.8
AMEL (µg/L) (1)	N/A	**1.8**
MDEL/AMEL Multiplier(2)	N/A	2.01
MDEL (µg/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-9
WQBEL Calculations for Bromoform

Parameter	Acute	Chronic
Criteria (µg/L)	N/A	4.3
Dilution Credit	N/A	No Dilution
ECA	N/A	4.3
AMEL (µg/L) (1)	N/A	**4.3**
MDEL/AMEL Multiplier(2)	N/A	2.01
MDEL (µg/L)	N/A	**8.6**

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 Cyanide

Parameter	Acute	Chronic
Criteria (µg/L) (1)	22	5.2
Dilution Credit	No Dilution	No Dilution
ECA	22	5.2
ECA Multiplier	0.281	0.483
LTA	6.18	2.51
AMEL Multiplier (95th%)	(1)	1.65
AMEL (µg/L)	(1)	**4.1**
MDEL Multiplier (99th%)	(1)	3.56
MDEL (µg/L)	(1)	**8.9**

1 Limitations based on chronic LTA (Chronic LTA < Acute LTA)

Table F-11
WQBEL Calculations for Dibromochloromethane

Parameter	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	2.01
MDEL (µg/L)	N/A	**0.82**

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 Dichlorobromomethane

Parameter	Acute	Chronic
Criteria (µg/L)	N/A	0.56
Dilution Credit	N/A	No Dilution
ECA	N/A	0.56
AMEL (µg/L) [(1)]	N/A	**0.56**
MDEL/AMEL Multiplier[(2)]	N/A	2.01
MDEL (µg/L)	N/A	**1.1**

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.

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 investigate the causes of, and identify corrective actions to reduce or eliminate any observed effluent toxicity.

a. **Acute Aquatic Toxicity.** The Basin Plan states that "…*effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate*…" Effluent limitations for acute toxicity have been included in this Order. WDR Order No. 98-192 required compliance with the testing procedures contained in EPA/600/4-90/027F. In October 2002, the USEPA promulgated EPA-821-R-02-012, revising the previous edition. The new USEPA procedure requires the use of larval stage (0 to 14 days old) fathead minnows or golden shiners.

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. Attachment E of this Order requires quarterly 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.

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. Interim Effluent Limitations

1. Electrical Conductivity (EC) and Aluminum.

The interim limitations for EC and aluminum 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.

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. The interim performance-based effluent limitations are not protective of the beneficial uses of the receiving stream (i.e. municipal and domestic supply and agriculture) and may allow degradation of water quality on a long-term basis. However, the interim limitations establish an enforceable ceiling concentration until compliance with the water quality objectives can be achieved. The Discharger's source water is surface water from the Clifton Forebay with an EC less than 300 µmhos/cm. The Discharger already discourages the use of water softeners. Table F-14, below, summarizes the calculations of the interim performance-based effluent limitations for EC. In addition to enforceable interim effluent limitations, the Discharger is required to demonstrate reasonable progress in reducing salinity in its discharge to Old River. Special Provisions VI.C.3.c. establishes an intermediate goal of 1,000 µmhos/cm EC as a monthly average to be achieved this permit term.

Table F-14
Interim Effluent Limitation Calculation Summary

Parameter	MEC	Mean	Std. Dev.	# of Samples	Interim Limit
Electrical Conductivity	1242	1001	122.6	26	1406
Aluminum	540	135	131	15	567

E. Land Discharge Specifications

1. Anaerobic processes tend to produce aesthetically undesirable odors. To minimize production of undesirable odors, the Discharger is required to maintain at least 1.0 mg/L dissolved oxygen in the upper one foot of the emergency storage pond.

2. Pond levees can fail for a variety of reasons, typically, a lack of maintenance or overtopping due to wave action. The Order requires a minimum pond freeboard of two feet be maintained to prevent overtopping.

F. Reclamation Specifications (Not Applicable)

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 taste and odor. 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, or animals. 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 taste and odor 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), required states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Regional Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that *"[t]he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses.*" The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains Receiving Surface Water Limitations based on the Basin Plan numerical and narrative water quality objectives for biostimulatory substances, chemical constituents, color, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, tastes and odors, temperature, toxicity, turbidity, and electrical conductivity.

   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 receiving surface water limitations are as follows:

a. **Dissolved Oxygen.** The Basin Plan includes a water quality objective that "*[W]ithin the legal boundaries of the Delta, the dissolved oxygen concentrations shall not be reduced below: 7.0 mg/L in the Sacramento River (below the I Street Bridge) and in all Delta waters west of the Antioch Bridge; 6.0 mg/L in the San Joaquin River (between Turner Cut and Stockton, September 1 through November 30); and 5.0 mg/L in all other Delta waters except those bodies of water which are constructed for special purposes and from which fish have been excluded or where the fishery is not important as a beneficial use.*" Numeric Receiving Water Limitations for dissolved oxygen are included in this Order and are based on the Basin Plan objective.

c. **pH.** The Basin Plan includes water quality objectives that the pH "…*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*." The Delta is designated as having both COLD and WARM beneficial uses. The change in pH of 0.5 (standard pH units) is not included as necessary to protect aquatic life in U.S. EPA's Ambient Criteria for the Protection of Freshwater Aquatic Life as long as pH does not fall below 6.5 or exceed 8.5 units. Therefore, an averaging period of 30 days has been applied to the Basin Plan receiving water objective for changes in pH. Numeric Receiving Water Limitations for pH are included in this Order and are based on the Basin Plan objectives for pH.

d. **Temperature.** This Order requires the Discharger to submit a technical report to the Regional Water Board within six months of the discharge to surface waters exceeding 1.25 mgd as a monthly average flow. The technical report shall provide evidence that the discharge is in full compliance with the Thermal Plan requirements (Effluent Limitation IV.A.1.i, and Receiving Water Limitation V.A.13.), and that the discharge will remain in full compliance when average dry weather flows reach 5.4 mgd. If there is reasonable potential to cause or contribute to an exceedance of a water quality objective for temperature, the Discharger shall submit a corrective action plan and implementation time schedule for Regional Water Board approval.

e. **Turbidity.** The Basin Plan includes the following objective: "*Increases 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 10 NTUs, increases shall not exceed 20 percent.*

- *Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTU.*
- *Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent."*

B. Groundwater (Not Applicable)

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 of 40 CFR requires all NPDES permits to specify recording and reporting of monitoring results. Sections 13267 and 13383 of the California Water Code authorize the Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program, Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for 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 (*i.e*., BOD and TSS reduction requirements).

B. Effluent Monitoring

1. Pursuant to the requirements of 40 CFR Section 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.

C. Whole Effluent Toxicity Testing Requirements

The Basin Plan states 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. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances*." The Basin Plan requires that "[a]*s a minimum, compliance with this objective…shall be evaluated with a 96-hour bioassay*." This Order requires both acute and chronic toxicity monitoring to evaluate compliance with this water quality objective.

The receiving surface water for the WWTF is Old River, an inland surface water providing freshwater aquatic habitat. Beneficial uses of Old River include warm

freshwater habitat (WARM); cold freshwater habitat (COLD); warm and cold migration of aquatic organisms (MIGR); warm and cold spawning, reproduction, and/or early development (SPWN); and wildlife habitat (WILD). Given that the receiving stream has beneficial uses of cold freshwater habitat, cold migration of aquatic organisms, and cold spawning, reproduction, and/or early development, it is appropriate to use a cold/warm-water species such as *O. mykiss* (rainbow trout) for aquatic toxicity bioassays.

USEPA has approved test methods for of *Pimephales promelas*, *Selenastrum capricornutum*, and *Ceriodaphnia dubia* for assessing chronic toxicity in freshwater organisms.

1. Acute Toxicity.

Monthly 96-hour bioassay tests are required to demonstrate compliance with the effluent limitation for acute toxicity (Effluent Limitations IV.A.1.d.).

2. Chronic Toxicity.

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

3. Dilution Water.

The toxicity test normally calls for receiving water to be used as dilution water. However, due to the significant tidal influence and lack of dilution in the vicinity of the discharge, use of receiving water is inappropriate for use as dilution water because there is not an "upstream" location that is not potentially mixed with effluent.

D. Receiving Water Monitoring

1. Surface Water

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

b. The objective of receiving water monitoring is to measure the impact of effluent mixed with receiving water. The concept of an upstream and downstream sampling location is based upon the premise that stream water flows in one direction. However, the river flow direction changes depending upon tidal stages and when the barriers are in place, the barrier blocks the flow. Effluent may mix with river water to the barrier location, into Wicklund Cut, and over two miles towards Tracy. This Order requires the discharger to sample the receiving water in four different locations: near the barrier, mid-river at the outfall, from Wicklund Cut, and at a location towards Tracy because the effluent will mix with river water at all of those locations and may have different impacts, depending upon the location.

2. Groundwater (Not Applicable)

E. Other Monitoring Requirements

1. Biosolids Monitoring

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.

2. Municipal Water Supply Monitoring.

The Discharger is required to monitor the municipal water supply annually to report the quality of the Discharger's municipal water supply.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which in accordance with 40 CFR Sections 122.41 and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D to the Order.

Title 40 CFR 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. 40 CFR 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 40 CFR Sections 122.41(j)(5) and (k)(2) because the enforcement authority under the CWC is more stringent. In lieu of these conditions, this Order incorporates by reference CWC Section 13387(e).

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

B. Special Provisions

1. Reopener Provisions

Upon adoption of any applicable water quality standard for receiving waters by the Regional Water Board or the State Water Board pursuant to the CWA and regulations adopted thereunder, this permit may be reopened and receiving water limitations added.

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

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

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

b. **Mercury (Special Provisions VI.C.1.b.).** This provision allows the Regional Water Board to reopen this Order in the event mercury is found to be causing toxicity based on acute or chronic toxicity test results, or if a TMDL program is adopted. In addition, this Order may be reopened if the Regional Water Board determines that a mercury-offset program is feasible for Dischargers subject to NPDES permits.

c. **Effluent Recycling**. If the Discharger proposes effluent recycling, this Order may be reopened and revised as appropriate.

d. **Temperature (Special Provisions VI.C.1.d.).** This provision requires the discharger, after reaching 1.25 mgd discharge, to perform a study and to provide a technical report to demonstrate that the discharge is in full compliance with Thermal Plan requirements. Based upon the results of the study, the Regional Water Board may reopen this Order to incorporate additional findings and requirements, as appropriate.

e. **Pollution Prevention (Special Provisions VI.C.1.d.).** This Order requires the Discharger prepare pollution prevention plans following CWC Section 13263.3(d)(3) for salinity and mercury. 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.

f. **Whole Effluent Toxicity (Special Provisions VI.C.1.e.).** 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.

g. **Dilution Credits**. As discussed in the Fact Sheet, Section IV.C.2.b., the Discharger has not provided adequate information for the allowance of dilution credits, most importantly, real-time flow monitoring data in the vicinity of the discharge. The Discharger must provide real-time flow monitoring data and supporting mathematical modeling analysis in the vicinity of the discharge demonstrating sufficient dilution is available before this Order may be reopened to allow dilution credits. Adequate real-time flow monitoring data in the vicinity of the discharge is a requirement for any consideration for the allowance of dilution credits for future permit decisions.

h. **Central Valley Drinking Water Policy (Special Provisions VI.C.1.i.)**. The Regional Water Board is currently working with stakeholders to develop a Drinking Water Policy for the Central Valley. Based on the current schedule, the Basin Plan may be proposed to be amended in 2009 or 2010 to incorporate water quality objectives for the protection of drinking water supplies. A reopener has been included in the Order to allow the Regional Water Board to reopen the permit to include appropriate effluent limitations, as necessary, to require compliance with these objectives.

i. **NMFS Reasonable and Prudent Measures.** On September 1, 2006, the National Marine Fisheries Service (NMFS) issued a biological opinion in accordance with section 7 of the Endangered Species Act for the construction and operation of the outfall to Old River from the Mountain House Wastewater Treatment Plant (MHWWTP). NMFS predicts in its biological opinion that the project will result in the incidental take of listed species as a result of exposure to chronic, sublethal concentrations of toxic compounds discharged from the MHWWTP and that reasonable and prudent measures are necessary and appropriate to minimize the incidental take of listed species. This Order may be reopened should the measures required by NMFS result in the need for new or revised effluent limitations or requirements.

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

a. **Chronic Whole Effluent Toxicity Requirements (Special Provisions VI.C.2.a.).** 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.) This Order requires the Discharger to conduct toxicity testing, to determine whether the discharge exhibits toxicity.

Monitoring Trigger. A numeric toxicity monitoring trigger of > 1 TUc (where Tuc = 100/NOEC) is applied in the provision, because this Order does not allow any dilution for the chronic condition. Therefore, a TRE is triggered when the effluent exhibits 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.

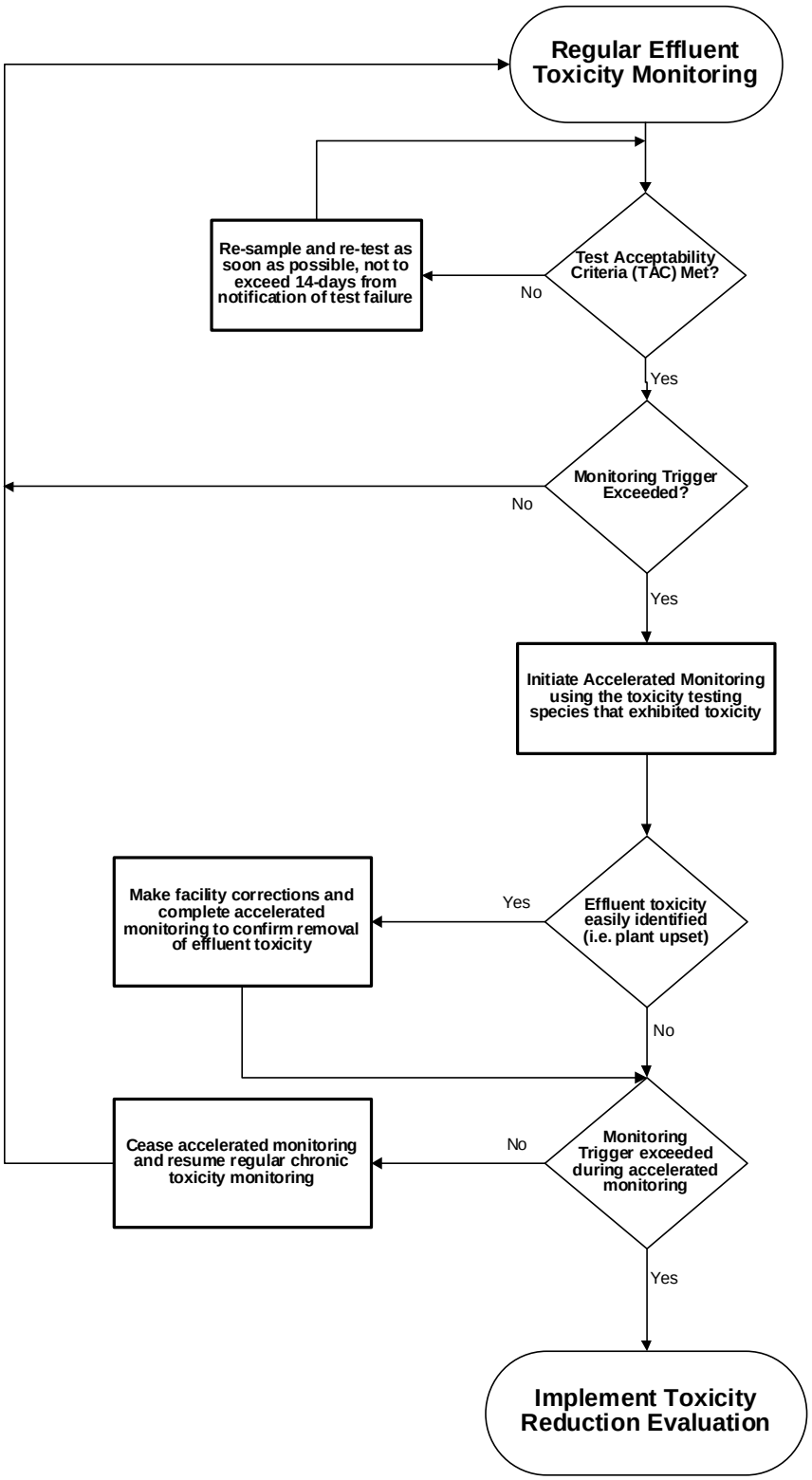
See the WET Accelerated Monitoring Flow Chart (Figure F-3), below, for further clarification of the accelerated monitoring requirements and for the decision points for determining the need for TRE initiation.

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-3
WET Accelerated Monitoring Flow Chart



b. **Temperature Study (Special Provisions VI.C.2.b).** The impact of the discharge on Old River is unknown because there has never been a discharge to Old River. The Discharger shall submit to the Regional Water Board a technical report within six months of the discharge to surface waters exceeding 1.25 mgd as a monthly average flow. The technical report shall provide evidence that the discharge is in full compliance with the Thermal Plan requirements (Effluent Limitation IV.A.1.i, and Receiving Water Limitation V.A.13.), and that the discharge will remain in full compliance when average dry weather flows reach 5.4 mgd. If there is reasonable potential to cause or contribute to an exceedance of a water quality objective for temperature, the Discharger shall submit a corrective action plan and implementation time schedule for Regional Water Board approval.

3. **Best Management Practices and Pollution Prevention**

a. **Pollution Prevention Plan (PPP) for Mercury (Special Provisions VI.C.3.a.).** A PPP for mercury is required in this Order pursuant to 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.

b. **Pollution Prevention Plan (PPP) for Salinity (Special Provisions VI.C.3.b.).** A PPP for salinity is required in this Order per CWC section 13263.3(d)(1)(D). Effluent limitations are not included in this Order, however, the Discharger is required to reduce the salinity of its discharge in order to contribute to attainment of water quality objectives.

c. **Salinity Reduction Goal (Special Provisions VI.C.3.c.).** A salinity goal has been established in this Order to provide a measurable goal for effluent salinity reductions to demonstrate that the Discharger is making reasonable progress in the reduction of salinity in its discharge to Old River. A monthly average effluent salinity of 1000 µmhos/cm as electrical conductivity (EC) has been established as a reasonable goal for this permit term. In the Tulare Lake Basin Plan (Page IV-10), the Regional Water Board adopted a maximum allowable effluent limitation for publicly owned wastewater treatment works discharging to navigable water: "*The maximum electrical conductivity (EC) of a discharge shall not exceed the quality of the source water plus 500 micromhos per centimeter….*" Although not directly applicable to the Facility's discharge to Old River, the Tulare Lake Basin Plan salinity effluent limit does indicate what constitutes a reasonable incremental increase above the Discharger's water supply (i.e. water supply EC plus 500 µmhos/cm). Based on water supply monitoring performed by the Discharger from 2004-2006, the EC of the water supply averaged 373 µmhos/cm, with a maximum of 508 µmhos/cm. Reducing the monthly average effluent salinity to 1000 µmhos/cm as EC is an achievable goal that would demonstrate a reasonable measure of progress in the reduction of salinity discharged to Old River.

d. CWC section 13263.3(d)(3) Pollution Prevention Plans. The pollution prevention plans required for copper, salinity, and 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. Compliance Schedules

a. Discharge Flow Expansion (Phase III Improvements). The Order requires that the Discharger must have completed construction and startup of the Phase III WWTF, must provide evidence that the plant is operating properly, and must provide evidence that the discharge meets the Final Effluent Limitations before the permitted flow may be increased to 5.4 mgd.

b. Compliance Schedule for Final Effluent Limitations for Aluminum (**Special Provisions VI.C.4.f.**)**.** The Discharger shall comply with the time schedule to ensure compliance with the final effluent limitations for aluminum. 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 adopted after September 25, 1995. The water quality-based effluent limitations for aluminum are based on 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.

5. Special Provisions for Municipal Facilities (POTWs Only)

a. Sludge/Biosolids Discharge Specifications (See Special Provisions VI.C.6).

This Order establishes conditions for the handling, storage, and disposal of biosolids.

b. Certified Operators.

i. This Order requires the Discharger to provide certified wastewater treatment plant operators in accordance with Title 23 of the California Code of Regulations, Division 3, Chapter 26.

c. Pretreatment Requirements

i. The Discharger may accept wastes from industries located within the community. The Discharger has estimated that currently no industrial wastewater is discharged to the wastewater treatment plant although the sludge from the water treatment plant is discharged to the wastewater treatment plant. The CWA, 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 may interfere with treatment plant operations or biosolids disposal, and to prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Federal Regulations, 40 CFR 403.8, requires the Discharger develop and submit for approval by the Regional Water Board an acceptable industrial pretreatment program within one-year of adoption of this Order.

6. Other Special Provisions—None

VIII. PUBLIC PARTICIPATION

The Regional Water Board is considering the issuance of waste discharge requirements (WDRs) that will serve as a NPDES permit for the Mountain House Community Services

District 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 the Tracy Press on June 14, 2006.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should 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 **April 20, 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: May 3/4, 2007
Time: 8:30 a.m.
Location: Central Valley Regional Water Quality Control Board, Sacramento Office
11020 Sun Center Drive, #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/centralvalley where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water 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) 464-4645.

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 James Marshall at (916) 464-4772.

ATTACHMENT G – BIBLIOGRAPHY

1. Baseline Environmental Consulting and DKS Associates, *Final Environmental Impact Report, Mountain House Master Plan and Specific Plan*, September 1994.

2. California Department of Water Resources and United States Bureau of Reclamation, *Draft Environmental Impact Report/ Environmental Impact Statement, Interim South Delta Program, Volumes I and II*, July 1996

3. California Regional Water Quality Control Board, Central Valley Region, *Fourth Edition of the Water Quality Control Plan (Basin Plan) for the Sacramento River and the San Joaquin River Basins,* September 15, 1998 (Revised September 2004)

4. ECO:LOGIC Engineering, *Effluent Reclamation Update,* February 2003.

5. J.A. Davis and B.K. Greenfield, San Francisco Estuary Institute and Gary Ichikawa and Mark Stephenson, Moss Landing Marine Laboratory, *Mercury In Sport Fish From The Delta Region (Task 2a)*, September 2002

6. Jones & Stokes, *Tidal Dilution Study of the Mountain House Wastewater Treatment Plant Discharge into Old River*, September 2005

7. Kennedy and Neville*, Basic Statistical Methods for Engineers and Scientists, Second Edition*

8. Pacific Advanced Civil Engineering, Inc., *Technical Memorandum No. 1, NPDES Permit Renewal, Mountain House Wastewater Treatment Plant, Overview of Upgraded Treatment Facilities and Old River Outfall Diffuser System*, October 2005

9. REVISED Water Right Decision 1641, Implementation of Water Quality Objectives for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary; Adopted on December 29, 1999 and revised in accordance with Order WR 2000-02 on March 15, 2000

10. San Joaquin County, *Mountain House New Community, Master Plan,* Adopted November 10, 1994, As Amended September 12, 2000.

11. South Delta Improvement Program – Draft Environmental Impact Statement/Environmental Impact Report, October 2005

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

13. State Water Resources Control Board, California Environmental Protection Agency, *Water Quality Control Plan for the Control of Temperature in the Coastal*

and Interstate Waters and Enclosed Bays and Estuaries of California, September 1975

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

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

16. ECO:LOGIC, *Analysis of Effluent Discharge to Old River*, 1998, *Converting Farm Land to Urban Use: A Salinity Impact Assessment Update*, 2003