CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN DIEGO REGION

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ORDER NO. R9-2010-0012
NPDES NO. CA0108952

WASTE DISCHARGE REQUIREMENTS FOR THE SWEETWATER AUTHORITY RICHARD A. REYNOLDS DESALINATION FACILITY DISCHARGE TO THE LOWER SWEETWATER RIVER BASIN SAN DIEGO COUNTY

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

Table 1. Discharger Information

Discharger	Sweetwater Authority
Name of Facility	Richard A. Reynolds Desalination Facility
Facility Address	3066 North Second Avenue
	Chula Vista, CA 91910
	San Diego County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a minor discharge.	

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

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001a	Demineralization Brine (Existing Location)	32 º 39' 34" N	117 º 05' 00" W	Tidal Prism of San Diego Bay via Upper Paradise Creek Flood Control Channel
001b	Demineralization Brine (Proposed Relocation)	32 º 39'19.98" N	117 º 05'26.22" W	Tidal Prism of San Diego Bay via Lower Sweetwater River
002	Storm Water Runoff, Chlorine Contact-Tank Overflow, Plant Feed-Water Dump, Groundwater Well-purge Water (San Diego Formation Wells [SDFs] No. 1, No. 2, and No. 6)	32 º 39' 31" N	117 º 05' 02" W	Tidal Prism of San Diego Bay via Upper Paradise Creek Flood Control Channel
003	Well-purge Water (SDF No. 3)	32 º 39' 29" N	117 º 04' 41" W	Lower Sweetwater River
004	Well-purge Water (SDF No. 4	32 º 39' 26" N	117 º 04' 36" W	Lower Sweetwater River
005	Well-purge Water (SDF No. 5)	32 º 39' 25" N	117 º 04' 31" W	Lower Sweetwater River
006	Well-purge Water (SDF No. 7)	32˚39' 12.38"N	117˚ 04' 50.48"W	Lower Sweetwater River
007	Well-purge Water (SDF No. 8)	32˚38' 57.71"N	117˚ 05' 29.22"W	San Diego Bay
008	Well-purge Water (SDF No. 9)	32˚38' 16.51"N	117˚ 05' 02.37"W	San Diego Bay
009	Well-purge Water (SDF No. 10)	32˚38' 15.59"N	117˚ 04' 30.03"W	San Diego Bay
010	Well-purge Water (SDF No. 11)	32˚38' 27.84"N	117˚ 05' 02"W	San Diego Bay

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	**May 12, 2010**
This Order shall become effective on:	**July 1, 2010**
This Order shall expire on:	**July 1, 2015**
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	**180 days prior to the Order expiration date**

I, David W. Gibson, 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, San Diego Region, on May 12, 2010.

David W. Gibson
Executive Officer

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I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	**Sweetwater Authority**
Name of Facility	**Lower Sweetwater River Basin, Groundwater Demineralization Plant**
Facility Address	**3066 North Second Avenue**
	Chula Vista, CA
	San Diego County
Facility Contact, Title, and Phone	**Don Thomson, Director of Water Quality, Sweetwater Authority, (619) 409-6802**
Mailing Address	**Post Office Box 2328** **Chula Vista, CA 91912-2328**
Type of Facility	**Groundwater Demineralization Plant**
Facility Design Flow	**0.8 millions gallons per day (MGD) at 001a (existing discharge)** **1.0 MGD during the months of December – May at 001a** **or** **2.5 MGD at 001b (upon relocation)**

II. FINDINGS

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Water Board), finds:

A. Background. Sweetwater Authority, (hereinafter Discharger) is currently discharging up to 0.8 MGD pursuant to Order No. R9-2004-0111 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0108952. The Discharger submitted a Report of Waste Discharge, dated December 22, 2008 and applied for a NPDES permit renewal to discharge up to 1.0 MGD under existing conditions and up to 2.5 MGD, upon relocation, of demineralization brine and miscellaneous groundwater discharges from the Richard A. Reynolds Desalination Facility**,** hereinafter Facility. Supplemental information was submitted on January 21, 2009 and June 26, 2009. The application was deemed complete on June 26, 2009.

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

B. Facility Description. The Discharger owns and operates a groundwater demineralization plant. Plant feed water is currently drawn from six San Diego Formation wells. Five additional wells will be constructed allowing the plant to draw from a total of eleven San Diego Formation Wells._The demineralization process includes cartridge filtration and reverse osmosis. The main waste stream is a brine concentrate that is discharged through Discharge Point No. 001, redesignated 001a (see table on cover page), to the Tidal Prism of the San Diego Bay via Upper Paradise Creek Flood Control Channel.

The Facility currently discharges a maximum of 0.8 MGD. This Order has been revised to allow the Discharger to increase the flow at point 001a from 0.8 MGD to 1.0 MGD (only) during the months of December through May. The Discharger proposes to relocate the Discharge further downstream, designated Discharge Point No. 001b, as mitigation for a proposed increase in flow to 2.5 MGD. Intermittent flows of well purge water, plant feed dump water, and chlorine contact tank water are discharged through Discharge Point No. 002 to the Tidal Prism of the San Diego Bay via Upper Paradise Creek Flood Control Channel. Well purge water is discharged through Discharge Point Nos. 003, 004, 005, and 006 to the Lower Sweetwater River. Well purge water from Discharge Points No.'s 007, 008, 009, and 010 will be discharged to San Diego Bay. The Upper Paradise Creek Flood Control Channel, the Tidal Prism of the San Diego Bay, the Lower Sweetwater River, and San Diego Bay are all waters of the United States, within the San Diego Bay Watershed. Attachment B provides a map of the area around the facility. Attachment C provides a flow schematic of the facility.

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

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

E. California Environmental Quality Act (CEQA). Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177. The Discharger has, however, prepared an Environmental Impact Report for the proposed expansion which was certified on February 24, 2010.

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[1], require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on 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.

Section 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section

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

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 section 122.44(d)(1)(vi).

H. Water Quality Control Plans. The Regional Water Board adopted a Water Quality Control Plan for the San Diego Region (hereinafter Basin Plan) on September 8, 1994, 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 established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The tidal prism portion of the Sweetwater River is an exception noted in the Basin Plan. Beneficial uses applicable to the Lower Sweetwater River and the Tidal Prism of the San Diego Bay are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001a, 002	Tidal Prism of the San Diego Bay via Upper Paradise Creek Flood Control Channel and Sweetwater River	Industrial service supply (IND), navigation (NAV), contact water recreation (REC1), non-contact water recreation (REC2), commercial and sport fishing (COMM), biological habitats of special significance (BIOL), estuarine habitat (EST), wildlife habitat (WILD), preservation of rare, threatened or endangered species (RARE), marine habitat (MAR), migration of aquatic organisms (MIGR), spawning (SPWN), and shellfish harvesting (SHELL).
001b	Tidal Prism of the San Diego Bay via Lower Sweetwater River	Industrial service supply (IND), navigation (NAV), contact water recreation (REC1), non-contact water recreation (REC2), commercial and sport fishing (COMM), biological habitats of special significance (BIOL), estuarine habitat (EST), wildlife habitat (WILD), preservation of rare, threatened or endangered species (RARE), marine habitat (MAR), migration of aquatic organisms (MIGR), spawning (SPWN), and shellfish harvesting (SHELL).
003, 004, 005, and 006	Lower Sweetwater River	Existing: Industrial service supply (IND), non-contact water recreation (REC2), warm freshwater habitat (WARM), wildlife habitat (WILD). Potential: Contact water recreation (REC1)
007, 008, 009, and 010	San Diego Bay	Industrial service supply (IND), navigation (NAV), contact water recreation (REC1), non-contact water recreation (REC2), commercial and sport fishing (COMM), biological habitats of special significance (BIOL), estuarine habitat (EST), wildlife habitat (WILD), preservation of rare, threatened or endangered species (RARE), marine habitat (MAR), migration of aquatic organisms (MIGR), spawning (SPWN), and shellfish harvesting (SHELL).

Requirements of this Order implement the Basin Plan.

The State Water Board adopted the *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 implement the Thermal Plan.

The State Board adopted the *Water Quality Control Policy for Enclosed Bays and Estuaries of California* (*Bays and Estuaries Policy*) on May 16, 1974. The *Bays and Estuaries Policy* establishes principles for management of water quality, quality requirements for waste discharges, discharge prohibitions, and general provisions to prevent water quality degradation and to protect the beneficial uses

of waters of enclosed bays and estuaries. These principles, requirements, prohibitions, and provisions have been incorporated into this Order.

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 forty criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 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 CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

K. **Compliance Schedules and Interim Requirements**. 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. Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new or revised water quality objective. This Order does not contain a compliance schedule for the SIP.

State Water Resources Control Board Resolution No. 2008-0025, *Policy for Compliance Schedules in National Pollutant Discharge Elimination System Permits*, authorizes a Water Board to include a compliance schedule in a permit for an existing Discharger to implement a new, revised or newly interpreted water quality objective or criterion in a water quality standard that results in a permit limitation more stringent that the limitation previously imposed where the Water Board determines that the Discharger has complied with the application requirements of Resolution No. 2008-0025 and has demonstrated that the

discharger needs additional time to implement actions to comply with the limitation. These actions may include, but are not limited to, designing and constructing facilities or implementing new or significantly expanded programs and securing financing, if necessary, to comply with a permit limitation specified to implement the standard. This Order contains a compliance schedule in accordance with Resolution No. 2008-0025.

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. § 131.21; 65 Fed. Reg. 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 applied in the Order consist of restrictions on oil and grease, settleable solids, turbidity, and pH as specified in Table A of the Ocean Plan and for total suspended solids based on BPJ. A discussion of technology-based restrictions is discussed in section IV.B of the Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based 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 section 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations for priority pollutants 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 CWA" pursuant to section 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

N. Antidegradation Policy. Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law.

Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The 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 the permitted discharge is consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

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

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

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

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

Section 13263.3 of the California Water Code states that pollution prevention should be the first step in the hierarchy for reducing pollution and managing wastes. Further, section 13300.3 (d)(1) states that a Regional Water Board may

require a Discharger to complete and implement a pollution prevention plan if the Board determines pollution prevention is necessary to achieve a water quality objective. The results of a reasonable potential analysis and other evaluations of effluent data detailed in section IV.C.3 of Attachment F to this Order (Fact Sheet) indicate the Discharger has potential to contribute to exceedances of water quality objectives. This Order requires the Discharger to develop and implement a pollution prevention plan for copper, nickel, selenium, total nitrogen, and total phosphorus in brine discharges at Discharge Point No. 001a and 001b; and copper in well purge water and plant feed dump water at Discharge Point No. 002 and to help reduce pollutants in the wastewaters to levels below water quality criteria and obtain consistent compliance with effluent limitations.

S. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections VI.C. of this Order are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

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

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

THEREFORE, IT IS HEREBY ORDERED, that Order No. R9-2004-0111 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

A. Compliance with the waste discharge prohibitions contained in the Basin Plan and listed in *Attachment B* hereto is required as a condition of this Order.

B. Discharges of wastes in a manner or to a location which have not been specifically authorized by this Order and for which valid waste discharge requirements are not in force are prohibited.

C. Wastes shall not be discharged into or adjacent to areas where the protection of beneficial uses requires spatial separation from waste fields.

D. The discharge of municipal and industrial waste sludge and untreated sludge digester supernatant, centrate, or filtrate to San Diego Bay, or into a waste stream that discharges to San Diego Bay is prohibited.

E. The deposition of rubbish or refuse into San Diego Bay or at any place where they would be eventually transported to San Diego Bay is prohibited. Rubbish and refuse include any cans, bottles, paper, plastic, vegetable matter, or dead animals or dead fish deposited or caused to be deposited by man.

F. The discharge or bypassing of untreated waste to San Diego Bay is prohibited.

G. New discharges of municipal wastewaters and industrial process waters (exclusive of cooling water discharges) to San Diego Bay which are not consistently treated and discharged in a manner that would enhance the quality of receiving waters above that which would occur in the absence of the discharge, are prohibited.

H. The discharges of reverse osmosis brine concentrate to San Diego Bay in excess of a monthly average flow rate of 0.8 MGD (June thru November) and 1.0 MGD (December thru May) at it's current location (001a) or 2.5 MGD upon relocation of the discharge (001b) is prohibited unless the Discharger obtains revised waste discharge requirements authorizing an increased flow rate.

I. The discharge of wastes to the Upper Paradise Creek Flood Control Channel, to the tidal prism of the Lower Sweetwater River (part of San Diego Bay), and the Sweetwater River containing concentrations of pollutants in excess of those identified in Section IV.A.1 – A.6 *Effluent Limitations* of this Order are prohibited.

J. Odors, vectors, and other nuisances of waste origin beyond the limits of the property controlled by Discharger are prohibited.

K. The discharges of waste, exclusive of reverse osmosis brine concentrate, groundwater well-purge water, plant feed-water dump, and chlorine contact tank discharges as discussed in the Findings of this Order or the Fact Sheet for this Order, are prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. Interim Effluent Limitations – Discharge Point No. 001a (June through November)

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001a, with compliance measured at Monitoring Location EFF-001a as described in the attached MRP:

Table 6a. Interim Effluent Limitations – Brine at Discharge Point No. 001a (June through November)

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow Rate	MGD	0.8	--	--	--
Oils and Grease	mg/l	25			75
Total Suspended Solids	mg/l	30			50
Settleable Solids	mg/l	1.0			3.0
Turbidity	NTU	75			225
pH	standard units	--	--	6.0	9.0
Salinity	ppt[2]	8-11	--	--	--
Nitrate Nitrogen, Total (as N)	mg/L	--	5	--	--
	lbs/day[1]	--	33	--	--
Nitrogen, Total (as N)	mg/L	--	1.0	--	--
	lbs/day[1]	--	6.7	--	--
Phosphorus, Total (as P)	mg/L	--	0.1	--	--
	lbs/day[1]	--	0.67	--	--
Copper, Total Recoverable	µg/L	2.9	5.8	--	--
	lbs/day[1]	0.019	0.039	--	--
Nickel, Total Recoverable	µg/L	6.6	14	--	--
	lbs/day[1]	0.044	0.09	--	--
Selenium, Total Recoverable	µg/L	4.1	8.2	--	--
	lbs/day[1]	0.027	0.055	--	--

1. Based on a flow of 0.8 MGD
2. ppt = parts per thousand

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

c. The discharge of waste to the Lower Sweetwater River and the Tidal Prism of the San Diego Bay shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or other aquatic life.

2. Interim Effluent Limitations – Discharge Point No. 001a (December through May)

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001a, with compliance measured at Monitoring Location EFF-001a as described in the attached MRP:

Table 6b. Interim Effluent Limitations – Brine at Discharge Point No. 001a (December through May)

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow Rate	MGD	1.0	--	--	--
Oils and Grease	mg/l	25			75
Total Suspended Solids	mg/l	30			50
Settleable Solids	mg/l	1.0			3.0
Turbidity	NTU	75			225
pH	standard units	--	--	6.0	9.0
Salinity	ppt[2]	8-11	--	--	--
Nitrate Nitrogen, Total (as N)	mg/L	--	5	--	--
	lbs/day[1]	--	42	--	--
Nitrogen, Total (as N)	mg/L	--	1.0	--	--
	lbs/day[1]	--	8.3	--	--
Phosphorus, Total (as P)	mg/L	--	0.10	--	--
	lbs/day[1]	--	.83	--	--
Copper, Total Recoverable	µg/L	2.9	5.8	--	--
	lbs/day[1]	0.024	0.048	--	--
Nickel, Total Recoverable	µg/L	6.6	14	--	--
	lbs/day[1]	0.055	0.12	--	--
Selenium, Total Recoverable	µg/L	4.1	8.2	--	--
	lbs/day[1]	0.034	0.068	--	--

1. Based on a flow of 1.0 MGD
2. ppt = parts per thousand

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

c. The discharge of waste to the Lower Sweetwater River and the Tidal Prism of the San Diego Bay shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or other aquatic life.

3. Final Effluent Limitations – Discharge Point No. 001b

a. Effluent Limitations for Discharge Point 001b shall become effective in accordance with the dates specified in the Compliance Schedule in Section VI.C.6 of this Order. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001b, with compliance measured at Monitoring Location EFF-001b as described in the attached MRP:

Table 6c. Final Effluent Limitations – Brine at Discharge Point No. 001b

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow Rate	MGD	2.5	--	--	--
Oils and Grease	mg/l	25			75
Total Suspended Solids	mg/l	30	--	--	50
Settleable Solids	mg/l	1.0			3.0
Turbidity	NTU	75			225
pH	standard units	--	--	6.0	9.0
Salinity	ppt[2]	8-11	--	--	--
Nitrate Nitrogen, Total (as N)	mg/L	--	5.0	--	--
	lbs/day[1]	--	100	--	--
Nitrogen, Total (as N)	mg/L	--	1.0	--	--
	lbs/day[1]	--	21	--	--
Phosphorus, Total (as P)	mg/L	--	0.1	--	--
	lbs/day[1]	--	2.1	--	--
Copper, Total Recoverable	µg/L	2.9	5.8	--	--
	lbs/day[1]	0.060	0.12	--	--
Nickel, Total Recoverable	µg/L	6.6	14	--	--
	lbs/day[1]	0.14	0.29	--	--
Selenium, Total Recoverable	µg/L	4.1	8.2	--	--
	lbs/day[1]	0.085	0.17	--	--

1. Based on a flow of 2.5 MGD
2. ppt = parts per thousand

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

c. The discharge of waste to the Lower Sweetwater River and the Tidal Prism of the San Diego Bay shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or other aquatic life.

4. Final Effluent Limitations – Discharge Point No. 2

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 002, with compliance measured at EFF-002, as described in the attached MRP.

Table 7a. Effluent Limitations for Well Purge Water from SDF No.1, SDF No.2, SDF No.6, SDF, and Plant Feed-Water at Discharge Point No. 002

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	standard units	--	--	6.0	9.0
Copper, Total Recoverable	µg/L	2.1	5.8	--	--

b. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 002, with compliance measured at INT-002, as described in the attached MRP.

Table 7b. Effluent Limitations for Chlorine Contactor at Monitoring Location INT-001

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	standard units	standard units	--	6.0	9.0
Chlorine, Total Residual	mg/L	--	0[1]	--	--

[1] No detectable concentration.

5. Final Effluent Limitations – Discharge Point Nos. 003, 004, 005, and 006.

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point Nos. 003, 004, 005, and 006 with compliance measured at Monitoring Location EFF-003, EFF-004, EFF-005, and EFF-006 respectively, as described in the attached MRP.

Table 8. Effluent Limitations for Well Purge at Discharge Point Nos. 003, 004, 005, and 006.

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	standard units	--	--	6.0	9.0

6. Final Effluent Limitations – Discharge Points Nos. 007, 008, 009, and 010

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point Nos. 007, 008, 009, and 010 with compliance measured at Monitoring Location EFF-007, EFF-008, EFF-009, and EFF-010 respectively, as described in the attached MRP.

Table 9. Effluent Limitations for Well Purge at Discharge Point Nos. 007, 008, 009, and 010.

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	standard units	--	--	6.0	9.0

7. Performance Goals at Discharge Point No. 001a and 001b

Constituents that do not have reasonable potential or had inconclusive reasonable potential analysis results are referred to as performance goal constituents and are assigned the performance goals listed in the following table. Performance goal constituents shall be monitored at EFF-001a and EFF-001b, but the results will be used for informational purposes only, not compliance determination.

Table 10. Performance Goals Based on the CTR/NTR Criteria.

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
OBJECTIVES FOR THE PROTECTION OF AQUATIC LIFE				
Antimony, Total Recoverable	µg/L	4.30E+03	8.63E+03	--
	lbs/day[2]	2.87E+01	5.76E+01	--
	lbs/day[3]	8.97E+01	1.80E+02	--
Arsenic, Total Recoverable	µg/L	2.95E+01	5.91E+01	--
	lbs/day[2]	1.97E-01	3.95E-01	--
	lbs/day[3]	6.15E-01	1.23E+00	--
Cadmium, Total Recoverable	µg/L	7.66E+00	1.54E+01	--
	lbs/day[2]	5.11E-02	1.03E-01	--
	lbs/day[3]	1.60E-01	3.20E-01	--
Chromium III, Total Recoverable[3]	µg/L	5.27E+02	1.06E+03	--
	lbs/day[2]	3.52E+00	7.06E+00	--
	lbs/day[3]	1.10E+01	2.21E+01	--
Chromium VI, Total Recoverable	µg/L	4.12E+01	8.27E+01	--
	lbs/day[2]	2.75E-01	5.52E-01	--
	lbs/day[3]	8.60E-01	1.72E+00	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
Cyanide, Total Recoverable [4]	µg/L	4.98E-01	1.00E+00	--
	lbs/day[2]	3.33E-03	6.67E-03	--
	lbs/day[3]	1.04E-02	2.09E-02	--
Lead, Total Recoverable	µg/L	6.97E+00	1.40E+01	--
	lbs/day[2]	4.65E-02	9.33E-02	--
	lbs/day[3]	1.45E-01	2.92E-01	--
Mercury, Total Recoverable	µg/L	5.10E-02	1.02E-01	--
	lbs/day[2]	3.40E-04	6.83E-04	--
	lbs/day[3]	1.06E-03	2.13E-03	--
Silver, Total Recoverable	µg/L	1.11E+00	2.24E+00	--
	lbs/day[2]	7.43E-03	1.49E-02	--
	lbs/day[3]	2.32E-02	4.66E-02	--
Zinc, Total Recoverable	µg/L	4.74E+01	9.51E+01	--
	lbs/day[2]	3.16E-01	6.35E-01	--
	lbs/day[3]	9.89E-01	1.98E+00	--
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH				
2,3,7,8 TCDD	µg/L	1.40E-08	2.81E-08	--
	lbs/day[2]	9.34E-11	1.87E-10	--
	lbs/day[3]	2.92E-10	5.86E-10	--
TCDD Equivalents[5]	µg/L	1.40E-08	2.81E-08	--
	lbs/day[2]	9.34E-11	1.87E-10	--
	lbs/day[3]	2.92E-10	5.86E-10	--
Acrolein	µg/L	7.80E+02	1.56E+03	--
	lbs/day[2]	5.20E+00	1.04E+01	--
	lbs/day[3]	1.63E+01	3.26E+01	--
Acrylonitrile	µg/L	6.60E-01	1.32E+00	--
	lbs/day[2]	4.40E-03	8.83E-03	--
	lbs/day[3]	1.38E-02	2.76E-02	--
Benzene	µg/L	7.10E+01	1.42E+02	--
	lbs/day[2]	4.74E-01	9.50E-01	--
	lbs/day[3]	1.48E+00	2.97E+00	--
Bromoform	µg/L	3.60E+02	7.22E+02	--
	lbs/day[2]	2.40E+00	4.82E+00	--
	lbs/day[3]	7.51E+00	1.51E+01	--
Carbon Tetrachloride	µg/L	4.40E+00	8.83E+00	--
	lbs/day[2]	2.94E-02	5.89E-02	--
	lbs/day[3]	9.17E-02	1.84E-01	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
Chlorobenzene	µg/L	2.10E+04	4.21E+04	--
	lbs/day[2]	1.40E+02	2.81E+02	--
	lbs/day[3]	4.38E+02	8.78E+02	--
Chlorodibromomethane	µg/L	3.40E+01	6.82E+01	--
	lbs/day[2]	2.27E-01	4.55E-01	--
	lbs/day[3]	7.09E-01	1.42E+00	--
Dichlorobromomethane	µg/L	4.60E+01	9.23E+01	--
	lbs/day[2]	3.07E-01	6.16E-01	--
	lbs/day[3]	9.59E-01	1.92E+00	--
1,2-Dichloroethane	µg/L	9.90E+01	1.99E+02	--
	lbs/day[2]	6.61E-01	1.33E+00	--
	lbs/day[3]	2.06E+00	4.14E+00	--
1,1-Dichloroethylene	µg/L	3.20E+00	6.42E+00	--
	lbs/day[2]	2.14E-02	4.28E-02	--
	lbs/day[3]	6.67E-02	1.34E-01	--
1,2-Dichloropropane	µg/L	3.90E+01	7.82E+01	--
	lbs/day[2]	2.60E-01	5.22E-01	--
	lbs/day[3]	8.13E-01	1.63E+00	--
1,3-Dichloropropylene	µg/L	1.70E+03	3.41E+03	--
	lbs/day[2]	1.13E+01	2.28E+01	--
	lbs/day[3]	3.54E+01	7.11E+01	--
Ethylbenzene	µg/L	2.90E+04	5.82E+04	--
	lbs/day[2]	1.93E+02	3.88E+02	--
	lbs/day[3]	6.05E+02	1.21E+03	--
Methyl Bromide	µg/L	4.00E+03	8.02E+03	--
	lbs/day[2]	2.67E+01	5.35E+01	--
	lbs/day[3]	8.34E+01	1.67E+02	--
Methylene Chloride	µg/L	1.60E+03	3.21E+03	--
	lbs/day[2]	1.07E+01	2.14E+01	--
	lbs/day[3]	3.34E+01	6.69E+01	--
1,1,2,2-Tetrachloroethane	µg/L	1.10E+01	2.21E+01	--
	lbs/day[2]	7.34E-02	1.47E-01	--
	lbs/day[3]	2.29E-01	4.60E-01	--
Tetrachloroethylene	µg/L	8.85E+00	1.78E+01	--
	lbs/day[2]	5.90E-02	1.18E-01	--
	lbs/day[3]	1.85E-01	3.70E-01	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
Toluene	µg/L	2.00E+05	4.01E+05	--
	lbs/day[2]	1.33E+03	2.68E+03	--
	lbs/day[3]	4.17E+03	8.37E+03	--
1,2-Trans-Dichloroethylene	µg/L	1.40E+05	2.81E+05	--
	lbs/day[2]	9.34E+02	1.87E+03	--
	lbs/day[3]	2.92E+03	5.86E+03	--
1,1,2-Trichloroethane	µg/L	4.20E+01	8.43E+01	--
	lbs/day[2]	2.80E-01	5.62E-01	--
	lbs/day[3]	8.76E-01	1.76E+00	--
Trichloroethylene	µg/L	8.10E+01	1.63E+02	--
	lbs/day[2]	5.40E-01	1.08E+00	--
	lbs/day[3]	1.69E+00	3.39E+00	--
Vinyl Chloride	µg/L	5.25E+02	1.05E+03	--
	lbs/day[2]	3.50E+00	7.03E+00	--
	lbs/day[3]	1.09E+01	2.20E+01	--
2-Chlorophenol	µg/L	4.00E+02	8.02E+02	--
	lbs/day[2]	2.67E+00	5.35E+00	--
	lbs/day[3]	8.34E+00	1.67E+01	--
2,4-Dichlorophenol	µg/L	7.90E+02	1.58E+03	--
	lbs/day[2]	5.27E+00	1.06E+01	--
	lbs/day[3]	1.65E+01	3.30E+01	--
2,4-Dimethylphenol	µg/L	2.30E+03	4.61E+03	--
	lbs/day[2]	1.53E+01	3.08E+01	--
	lbs/day[3]	4.80E+01	9.62E+01	--
4,6-dinitro-o-cresol (aka2-methyl-4,6-Dinitrophenol)	µg/L	7.65E+02	1.53E+03	--
	lbs/day[2]	5.10E+00	1.02E+01	--
	lbs/day[3]	1.60E+01	3.20E+01	--
2,4-Dinitrophenol	µg/L	1.40E+04	2.81E+04	--
	lbs/day[2]	9.34E+01	1.87E+02	--
	lbs/day[3]	2.92E+02	5.86E+02	--
Pentachlorophenol	µg/L	6.47E+00	1.30E+01	--
	lbs/day[2]	4.32E-02	8.66E-02	--
	lbs/day[3]	1.35E-01	2.71E-01	--
Phenol	µg/L	4.60E+06	9.23E+06	--
	lbs/day[2]	3.07E+04	6.16E+04	--
	lbs/day[3]	9.59E+04	1.92E+05	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
2,4,6-Trichlorophenol	µg/L	6.50E+00	1.30E+01	--
	lbs/day[2]	4.34E-02	8.70E-02	--
	lbs/day[3]	1.36E-01	2.72E-01	--
Acenaphthene	µg/L	2.70E+03	5.42E+03	--
	lbs/day[2]	1.80E+01	3.61E+01	--
	lbs/day[3]	5.63E+01	1.13E+02	--
Anthracene	µg/L	1.10E+05	2.21E+05	--
	lbs/day[2]	7.34E+02	1.47E+03	--
	lbs/day[3]	2.29E+03	4.60E+03	--
Benzidine	µg/L	5.40E-04	1.08E-03	--
	lbs/day[2]	3.60E-06	7.23E-06	--
	lbs/day[3]	1.13E-05	2.26E-05	--
Benzo(a)Anthracene	µg/L	4.90E-02	9.83E-02	--
	lbs/day[2]	3.27E-04	6.56E-04	--
	lbs/day[3]	1.02E-03	2.05E-03	--
Benzo(a)Pyrene	µg/L	4.90E-02	9.83E-02	--
	lbs/day[2]	3.27E-04	6.56E-04	--
	lbs/day[3]	1.02E-03	2.05E-03	--
Benzo(b)Fluoranthene	µg/L	4.90E-02	9.83E-02	--
	lbs/day[2]	3.27E-04	6.56E-04	--
	lbs/day[3]	1.02E-03	2.05E-03	--
Benzo(k)Fluoranthene	µg/L	4.90E-02	9.83E-02	--
	lbs/day[2]	3.27E-04	6.56E-04	--
	lbs/day[3]	1.02E-03	2.05E-03	--
Bis(2-Chloroethyl)Ether	µg/L	1.40E+00	2.81E+00	--
	lbs/day[2]	9.34E-03	1.87E-02	--
	lbs/day[3]	2.92E-02	5.86E-02	--
Bis(2-Chloroisopropyl)Ether	µg/L	1.70E+05	3.41E+05	--
	lbs/day[2]	1.13E+03	2.28E+03	--
	lbs/day[3]	3.54E+03	7.11E+03	--
Bis(2-Ethylhexyl)Phthalate	µg/L	5.90E+00	1.18E+01	--
	lbs/day[2]	3.94E-02	7.90E-02	--
	lbs/day[3]	1.23E-01	2.47E-01	--
Butylbenzyl Phthalate	µg/L	5.20E+03	1.04E+04	--
	lbs/day[2]	3.47E+01	6.96E+01	--
	lbs/day[3]	1.08E+02	2.18E+02	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
2-Chloronaphthalene	µg/L	4.30E+03	8.63E+03	--
	lbs/day[2]	2.87E+01	5.76E+01	--
	lbs/day[3]	8.97E+01	1.80E+02	--
Chrysene	µg/L	4.90E-02	9.83E-02	--
	lbs/day[2]	3.27E-04	6.56E-04	--
	lbs/day[3]	1.02E-03	2.05E-03	--
Dibenzo(a,h)Anthracene	µg/L	4.90E-02	9.83E-02	--
	lbs/day[2]	3.27E-04	6.56E-04	--
	lbs/day[3]	1.02E-03	2.05E-03	--
1,2-Dichlorobenzene	µg/L	1.70E+04	3.41E+04	--
	lbs/day[2]	1.13E+02	2.28E+02	--
	lbs/day[3]	3.54E+02	7.11E+02	--
1,3-Dichlorobenzene	µg/L	2.60E+03	5.22E+03	--
	lbs/day[2]	1.73E+01	3.48E+01	--
	lbs/day[3]	5.42E+01	1.09E+02	--
1,4-Dichlorobenzene	µg/L	2.60E+03	5.22E+03	--
	lbs/day[2]	1.73E+01	3.48E+01	--
	lbs/day[3]	5.42E+01	1.09E+02	--
3,3 Dichlorobenzidine	µg/L	7.70E-02	1.54E-01	--
	lbs/day[2]	5.14E-04	1.03E-03	--
	lbs/day[3]	1.61E-03	3.22E-03	--
Diethyl Phthalate	µg/L	1.20E+05	2.41E+05	--
	lbs/day[2]	8.01E+02	1.61E+03	--
	lbs/day[3]	2.50E+03	5.02E+03	--
Dimethyl Phthalate	µg/L	2.90E+06	5.82E+06	--
	lbs/day[2]	1.93E+04	3.88E+04	--
	lbs/day[3]	6.05E+04	1.21E+05	--
Di-n-Butyl Phthalate	µg/L	1.20E+04	2.41E+04	--
	lbs/day[2]	8.01E+01	1.61E+02	--
	lbs/day[3]	2.50E+02	5.02E+02	--
2,4-Dinitrotoluene	µg/L	9.10E+00	1.83E+01	--
	lbs/day[2]	6.07E-02	1.22E-01	--
	lbs/day[3]	1.90E-01	3.81E-01	--
1,2-Diphenylhydrazine	µg/L	5.40E-01	1.08E+00	--
	lbs/day[2]	3.60E-03	7.23E-03	--
	lbs/day[3]	1.13E-02	2.26E-02	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
Fluoranthene	µg/L	3.70E+02	7.42E+02	--
	lbs/day[2]	2.47E+00	4.95E+00	--
	lbs/day[3]	7.71E+00	1.55E+01	--
Fluorene	µg/L	1.40E+04	2.81E+04	--
	lbs/day[2]	9.34E+01	1.87E+02	--
	lbs/day[3]	2.92E+02	5.86E+02	--
Hexachlorobenzene	µg/L	7.70E-04	1.54E-03	--
	lbs/day[2]	5.14E-06	1.03E-05	--
	lbs/day[3]	1.61E-05	3.22E-05	--
Hexachlorobutadiene	µg/L	5.00E+01	1.00E+02	--
	lbs/day[2]	3.34E-01	6.69E-01	--
	lbs/day[3]	1.04E+00	2.09E+00	--
Hexachlorocyclopentadiene	µg/L	1.70E+04	3.41E+04	--
	lbs/day[2]	1.13E+02	2.28E+02	--
	lbs/day[3]	3.54E+02	7.11E+02	--
Hexachloroethane	µg/L	8.90E+00	1.79E+01	--
	lbs/day[2]	5.94E-02	1.19E-01	--
	lbs/day[3]	1.86E-01	3.72E-01	--
Indeno(1,2,3-cd)Pyrene	µg/L	4.90E-02	9.83E-02	--
	lbs/day[2]	3.27E-04	6.56E-04	--
	lbs/day[3]	1.02E-03	2.05E-03	--
Isophorone	µg/L	6.00E+02	1.20E+03	--
	lbs/day[2]	4.00E+00	8.03E+00	--
	lbs/day[3]	1.25E+01	2.51E+01	--
Nitrobenzene	µg/L	1.90E+03	3.81E+03	--
	lbs/day[2]	1.27E+01	2.54E+01	--
	lbs/day[3]	3.96E+01	7.95E+01	--
N-Nitrosodimethylamine	µg/L	8.10E+00	1.63E+01	--
	lbs/day[2]	5.40E-02	1.08E-01	--
	lbs/day[3]	1.69E-01	3.39E-01	--
N-Nitrosodi-n-Propylamine	µg/L	1.40E+00	2.81E+00	--
	lbs/day[2]	9.34E-03	1.87E-02	--
	lbs/day[3]	2.92E-02	5.86E-02	--
N-Nitrosodiphenylamine	µg/L	1.60E+01	3.21E+01	--
	lbs/day[2]	1.07E-01	2.14E-01	--
	lbs/day[3]	3.34E-01	6.69E-01	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
Pyrene	µg/L	1.10E+04	2.21E+04	--
	lbs/day[2]	7.34E+01	1.47E+02	--
	lbs/day[3]	2.29E+02	4.60E+02	--
Aldrin	µg/L	1.40E-04	2.81E-04	--
	lbs/day[2]	9.34E-07	1.87E-06	--
	lbs/day[3]	2.92E-06	5.86E-06	--
alpha-BHC	µg/L	1.30E-02	2.61E-02	--
	lbs/day[2]	8.67E-05	1.74E-04	--
	lbs/day[3]	2.71E-04	5.44E-04	--
beta-BHC	µg/L	4.60E-02	9.23E-02	--
	lbs/day[2]	3.07E-04	6.16E-04	--
	lbs/day[3]	9.59E-04	1.92E-03	--
gamma-BHC	µg/L	6.30E-02	1.26E-01	--
	lbs/day[2]	4.20E-04	8.43E-04	--
	lbs/day[3]	1.31E-03	2.64E-03	--
Chlordane	µg/L	5.90E-04	1.18E-03	--
	lbs/day[2]	3.94E-06	7.90E-06	--
	lbs/day[3]	1.23E-05	2.47E-05	--
4,4'-DDT	µg/L	5.90E-04	1.18E-03	--
	lbs/day[2]	3.94E-06	7.90E-06	--
	lbs/day[3]	1.23E-05	2.47E-05	--
4,4'-DDE	µg/L	5.90E-04	1.18E-03	--
	lbs/day[2]	3.94E-06	7.90E-06	--
	lbs/day[3]	1.23E-05	2.47E-05	--
4,4'-DDD	µg/L	8.40E-04	1.69E-03	--
	lbs/day	5.60E-06	1.12E-05	--
	lbs/day[3]	1.75E-05	3.51E-05	--
Dieldrin	µg/L	1.40E-04	2.81E-04	--
	lbs/day[2]	9.34E-07	1.87E-06	--
	lbs/day[3]	2.92E-06	5.86E-06	--
alpha-Endosulfan	µg/L	2.40E+02	4.81E+02	--
	lbs/day[2]	1.60E+00	3.21E+00	--
	lbs/day[3]	5.00E+00	1.00E+01	--
beta-Endolsulfan	µg/L	2.40E+02	4.81E+02	--
	lbs/day[2]	1.60E+00	3.21E+00	--
	lbs/day[3]	5.00E+00	1.00E+01	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
Endosulfan Sulfate	µg/L	2.40E+02	4.81E+02	--
	lbs/day[2]	1.60E+00	3.21E+00	--
	lbs/day[3]	5.00E+00	1.00E+01	--
Endrin	µg/L	8.10E-01	1.63E+00	--
	lbs/day[2]	5.40E-03	1.08E-02	--
	lbs/day[3]	1.69E-02	3.39E-02	--
Endrin Aldehyde	µg/L	8.10E-01	1.63E+00	--
	lbs/day[2]	5.40E-03	1.08E-02	--
	lbs/day[3]	1.69E-02	3.39E-02	--
Heptachlor	µg/L	2.10E-04	4.21E-04	--
	lbs/day[2]	1.40E-06	2.81E-06	--
	lbs/day[3]	4.38E-06	8.78E-06	--
Heptachlor Epoxide	µg/L	1.10E-04	2.21E-04	--
	lbs/day[2]	7.34E-07	1.47E-06	--
	lbs/day[3]	2.29E-06	4.60E-06	--
PCBs sum[6]	µg/L	1.70E-04	3.41E-04	--
	lbs/day[2]	1.13E-06	2.28E-06	--
	lbs/day[3]	3.54E-06	7.11E-06	--
Toxaphene	µg/L	7.50E-04	1.50E-03	--
	lbs/day[2]	5.00E-06	1.00E-05	--
	lbs/day[3]	1.56E-05	3.14E-05	--

1 Scientific "E" notation is used to express certain values. In scientific "E" notation, the number following the "E" indicates that position of the decimal point in the value. Negative numbers after the "E" indicate that the value is less than 1, and positive numbers after the "E" indicate that the value is greater than 1. In this notation a value of 6.1E-02 represents 6.1×10^{-2} or 0.061, 6.1E+02 represents 6.1×10^{2} or 610, and 6.1E+00 represents 6.1×10^{0} or 6.1.

2 Based on a flow of 0.8 MGD at Discharge Point No. 001a.

3 Based on a flow of 2.5 MGD at Discharge Point No. 001b.

4 If a Discharger can demonstrate to the satisfaction of the Regional Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by (or performance goals may be evaluated with) the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometalic cyanide complexes. In Order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR Part 136, as revised May 14, 1999.

5 TCDD equivalents represent the sum of concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown by the table below. USEPA Method 8280 may be used to analyze TCDD equivalents.

Isomer Group	Toxicity Equivalence Factor
2,3,7,8 – tetra CDD	1.0
2,3,7,8 – penta CDD	0.5
2,3,7,8 – hexa CDD	0.1
2,3,7,8 – hepta CDD	0.01
octa CDD	0.001
2,3,7,8 – tetra CDF	0.1
1,2,3,7,8 – penta CDF	0.05
2,3,4,7,8 – penta CDF	0.5
2,3,7,8 – hexa CDFs	0.1
2,3,7,8 – hepta CDFs	0.01
Octa CDF	0.001

[6] PCBs (polychlorinated biphenyls) represent the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Arolclor-1254, and Arcolor-1260.

Table 11. Performance Goals For Whole Effluent Toxicity

Parameter	Performance Goals			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
Acute Toxicity	Pass/Fail	[1]		
Chronic Toxicity	TUc	[2]	--	1.6

1. Discharges shall achieve a rating of "Pass" for acute toxicity with compliance determined as specified in Section VII.J of this Order.
2. One or more test results with a calculated median value of 1.0 TUc

8. The Discharger shall not cause pollution, contamination, or nuisance, as those terms are defined in CWC 13050, as a result of the treatment or discharge of wastes.

9. All waste treatment, containment and disposal facilities shall be protected against 100-year peak stream flows as defined by the San Diego County flood control agency.

10. All waste treatment, containment and disposal facilities shall be protected against erosion, overland runoff and other impacts resulting from a 100-year frequency 24-hour storm.

11. Collected screenings, sludges, and other solids removed from liquid wastes, shall be disposed of in a manner approved by this Regional Water Board.

12. The discharge of substances for which effluent limitations are not established in this Order shall be prevented, or, if the discharge cannot be prevented, minimized.

B. Interim Effluent Limitations—Not Applicable

C. Land Discharge Specifications – Not Applicable

D. Reclamation Specifications – Not Applicab

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitation

Receiving water limitations are based on water quality objectives contained in the Basin Plan and are a required part of this Order. The discharge shall not cause the following in the Tidal Prism of the San Diego Bay.

1. Physical Characteristics

a. Waters shall not contain oils, greases, waxes, or other materials in concentrations which result in a visible film or coating on the surface of the water or on objects in the water, or which cause nuisance or which otherwise adversely affect beneficial uses.

b. Waters shall not contain floating material, including solids, liquids, foams, and scum in concentrations which cause nuisance or adversely affect beneficial uses.

c. The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

d. Waters shall not contain suspended and settleable solids in concentrations of solids that cause nuisance or adversely affect beneficial uses.

e. Waters shall not contain taste or odor producing substances at concentrations which cause a nuisance or adversely affect beneficial uses.

f. Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. In addition, within the Tidal Prism of the San Diego Bay the transparency of bay waters, insofar as it may be influenced by any controllable factor, either directly or through induced conditions, shall not be less than 8 feet in more than 20 percent of the readings in any zone, as measured by a standard Secchi disk. Wherever the water is less than 10 feet deep, the Secchi disk reading shall not be less than 80 percent of the depth in more than 20 percent of the readings in any zone. Within the Lower Sweetwater River, the Turbidity shall not exceed 20 NTU more than 10 percent of the time during any one year period.

2. Chemical Characteristics

a. The dissolved oxygen concentration shall not at any time be less than 5.0 mg/L. The annual mean dissolved oxygen concentration shall not be less than 7 mg/L more than 10% of the time.

b. Within the Tidal Prism of the San Diego Bay, the pH shall not be changed at any time more than 0.2 units from normal ambient pH. The pH shall not be depressed below 7.0 nor raised above 9.0.

c. The Lower Sweetwater River and the Tidal Prism of the San Diego Bay shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growths cause nuisance or adversely affect beneficial uses.

d. The discharge of wastes shall not cause concentrations of un-ionized ammonia (NH3) to exceed 0.025 mg/l (as N) in the Tidal Prism of the San Diego Bay or the Lower Sweetwater River.

e. No individual pesticide or combination of pesticides shall be present in the water column, sediments or biota at concentration(s) that adversely affect beneficial uses. Pesticides shall not be present at levels which will bioaccumulate in aquatic organisms to levels which are harmful to human health, wildlife or aquatic organisms.

3. Radioactivity

Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal or aquatic life.

4. Toxicity

All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.

5. Temperature

a. The maximum temperature of waste shall not exceed the natural temperature of the receiving waters by more than 20°F.

B. Groundwater Limitations– Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.

2. **Regional Water Board Standard Provisions.** The Discharger shall comply with the following provisions:

   a. The Discharger shall comply with all requirements and conditions of this Order. Any permit non-compliance constitutes a violation of the CWA and/or of the CWC and is grounds for enforcement action, permit termination, revocation and reissuance, or modification, or for denial of an application for permit renewal, modification, or reissuance.

   b. The Discharger shall comply with all applicable federal, state, and local laws and regulations for handling, transport, treatment, or disposal of waste or the discharge of waste to waters of the State in a manner which causes or threatens to cause a condition of pollution, contamination or nuisance as those terms are defined in CWC 13050.

   c. The Porter-Cologne Water Quality Control Act provides for civil and criminal penalties comparable to, and in some cases greater than, those provided for under the CWA.

   d. Any noncompliance with this Order is a violation of the CWC and/or the CWA and is grounds for denial of an application for Order renewal or modification.

   e. No discharge of waste into waters of the State, whether or not the discharge is made pursuant to WDRs, shall create a vested right to continue the discharge. All discharges of wastes into waters of the State are privileges, not rights.

   f. For purposes of this Order, the term "permittee" used in parts of 40 CFR incorporated into this Order by reference and/or applicable to this Order shall have the same meaning as the term "Discharger" used elsewhere in this Order.

   g. This Order expires on July 1, 2015, after which, the terms and conditions of this permit are automatically continued pending issuance of a new Order, provided that all requirements of USEPA's NPDES regulations at 40 CFR 122.6 and the State's regulations at CCR Title 23, section 2235.4 regarding the continuation of expired Orders and waste discharge requirements are met.

h. Except as provided for in 40 CFR 122.7, no information or documents submitted in accordance with or in application for this permit will be considered confidential, and all such information and documents shall be available for review by the public at the office of the Regional Water Board.

i. A copy of this Order shall be maintained on-site at the Facility and shall be available to Regional Water Board, State Water Board, and USEPA personnel and/or their authorized representative at all times. The Discharger shall comply with any interim limitations established by addendum, enforcement action, or revised waste discharge requirements that have been or may be adopted by the Regional Water Board.

j. The Discharger shall comply with any interim limitations established by addendum, enforcement action, or revised waste discharge requirements that have been or may be adopted by the Regional Water Board

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

l. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, effluent limitation, discharge specification, or receiving water limitation of this Order, the Discharger shall notify the Regional Water Board by telephone (858) 467-2952 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 state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

a. This Order may be reopened for modification to include an effluent limitation if monitoring establishes that the discharge causes, has the reasonable potential to cause, or contributes to an excursion above WQOs (Basin Plan, Chapter 3).

b. This Order may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following;

i. Violation of any terms or conditions of this Order;

ii. Obtaining this Order by misrepresentation or failure to disclose fully all relevant fact; or

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

The filing of a request by the Discharger for modifications, revocation and reissuance, or termination of this Order does not stay any condition of this Order. Notification by the Discharger of planned operational or facility changes, or anticipated noncompliance with this Order does not stay any condition of this Order.

c. If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under section 307(a) of the CWA for a toxic pollutant and that standard or prohibition is more stringent than any limitation on the pollutant in this Order, the Regional Water Board may institute proceedings under these regulations to modify or revoke and reissue the Order to conform to the toxic effluent standard or prohibition.

d. This Order may be re-opened and modified, to incorporate in accordance with the provisions set forth in 40 CFR Parts 122 and 124, to include requirements for the implementation of the watershed management approach.

e. This Order may be reopened and modified, in accordance with the provisions set forth in 40 CFR Parts 122 and 124, to include new Minimum Levels (MLs).

f. This Order may be re-opened and modified to revise effluent limitations as a result of future Basin Plan Amendments, or the adoption of a total maximum daily load allocation (TMDL) for the receiving water.

g. This Order may be re-opened upon submission by the Discharger of adequate information, as determined by this Regional Water Board, to provide for dilution credits or a mixing zone, as may be appropriate.

h. This Order may be re-opened and modified to revise the toxicity language once that language becomes standardized.

i. This Order may also be re-opened and modified, revoked and, reissued or terminated in accordance with the provisions of 40 CFR sections 122.44, 122.62 to 122.64, 125.62, and 125.62. Causes for taking such actions include, but are not limited to, failure to comply with any condition of this Order and permit, and endangerment to human health or the environment resulting from the permitted activity.

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

k. This Order may be reopened and modified for effluent copper limitations upon the Dischargers' development and submission of a receiving water-specific copper Water Effects Ration (WER) study.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Toxicity Reduction Requirements

i. Initial Investigation TRE Workplan

Within 90 days of the permit effective date, the Discharger shall prepare and submit a copy of their Initial Investigation Toxicity Reduction Evaluation (TRE) Workplan (1-2 pages) to the Regional Water Board for review. This plan shall include steps the Discharger intends to follow if toxicity is measured above the acute or chronic WET Performance Goal as determined in section V of the MRP and should include, at minimum:

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

(b) A description of methods for maximizing in-house treatment system efficiency, good housekeeping practices, and a list of all chemicals used in operations at the Facility.

(c) If a Toxicity Identification Evaluation (TIE) is necessary, an indication of who would conduct the TIEs (i.e., an in-house expert or outside contractor).

(d) The determination of when a TIE is necessary.

ii. Accelerated Toxicity Testing and TRE/TIE Process

(a) If one of the additional toxicity tests (Attachment E, section V.E) is exceeded, then, within 14 days of receipt of this test result, the Discharger shall initiate a TRE using, based on the type of treatment facility, EPA manual *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants* (EPA/833/B-99/002, 1999) or EPA manual *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989). In conjunction, the Discharger shall develop and implement a detailed TRE Workplan which shall include: further actions undertaken by the Discharger to investigate, identify, and correct the causes of toxicity; actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and a schedule for these actions.

(b) The Discharger may initiate a Toxicity Identification Evaluation (TIE) as part of a TRE to identify the causes of toxicity using the same species and test method and, as guidance, EPA test method manuals: *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures* (EPA/600/6-91/003, 1991); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); and *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054, 1996).

b. Benthic Invertebrate Monitoring Plan

In order to monitor potential impacts to the benthic communities due to increased effluent flow at Discharge Point No. 001b, the Discharger shall develop a plan to monitor benthic invertebrates within the receiving water. The Plan shall be submitted to the Regional Water Board within 180 days of the effective date of this Order. Within the plan, the Discharger shall establish locations upstream of the influence of the discharge and downstream of the discharge. Monitoring shall be conducted according to methodology in *Evaluation of Benthic Assessment Methodology in Southern California Bays and San Francisco Bay (SCCWRP, 2004).* The

progress of plan development, implementation, including any resulting monitoring data and discussion of results shall be submitted in the annual report specified in X.A.3 of the MRP.

c. Macroalgae Monitoring Plan

In order to assess potential impacts from increased loadings of biostimulatory substances due to increased effluent flow at Discharge Point No. 001b, the Discharger shall develop a plan to monitor macroalgae within the receiving water. The Plan shall be submitted to the Regional Water Board within 180 days of the effective date of this Order. The plan shall include sampling for macroalgae at representative sites upstream and downstream of the discharge. Samples shall be analyzed for mass of organic material and percent organic matter. The plan shall also address macroalgae measurements using photographic quadrats. The progress of plan development, implementation, including any macroalgae sampling and photoquadrat monitoring results, and a discussion of results shall be submitted in the annual report specified in X.A.3 of the MRP.

d. Wetland Vegetation Monitoring Plan

In order to assess the potential effects of the increased discharge on the existing vegetation within the Lower Sweetwater River Estuary, the Discharger shall develop a plan to conduct wetland vegetation monitoring. The Plan shall be submitted to the Regional Water Board within 180 days of the effective date of this Order. Within the plan, the Discharger shall identify representative upstream and downstream locations whereby the Discharger shall conduct field observations and transect analysis to identify wetland vegetation species. The progress of plan development, implementation including any resulting monitoring data and discussion of results shall be submitted in the annual report specified in X.A.3 of the MRP

e. Temperature Compliance Determination Plan.

In order to demonstrate compliance with the temperature receiving water limitations in V.A.5.a of this Order, the Discharger shall develop a Plan determine the temperature influence (if any) on the receiving water. The Plan shall be submitted to the Regional Water Board within 60 days of the effective date of this Order. The purpose of the study shall be to demonstrate whether:

i. the effluent at Discharge Point No. 001a complies with V.A.5.a at the point of confluence of the Upper Paradise Creek Flood Control Channel and the Lower Sweetwater River Estuary.

ii. the effluent at Discharge Point No. 001b will comply with the V.A.5.a within the Lower Sweetwater River Estuary.

The Plan shall address both dry weather flow and wet weather flow conditions.

3. Best Management Practices and Pollution Prevention

a. Pollution Prevention Plan. The Discharger shall prepare and implement a pollution prevention plan for copper, nickel, selenium, total nitrogen, and total phosphorus at Discharge Point No. 001a and 001b and copper at Discharge Point No. 002, in accordance with CWC section 13263.3(d)(2). The minimum requirements for the pollution prevention plan are outlined in the Fact Sheet, Attachment F, section VI.G.3. A work plan and time schedule for preparation of the pollution prevention plan shall be completed and submitted to the Regional Water Board within 3 months of the effective date of this Order. The Discharger shall prepare and implement the pollution prevention plan in the event of a serious violation or if an effluent limitation is exceeded four or more times during a period of six consecutive months (in accordance with Section 13385 of the California Water Code).

4. Construction, Operation and Maintenance Specifications– Not Applicable

5. Other Special Provisions

a. Receiving Water Monitoring Locations for Relocated Discharge.

Prior to discharge through Discharge Point No. 001b, the Discharger shall establish receiving water monitoring locations, designated RSW-001b and RSW-002b. The Discharger shall determine an appropriate monitoring location upstream of the influence of the discharge from Discharge Point No. 001b and a downstream monitoring location no further than 50 meters downstream of the discharge. The Discharger shall provide the proposed monitoring locations to the Regional Water Board for approval prior to discharge through Discharger Point No. 001b.

6. Compliance Schedules

The Discharger shall comply with the following time schedule to ensure compliance with the toxicity effluent limitation of this Order:

Task	Compliance Date
Complete Engineering Analysis	Complete
Complete the permitting process necessary to construct	May 12, 2010
Complete financial arrangements for construction	January 2012
Complete Engineering Design	March 2012
Issue Request for Proposals for construction	March 2012
Begin construction	July 2012
Start up and initial testing	October 2013
Complete relocation of brine discharge to Discharge Point 001b	January 2014

The Discharger shall submit to the Regional Board on or before each compliance date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, and shall include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule.

Progress reports shall be submitted annually according to the schedule in Table E-8 of this Order and shall continue until compliance is achieved.

VII. COMPLIANCE DETERMINATION

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

A. General.

Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined in the MRP and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

B. Compliance with Average Monthly Effluent Limitation (AMEL).

If the average of daily discharges over a calendar month exceeds the AMEL for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of noncompliance in a 31-day month). The average of daily discharges over the calendar month that exceeds the AMEL for a parameter will be considered out of compliance for the month only. If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

C. Compliance with Maximum Daily Effluent Limitation (MDEL).

If a daily discharge exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

D. Compliance with Instantaneous Minimum Effluent Limitation

If the analytical result of a single sample is lower than the instantaneous minimum effluent limitation for a parameter, a violation will be flagged and the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of noncompliance with the instantaneous minimum effluent limitation.

E. Compliance with Instantaneous Maximum Effluent Limitation.

If the analytical result of a single sample is higher than the instantaneous maximum effluent limitation for a parameter, a violation will be flagged and the Discharger will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of noncompliance with the instantaneous maximum effluent limitation).

F. Compliance with Temperature Effluent Limitation

Compliance with the temperature limitation shall be based on a 12-month running average (e.g. the average of the weekly readings obtained during any 12 month period). Receiving water monitoring shall be conducted simultaneously with effluent monitoring. For the purposes of this section, simultaneously means no more than 1 hour apart.

G. Mass and Concentration Limitations.

Compliance with mass and concentration effluent limitations for the same parameter shall be determined separately with their respective limitations. When the concentration of a constituent in an effluent sample is determined to be “ND” or “DNQ”, the corresponding mass emission rate (MER) determined from that sample concentration shall also be reported as “ND” or “DNQ”.

H. Compliance with Single-Constituent Effluent Limitations

The Discharger shall be deemed out of compliance with an effluent limitation or discharge specification if the concentration of the constituent in the monitoring sample is greater than the effluent limitation or discharge specification and greater than or equal to the ML.

I. Compliance with Effluent Limitations expressed as a Sum of Several Constituents

Dischargers are out of compliance with an effluent limitation that applies to the sum of a group of chemicals (e.g., PCBs) if the sum of the individual pollutant concentrations is greater than the effluent limitation. Individual pollutants of the group will be considered to have a concentration of zero if the constituent is reported as ND or DNQ.

J. Multiple Sample Data

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

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

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

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

K. Sampling Reporting Protocols

1. Dischargers must report with each sample result the reported ML and the laboratory's current Method Detection Limit (MDL).

2. Dischargers must also report 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 reported ML must be reported "as measured" by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, must be reported as "Detected, but Not Quantified", or DNQ. The laboratory must write the estimated chemical concentration of the sample next to DNQ as well as the words "Estimated Concentration" (may be shorted to Est. Conc.").

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

L. Whole Effluent Toxicity

Compliance with the Acute and Chronic Toxicity Performance Goals for Discharge Point No. 001a and 001b shall be determined according to the MRP section V.

ATTACHMENT A – DEFINITIONS

Acute Toxicity

a. Acute Toxicity (TUa)

Expressed in Toxic Units Acute (TUa)

$$TUa = \frac{100}{\text{96-hr LC 50\%}}$$

b. Lethal Concentration 50% (LC 50)

LC 50 (percent waste giving 50% survival of test organisms) shall be determined by static or continuous flow bioassay techniques using standard marine test species. If specific identifiable substances in wastewater can be demonstrated by the Discharger as being rapidly rendered harmless upon discharge to the marine environment, but not as a result of dilution, the LC 50 may be determined after the test samples are adjusted to remove the influence of those substances.

When it is not possible to measure the 96-hour LC 50 due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$TUa = \frac{\log (100 - S)}{1.7}$$

where:

S = percentage survival in 100% waste. If S > 99, TUa shall be reported as zero.

Areas of Special Biological Significance (ASBS)
Those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. All Areas of Special Biological Significance are also classified as a subset of STATE WATER QUALITY PROTECTION AREAS.

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

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

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

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

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

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

Chronic Toxicity
This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response.

a. Chronic Toxicity (TUc)

Expressed as Toxic Units Chronic (TUc)

$$TUc = \frac{100}{NOEL}$$

b. No Observed Effect Level (NOEL)

The NOEL is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test.

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

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

constituent with limitations expressed in other units of measurement (e.g., concentration).

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

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

Degrade
Degradation shall be determined by comparison of the waste field and reference site(s) for characteristic species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species. Degradation occurs if there are significant differences in any of three major biotic groups, namely, demersal fish, benthic invertebrates, or attached algae. Other groups may be evaluated where benthic species are not affected, or are not the only ones affected.

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

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

Dredged Material
Any material excavated or dredged from the navigable waters of the United States, including material otherwise referred to as "spoil".

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

Enclosed Bays
Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than

75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

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

Estuaries
Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

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

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

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

Material
(a) In common usage: (1) the substance or substances of which a thing is made or composed (2) substantial; (b) For purposes of the Ocean Plan relating to waste disposal, dredging and the disposal of dredged material and fill, MATERIAL means matter of any kind or description which is subject to regulation as waste, or any material dredged from the navigable waters of the United States. See also, DREDGED MATERIAL.

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

with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

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

Method Detection Limit (MDL)
MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, Part 136, Attachment B, revised as of July 3, 1999.

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

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

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

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

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

Pollutant Minimization Program (PMP)
PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based

effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

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

Reported Minimum Level
The ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix II of the Ocean Plan in accordance with section III.C.5.a. of the Ocean Plan or established in accordance with section III.C.5.b. of the Ocean Plan. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the reported ML.

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

Serious Violation

Any waste discharge that violates the effluent limitations contained in the applicable waste discharge requirements for a Group II pollutant, as specified in Appendix A to Section 123.45 of Title 40 of the Code of Federal Regulations, by 20 percent or more or for a Group I pollutant, as specified in Appendix A to Section 123.45 of Title 40 of the Code of Federal Regulations, by 40 percent or more.

Shellfish
Organisms identified by the California Department of Health Services as shellfish for public health purposes (i.e., mussels, clams and oysters).

Significant Difference
Defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

Six-Month Median Effluent Limitation
The highest allowable moving median of all daily discharges for any 180-day period.

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

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

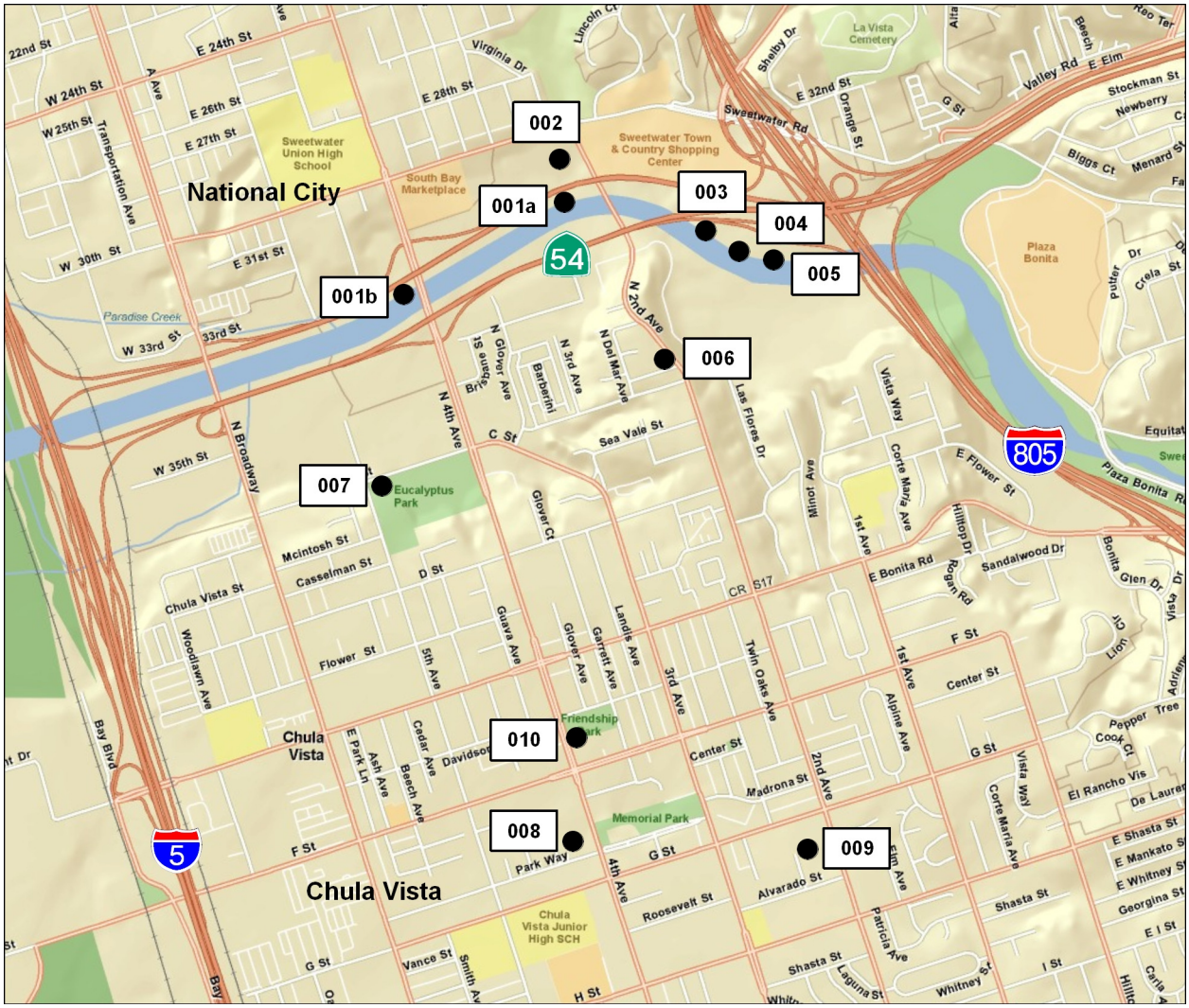
$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

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

State Water Quality Protection Areas (SWQPAs)
Non-terrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS) that were previously designated by the State Water Board in Resolution No.s 74-28, 74-32, and 75-61 are now also classified as a subset of State Water Quality Protection Areas and require special protections afforded by the Ocean Plan.

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

ATTACHMENT B – MAP



Drawing Reference:	SITE LOCATION MAP
ESRI World Street Map Service Copyright:© 2009 ESRI, AND, TANA, UNEP-WCMC **2008**	**REYNOLDS DEMINERALIZATION PLANT, CHULA VISTA**
001 = Discharge Point Nos.	**SAN DIEGO COUNTY**

ATTACHMENT C – FLOW SCHEMATIC

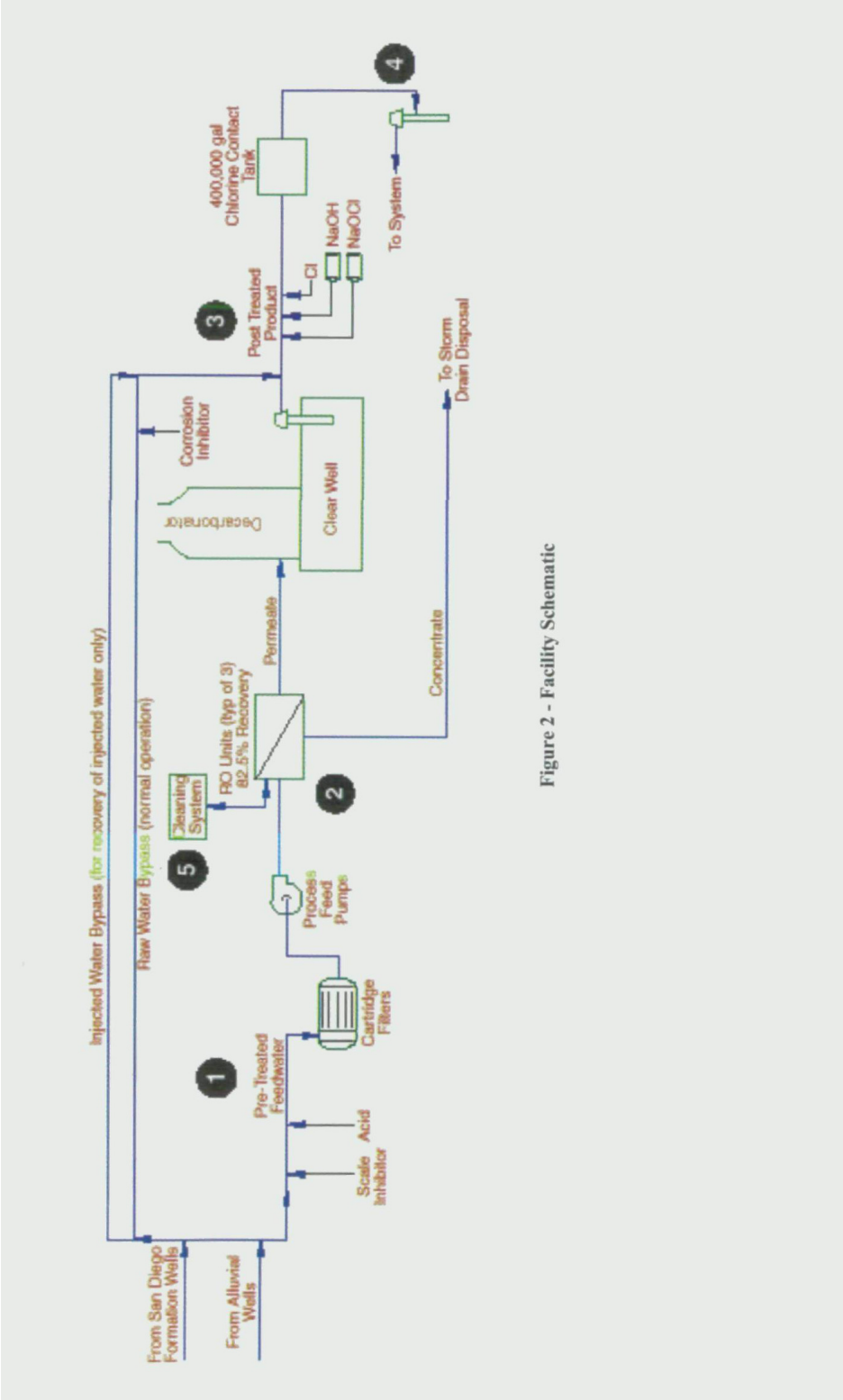


Figure 2 - Facility Schematic

ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

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

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

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

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

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

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

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

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

G. Bypass

1. Definitions

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

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

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

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

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

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

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

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

5. Notice

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

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

H. Upset

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

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

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

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

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

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

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and

incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 CFR. § 122.41(l)(3); § 122.61.)

III. STANDARD PROVISIONS – MONITORING

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

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

IV. STANDARD PROVISIONS – RECORDS

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

B. Records of monitoring information shall include:

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

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

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

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

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

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

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

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

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

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

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

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

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

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

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

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

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

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

C. Monitoring Reports

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

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

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

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The Discharger shall 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. § 122.41(l)(6)(i).)

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

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

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

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

F. Planned Changes

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

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

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification

requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 CFR. § 122.41(l)(1)(ii).)

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

4. The Discharger has proposed an expansion of the existing facility to desalinate additional groundwater resulting in a discharge of up to 2.5 MGD of through outfalls. The Board is currently reviewing the request, including salinity models and receiving water monitoring.

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

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

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

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

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

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

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

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

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

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

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

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

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

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

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitoring discharge. All samples shall be taken at the monitoring points 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 points shall not be changed without notification to and the approval of the Regional Water Board. Samples shall be collected at times representative of "worst case" conditions with respect to compliance with the requirement of Order No. R9-2010-0012. Laboratories analyzing monitoring samples shall be certified by the Department of Health Services, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.

B. 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. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurement is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ±5 percent from true discharge rates throughout the range of expected discharge volumes.

C. Monitoring must be conducted according to United States Environmental Protection Agency (USEPA) test procedures approved at 40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act as amended, or unless other test procedures are specified in Order No. R9-2010-0012 and/or in this MRP and/or by the Regional Water Board.

D. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Public Health or a laboratory approved by the Regional Water Board.

E. Records of monitoring information shall include information required under Standard Provision, Attachment D, section IV.

F. 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, or more frequently, to ensure continued accuracy of the devices.

G. The Discharger shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. Duplicate chemical analyses must be conducted on a minimum of ten percent of the samples or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples. When requested by USEPA or the Regional Water Board, the Discharger will participate in the NPDES discharge monitoring report QA performance study. The Discharger should have a success rate equal or greater than 80 percent.

H. Analysis for toxic pollutants, including acute and chronic toxicity, with performance goals based on WQOs of the Basin Plan shall be conducted in accordance with procedures described in the Basin Plan and restated in this MRP.

I. This permit may be modified in accordance with the requirements set forth at 40 CFR Parts 122 and 124, to include appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any USEPA approved, new, State water quality standards applicable to effluent toxicity.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INT-001	Contactor tank overflow (discharge) drain vault, after dechlorination
001a	EFF-001a	Discharge of Demineralization Brine in the Upper Paradise Creek Flood Control Channel. Latitude 32°39'34"N Longitude 117°05'00"W
001b	EFF-001b	Relocated Discharge of Demineralization Brine in the Lower Sweetwater River. Latitude 32˚39' 19.98"N Longitude 117˚ 05' 26.22"W
002	EFF-002	Discharge from San Diego Formation Well No.1, No.2, and No.6, pressure relief valves, and plant feed-water dump, prior to discharge to Paradise Creek Flood Control Channel. Latitude 32°39'31"N, Longitude 117°05'02"W
003	EFF-003	Discharge from San Diego Formation Well No.3. Latitude 32°39'29"N, Longitude 117°04'41"W
004	EFF-004	Discharge from San Diego Formation Well No.4. Latitude 32°39'26"N Longitude 117°04'36"W
005	EFF-005	Discharge from San Diego Formation Well No.5. Latitude 32°39'25"N Longitude 117°04'31"W
006	EFF-006	Discharge from San Diego Formation Well No 7. Latitude 32˚39' 12.38"N, Longitude 117˚ 04' 50.48"W
007	EFF-007	Discharge from San Diego Formation Well No. 8 Latitude 32˚38' 57.71"N, Longitude 117˚ 05' 29.22"W
008	EFF-008	Discharge from San Diego Formation Well No. 9 Latitude 32˚38' 16.51"N, Longitude 117˚ 05' 02.37"W
009	EFF-009	Discharge from San Diego Formation Well No. 10 Latitude 32˚38' 15.59"N, Longitude 117˚ 04' 30.03"W
010	EFF-010	Discharge from San Diego Formation Well No. 11 Latitude 32˚38' 27.84"N, Longitude 117˚ 05' 02"W
--	RSW-001a	Lower Sweetwater River just west of N. 2nd Ave., approximately 450 feet upstream of the confluence of the Upper Paradise Creek Flood Control Channel and the Lower Sweetwater River
--	RSW-002a	Drop Structure Location approximately 850 feet west of the confluence of the Upper Paradise Creek Flood Control Channel and the Lower Sweetwater River
--	RSW-001b	To be established by the Discharger prior to relocation of brine effluent to Discharger Point No. 001b

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	RSW-002b	To be established by the Discharger prior to relocation of brine effluent to Discharger Point No. 001b

III. INFLUENT MONITORING REQUIREMENTS—NOT APPLICABLE

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001a and EFF-001b

The Discharger shall monitor Discharge Point Nos. 001a and 001b at EFF-001a and EFF-001b, respectively, as follows:

Table E-2. Effluent Monitoring EFF-001a and EFF-001b

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	MGD	Meter	Daily	--
pH	units	Grab	Monthly	[1]
Total Suspended Solids	mg/L	Grab	Quarterly	[1]
Oils and Grease	mg/l	Grab	Quarterly	[1]
Temperature	ºC, ºF	Grab	1/Week	[1]
Turbidity	NTU	Grab	Monthly	[1]
Copper, Total Recoverable	µg/L	Grab	Monthly	[1, 2, 6]
Nickel, Total Recoverable	µg/L	Grab	Monthly	[1, 2, 6]
Selenium, Total Recoverable	µg/L	Grab	Monthly	[1, 2, 6]
Ammonia, Un-ionized as N	mg/L	Grab	Quarterly	[1]
Nitrate Nitrogen, Total (as N)	mg/L	Grab	Monthly	[1]
Nitrogen, Total (as N)	mg/L	Grab	Monthly	[1]
Orthophosphate (as P)	mg/L	Grab	Monthly	[1]
Phosphorus, Total (as P)	mg/L	Grab	Monthly	[1]
Settleable Solids	ml/L	Grab	Quarterly	[1]
Priority Pollutants	µg/L	Grab	[3]	[1, 2]
TCDD Equivalents	µg/L	Grab	[3]	[1, 2, 4]
Salinity	ppt	Grab	Monthly	[1]
Acute and Chronic Toxicity	T.U.	Grab	Annually	[5]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136. The methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

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

[3] Priority pollutants shall be sampled quarterly at EFF-001a and 001b (when discharge occurs) during the third year following the date of permit adoption and shall be conducted concurrently with effluent monitoring for pH.

[4] The Discharger shall monitor for the presence of the 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD or Dioxin) congeners. TCDD equivalents represent the sum of concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown by the table below. USEPA Method 8280 may be used to analyze TCDD equivalents.

Isomer Group	Toxicity Equivalence Factor
2,3,7,8 – tetra CDD	1.0
2,3,7,8 – penta CDD	0.5
2,3,7,8 – hexa CDD	0.1
2,3,7,8 – hepta CDD	0.01
octa CDD	0.001
2,3,7,8 – tetra CDF	0.1
1,2,3,7,8 – penta CDF	0.05
2,3,4,7,8 – penta CDF	0.5
2,3,7,8 – hexa CDFs	0.1
2,3,7,8 – hepta CDFs	0.01
Octa CDF	0.001

[5] Acute and Chronic Toxicity monitoring requirements are described in section V of this Monitoring and Reporting Program

[6] EPA Method 1640 (reductive precipitation sample pre-concentration)/EPA Method 200.8 (ICP-MS) may be used to determine copper and nickel; EPA Method 7742 (hydride) may be used to determine selenium.

B. Monitoring Location EFF-002, EFF-003, EFF-004, EFF-005, EFF-006, EFF-007, EFF-008, EFF-009, and EFF-010

1. The Discharger shall monitor well purges as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table E-3. Effluent Monitoring of Well Purges at EFF-002, EFF-003, EFF-004, EFF-005, EFF-006, EFF-007, EFF-008, EFF-009, and EFF-010

Parameter	Units	Sample Type	Minimum Sampling Frequency[3]	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	MGD	Estimate[1]	1/Discharge Event	[2]
pH	standard units	Grab	1/Discharge Event	[2]
Duration	min., hr.	--	1/Discharge Event	[2]
Date	mm/dd/yy	--	1/Discharge Event	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency[3]	Required Analytical Test Method and (Minimum Level, units), respectively
Copper, Total Recoverable	µg/L	Grab	Quarterly	[2, 4]
Selenium, Total Recoverable	µg/L	Grab	Quarterly	[2, 4]
Ammonia, Un-ionized as N	mg/L	Grab	Quarterly	[2]
Nitrogen, Total (as N)	mg/L	Grab	Quarterly	[2]
Phosphorus, Total (as P)	mg/L	Grab	Quarterly	[2]

1 Calculated estimate based on discharge structure characteristics.

2 Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

3 If there are no dischargers during a quarter then no monitoring is required. The Discharger shall submit a certification~~s~~ stating there were no discharges during the reporting period.

4 EPA Method 1640 (reductive precipitation sample pre-concentration)/EPA Method 200.8 (ICP-MS) may be used to determine copper; EPA Method 7742 (hydride) may be used to determine selenium.

2. Each groundwater well discharge location shall be qualitatively evaluated each quarter and reported quarterly. The qualitative evaluation shall include a narrative description of any erosion, sediment deposition, or other impacts to vegetation or wildlife in the vicinity of the respective discharge.

3. The Discharger shall monitor any discharges from the Chlorine Contact Tank, including overflow, at INT-001:

Table E-4. Effluent Monitoring at Chlorine Contact Tank Discharges at INT-001.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	MGD	Estimate	1/Discharge Event	--
pH	standard units	Grab	1/Discharge Event	[1]
Duration of Discharge	minutes	--	1/Discharge Event	--
Date of Discharge	--	--	1/Discharge Event	--
Copper, Total Recoverable	µg/L	Grab	Quarterly	[1, 2]
Selenium, Total Recoverable	µg/L	Grab	Quarterly	[1, 2]
Chlorine, Total Residual	µg/L	Grab	Quarterly	[1]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136. The methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

[2] EPA Method 1640 (reductive precipitation sample pre-concentration)/EPA Method 200.8 (ICP-MS) may be used to determine copper; EPA Method 7742 (hydride) may be used to determine selenium.

4. The Discharger shall monitor Plant Feed-Water Dump at EFF-002 as follows:

Table E-5. Effluent Monitoring of Plant Feed-Water Dump at EFF-002 .

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	MGD	Estimate	1/Discharge Event	--
pH	standard units	Grab	1/Discharge Event	[1]
Duration of Discharge	minutes	--	1/Discharge Event	--
Date of Discharge	--	--	1/Discharge Event	--
Copper, Total Recoverable	µg/L	Grab	Quarterly	[1, 2]
Selenium, Total Recoverable	µg/L	Grab	Quarterly	[1, 2]
Ammonia, Un-ionized as N	mg/L	Grab	Quarterly	[1]
Nitrogen, Total (as N)	mg/L	Grab	Quarterly	[1]
Phosphorus, Total (as P)	mg/L	Grab	Quarterly	[1]

[1] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136. The methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

[2] EPA Method 1640 (reductive precipitation sample pre-concentration)/EPA Method 200.8 (ICP-MS) may be used to determine copper; EPA Method 7742 (hydride) may be used to determine selenium.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall conduct annual acute and chronic toxicity testing on effluent samples collected at Effluent Monitoring Station EFF-001a and EFF-001b in accordance with the following schedule and requirements:

Table E-6. Whole Effluent Toxicity Testing-EFF-001a and EFF-001b[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency
Acute Toxicity	Pass or Fail	Composite	Annually
Chronic Toxicity	TUc	Grab	Annually

[1] Monitoring to be conducted at location(s) where discharge is occurring.

A. Acute Toxicity

1. Monitoring Frequency

The Discharger shall conduct annual acute toxicity tests on 24-hour composite effluent samples. Each calendar year, at a different time of year from the previous years, the Discharger shall split a 24-hour composite effluent sample and concurrently conduct two toxicity tests using a fish and an invertebrate species; the Discharger shall then continue to conduct routine annual toxicity testing using the single, most sensitive species.

Acute toxicity test samples shall be collected for each point of discharge at the designated NPDES sampling station for the effluent (i.e., downstream from the last treatment process and any in-plant return flows where a representative effluent sample can be obtained). During years 1, 2, 3, 4 and 5 of the permit, a split of each sample shall be analyzed for all other monitored parameters at the minimum frequency of analysis specified by the effluent monitoring program.

2. Marine and Estuarine Species and Test Methods

Species and short-term test methods for estimating the acute toxicity of NPDES effluents are found in the fifth edition of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPN821/R02/012,2002; Table IA, 40 CFR Part 136). The Discharger shall conduct 96-hour static renewal toxicity tests with the following vertebrate species:

- The topsmelt, Atherinops affinis [Larval Survival and Growth Test Method 1006.0 (Daily observations for mortality make it possible to calculate acute toxicity for desired exposure periods (Le., 96-hour Pass-Fail test)] in the first edition of Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (EPAl600/R*951136,* 1995) (specific to Pacific Coast waters);

- The Inland silverside, Menidia beryllina, only if Atherinops affins is not available. (Acute Toxicity Test Method 2006.0);

  And the following invertebrate species:

- The West Coast mysid, Holmesimysis costata (Table 19 in the acute test methods manual) (specific to Pacific Coast waters);

- The mysid, Americamysis bahia, only if Holmesimysis costata is not available. (Acute Toxicity Test Method 2007.0).

3. Acute WET Permit Trigger

There is no acute toxicity effluent limit for this discharge. The acute permit trigger for this discharge is any one test result not meeting the "Pass" performance goal. For this permit, the determination of Pass or Fail from a single-effluent-concentration (paired) acute toxicity test shall be determined using a one-tailed hypothesis test (t-test). The objective of a Pass or Fail test is to determine if survival in the single treatment (100% effluent) is significantly different from survival in the control (0% effluent). Following Section 11.3 in the acute test methods manual (EPA/821/R-02/012, 2002), the t statistic for the single-effluent concentration acute toxicity test shall be calculated and compared with the critical t set at the 5% level of significance. If the calculated t does not exceed the critical t, then the mean responses for the single treatment and control are declared "not statistically different" and the Discharger shall report "Pass" on the quarterly report. If the calculated t does exceed the critical t, then the mean responses for the single treatment and control are declared "statistically different" and the Discharger shall report "Fail" on the quarterly. This permit requires additional toxicity testing if the acute WET permit trigger is reported as "Fail".

4. Quality Assurance

a. Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are specified, below.

b. This discharge is subject to a determination of Pass or Fail from a single-effluent concentration (paired) acute toxicity test using a one-tailed hypothesis test called a t-test. The acute instream waste concentration (IWC) for this discharge is 100% effluent. The 100% effluent concentration and a control shall be tested.

c. Control water shall be prepared and used as specified in the test methods manual *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPAl821/R-02/012, 2002); *and/or,* for Atherinops affinis, *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPAl600/R-95/136, 1995*).*

d. If organisms are not cultured in-house, then concurrent testing with a reference toxicant shall be conducted. If organisms are cultured in-house, then monthly reference toxicant testing is sufficient. Reference toxicant tests and effluent toxicity tests shall be conducted using the same test conditions (e.g., same test duration, etc.).

e. If either the reference toxicant or effluent toxicity tests do not meet all test acceptability criteria in the test methods manual, then the permittee must

resample and retest within 14 days, or within the shortest time period possible (e.g., the next storm event, or next discharge event).

f. Following Paragraph 12.2.6.2 of the test methods manual, all acute toxicity test results from the multi-concentration tests required by this permit must be reviewed and reported according to USEPA guidance on the evaluation of concentration-response relationships found in Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR 136) (EPAIS21/B-001004, 2000).

g. Within-test variability of individual toxicity tests should be reviewed for acceptability and variability criteria (upper and lower PMSD bounds) should be applied, as directed under Section 12.2.S -*Test Variability* of the test methods manual, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*. Under Section 12.2.S, the calculated percent minimum significant difference (PMSD) for both reference toxicant test and effluent toxicity test results must be compared with the upper and lower PMSD bounds variability criteria specified in Table 3-6 -*Range of Relative Variability for Endpoints of Promulgated WET Methods, Defined by the 10th and 90th Percentiles from the Data Set of Reference Toxicant Tests*, taken from *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program* (EPAIS33/R-001003, 2000), following the review criteria in Paragraphs 12.2.S.2.1 and 12.2.S.2 of the test methods manual. Based on this review, only accepted effluent toxicity test results shall be reported on the SMR for the quarter in which monitoring was conducted. If excessive within-test variability invalidates a test result, then the permittee must resample and retest within 14 days, or within the shortest time period possible (e.g., the next storm event, or next discharge event).

h. If the discharge effluent is chlorinated, then chlorine shall not be removed from the effluent sample prior to toxicity testing without written approval by the Regional Board.

i. Where total ammonia concentrations in the effluent are > 5 mg/l, toxicity may be contributed by unionized ammonia. pH drift during the toxicity test may contribute to artificial toxicity when ammonia or other ph-dependent toxicants (e.g., metals) are present. This problem is minimized by conducting toxicity tests in a static-renewal or flow-through mode, as outlined in Paragraph 9.5.9 of the test methods manual.

5. Initial Investigation TRE Workplan

Within 90 days of the permit effective date, the Discharger shall prepare and submit a copy of their Initial Investigation Toxicity Reduction Evaluation (TRE) Workplan (1-2 pages) to the Regional Board for review. This plan shall

include steps the Discharger intends to follow if toxicity is measured above an acute WET permit limit or trigger and should include, at minimum:

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

b. A description of methods for maximizing in-house treatment system efficiency, good housekeeping practices, and a list of all chemicals used in operations at the facility.

c. If a Toxicity Identification Evaluation (TIE) is necessary, an indication of who would conduct the TIEs (i.e., an in-house expert or outside contractor).

6. Accelerated Toxicity Testing and TRE/TIE Process

a. If an acute WET permit trigger is exceeded and the source of toxicity is known (e.g., a temporary plant upset), then the Discharger shall conduct one additional toxicity test using the same species and test method. This test shall begin within 14 days of receipt of test results exceeding an acute WET permit trigger. If the additional toxicity test does not exceed an acute WET permit trigger, then the Discharger may return to their regular testing frequency.

b. If an acute WET permit trigger is exceeded and the source of toxicity is not known, then the Discharger shall conduct six additional toxicity tests using the same species and test method, approximately every two weeks, over a 12 week period. This testing shall begin within 14 days of receipt of test results exceeding an acute WET permit trigger. If none of the additional toxicity tests exceed an acute WET permit trigger, then the Discharger may return to their regular testing frequency.

c. If one of the additional toxicity tests (in paragraphs 6.a or 6.b) exceeds an acute WET permit trigger, then, within 14 days of receipt of this test result, the Discharger shall initiate a TRE using, based on the type of treatment facility, EPA manual *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants* (EPA/833/B-99/002, 1999) or EPA manual *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989). In conjunction, the Discharger shall develop and implement a Detailed TRE Workplan which shall include: further actions undertaken by the Discharger to investigate, identify, and correct the causes of toxicity; actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and a schedule for these actions.

d. The Discharger may initiate a Toxicity Identification Evaluation (TIE) as part of a TRE to identify the causes of toxicity using the same species and test method and, as guidance, EPA test method manuals: *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures* (EPA/600/6-91/003,1991); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); and *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054, 1996).

7. Reporting of Acute Toxicity Monitoring Results

a. A full laboratory report for all toxicity testing shall be submitted as an attachment to the SMR for the quarter in which the toxicity test was conducted and shall also include: the toxicity test results-for determination of Pass/Fail-reported according to the test methods manual chapter on report preparation and test review; the dates of sample collection and initiation of each toxicity test; all results for effluent parameters monitored concurrently with the toxicity testes); and progress reports on TRE/TIE investigations.

b. The Discharger shall notify the Regional Water Board in writing within 14 days of an acute toxicity test resulting in a determination of "Fail". This notification shall describe actions the Discharger has taken or will take to investigate, identify, and correct the causes of toxicity; the status of actions required by this Order; and schedule for actions not yet completed; or reason(s) that no action has been taken.

B. Chronic Toxicity

1. Monitoring Frequency

The Discharger shall conduct annual chronic toxicity tests on 24-hour composite effluent samples. Each calendar year, at a different time of year from the previous years, the Discharger shall split a 24-hour composite effluent sample and concurrently conduct three toxicity tests using a fish, an invertebrate, and an alga species. Chronic toxicity test samples shall be collected for each point of discharge at the designated NPDES sampling station for the effluent (i.e., downstream from the last treatment process and any in-plant return flows where a representative effluent sample can be obtained). During years 1, 2, 3, 4 and 5 of the permit, a split of each sample shall be analyzed for all other monitored parameters at the minimum frequency of analysis specified by the effluent monitoring program.

2. Marine and Estuarine Species and Test Methods

Species and short-term test methods for estimating the chronic toxicity of NPDES effluents are found in the first edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPAl600/R-9S/136, 1995) and applicable water quality standards; also see 40 CFR Parts 122.410)(4) and 122.44(d)(1)(iv) and 40 CFR Part 122.210)(S)(viii) for POTWs. The permittee shall conduct a static renewal toxicity test with the topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.0 (Daily observations for mortality make it possible to calculate acute toxicity for desired exposure periods (i.e., 7-day LCSO, 96-hour LCSO, etc.); a static nonrenewal toxicity test with the giant kelp, *Macrocystis pyrifera* (Germination and Growth Test Method 1009.0); and a toxicity test with one of the following invertebrate species:

- Static renewal toxicity test with the mysid, Holmesimysis costata (Survival and Growth Test Method 1007.01);
- Static non-renewal toxicity test with the Pacific oyster, Crassostrea gigas, or the mussel, Mytilus spp., (Embryo-larval Shell Development Test Method 100S.0);
- Static non-renewal toxicity test with the red abalone, Haliotis rufescens (Larval Shell Development Test Method);
- Static non-renewal toxicity test with the purple sea urchin, Strongylocentrotus purpuratus, or the sand dollar, Dentraster excentricus (Embryo-larval Development Test Method); or

- Static non-renewal toxicity test with the purple sea urchin, Strongylocentrotus purpuratus, or the sand dollar, Dendraster excentricus (Fertilization Test Method 1008.0).

If laboratory-held cultures of the topsmelt, *Atherinops affinis*, are not available for testing, then the permittee shall conduct a static renewal toxicity test with the inland silverside, *Menidia beryllina* (Larval Survival and Growth Test Method 1006.0), found in the third edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms* (EPAl821/R-02/014, 2002; Table IA, 40 CFR Part 136).

3. Chronic WET Permit Triggers

There are no chronic toxicity effluent limits for this discharge. For this discharge, a mixing zone or dilution allowance is not authorized and the chronic WET permit triggers are any one test result greater than 1.6 TUc (during the monthly reporting period), or any one or more test results with a calculated median value greater than 1.0 TUc (during the monthly reporting period). Results shall be reported in TUc, where TUc = 100/NOEC. The No Observed Effect Concentration (NOEC) is the highest concentration of toxicant to which organisms are exposed in a short-term chronic test that causes no observable adverse effects on the test organisms (e.g., the highest concentration of toxicant in which the values for the observed responses are not statistically significantly different from the controls). This permit requires additional toxicity testing if a chronic WET permit trigger is exceeded.

4. Quality Assurance

a. Quality assurance measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are specified, below.

b. For this discharge, a mixing zone or dilution allowance is not authorized. The chronic instream waste concentration (IWCs) for this discharge is 100% effluent and 62.5% effluent. A series of at least five effluent dilutions and a control shall be tested. At minimum, the dilution series shall include the IWCs and four dilutions below the IWCs (e.g., 100%, 62.5%, 50%, 25% and 12.5%).

c. Effluent dilution water and control water should be prepared and used as described in the test methods manual *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPAl600/R-95/136, 1995) and/or *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms* (EPAl821/R-02/014, 2002). If the dilution water is different from test organism culture

water, then a second control using culture water shall also be used. If the use of artificial sea salts is considered provisional in the test method, then artificial sea salts shall not be used to increase the salinity of the effluent sample prior to toxicity testing without written approval by the permitting authority.

d. If organisms are not cultured in-house, then concurrent testing with a reference toxicant shall be conducted. If organisms are cultured in-house, then monthly reference toxicant testing is sufficient. Reference toxicant tests and effluent toxicity tests shall be conducted using the same test conditions (e.g., same test duration, etc.).

e. If either the reference toxicant or effluent toxicity tests do not meet all test acceptability criteria in the test methods manual, then the Discharger must resample and retest within 14 days.

f. Following Paragraph 10.2.6.2 of the freshwater test methods manual, all chronic toxicity test results from the multi-concentration tests required by this permit must be reviewed and reported according to USEPA guidance on the evaluation of concentration response relationships found in *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing* (40 CFR 136) (EPAl821/B-00-004, 2000).

g. Because this permit requires sublethal hypothesis testing endpoints from test methods in Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (EPAl600/R-95/136, 1995), within-test variability must be reviewed for acceptability and a variability criterion (upper %MSD bound) must be applied, as directed under each test method. Based on this review, only accepted effluent toxicity test results shall be reported on the report. If excessive within-test variability invalidates a test result, then the Discharger must resample and retest within 14 days.

h. If the discharged effluent is chlorinated, then chlorine shall not be removed from the effluent sample prior to toxicity testing without written approval by the permitting authority.

i. pH drift during the toxicity test may contribute to artifactual toxicity when pH dependent toxicants (e.g., ammonia, metals) are present in an effluent. To determine whether or not pH drift during the toxicity test is contributing to artifactual toxicity, the permittee shall conduct three sets of parallel toxicity tests, in which the pH of one treatment is controlled at the pH of the effluent and the pH of the other treatment is not controlled, as described in Section 11.3.6.1 of the test methods manual, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPAl821/R-02/013, 2002). Toxicity is confirmed to be artifactual and due to pH drift when no toxicity above the

chronic WET permit limit or trigger is observed in the treatments controlled at the pH of the effluent. If toxicity is confirmed to be artifactual and due to pH drift, then, following written approval by the permitting authority, the permittee may use the procedures outlined in Section 11.3.6.2 of the test methods manual to control sample pH during the toxicity test.

5. Initial Investigation of the TRE Workplan

Within 90 days of the permit effective date, the Discharger shall submit a copy of their Initial Investigation Toxicity Reduction Evaluation (TRE) Workplan (1-2 pages) to the Regional Board for review. This plan shall include steps the Discharger intends to follow if toxicity is measured above the chronic WET permit trigger and should include, at a minimum:

a. A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of 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.

c. If a toxicity identification evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).

6. Accelerated Toxicity Testing and TRE/TIE Process

a. If a chronic WET permit limit or trigger is exceeded and the source of toxicity is known (e.g., a temporary plant upset), then the permittee shall conduct one additional toxicity test using the same species and test method. This test shall begin within 14 days of receipt of test results exceeding a chronic WET permit limit or trigger. If the additional toxicity test does not exceed a chronic WET permit limit or trigger, then the permittee may return to their regular testing frequency.

b. If a chronic WET permit limit or trigger is exceeded and the source of toxicity is not known, then the permittee shall conduct six additional toxicity tests using the same species and test method, approximately every two weeks, over a 12 week period. This testing shall begin within 14 days of receipt of test results exceeding a chronic WET permit limit or trigger. If none of the additional toxicity tests exceed a chronic WET permit limit or trigger, then the permittee may return to their regular testing frequency.

c. If one of the additional toxicity tests (in paragraphs 6.a or 6.b) exceeds a chronic WET permit limit or trigger, then, within 14 days of receipt of this test result, the permittee shall initiate a TRE using as guidance, based on

the type of treatment facility, EPA manual Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants (EPA/ 833/B-99/002, 1999) or EPA manual Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (EPA/600/2-88/070, 1989). In conjunction, the permittee shall develop and implement a Detailed TRE Workplan which shall include: further actions undertaken by the Discharger to investigate, identify, and correct the causes of toxicity; actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and a schedule for these actions.

d. The permittee may initiate a Toxicity Identification Evaluation (TIE) as part of a TRE to identify the causes of toxicity using the same species and test method and, as guidance, EPA test method manuals: Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I (EPA/600/6-91/005F, 1992); Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity (EPA/600/R-92/080, 1993); Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity (EPA/600/R-92/081, 1993); and Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document (EPA/600/R-96-054, 1996).

7. Reporting of Chronic Toxicity Monitoring Results

a. A full laboratory report for all toxicity testing shall be submitted as an attachment to the SMR for the quarter in which the toxicity test was conducted and shall also include: the toxicity test results—in NOEC; TUc = 100/NOEC; EC25 (or IC25); and TUc = 100/EC25 (or IC25)—reported according to the test methods manual chapter on report preparation and test review; the dates of sample collection and initiation of each toxicity test; all results for effluent parameters monitored concurrently with the toxicity test(s); and progress reports on TRE/TIE investigations.

b. The Discharger shall notify the Regional Board in writing within 14 days of exceedance of a chronic WET permit trigger. This notification shall describe actions the Discharger has taken or will take to investigate, identify, and correct the causes of toxicity; the status of actions required by this permit; and schedule for actions not yet completed; or reason(s) that no action has been taken.

VI. LAND DISCHARGE MONITORING REQUIREMENTS—NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS—NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Location RSW-001a/RSW-001b (Upstream) and RSW-002a/RSW-002b (Downstream) Lower Sweetwater River

1. The Discharger shall monitor the Lower Sweetwater River at RSW-001a/RSW-001b and RSW-002a/RSW-002b as follows:

Table E-7. Receiving Water Monitoring Requirements at RSW-001a/RSW-001b and RSW-002a/RSW-002b[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
pH	standard units	Grab	Quarterly	2
Total Suspended Solids	mg/L	Grab	Quarterly	2
Temperature	ºC, ºF	Grab	Monthly	2
Copper, Total Recoverable	µg/L	Grab	Quarterly	2, 3, 7
Nickel, Total Recoverable	µg/L	Grab	Quarterly	2, 3, 7
Selenium, Total Recoverable	µg/L	Grab	Quarterly	2, 3, 7
Ammonia, Unionized as N	mg/L	Grab	Quarterly	2
Dissolved Oxygen	mg/L	Grab	Quarterly	2
Nitrate, as N	mg/L	Grab	Quarterly	2
Nitrogen, Total (as N)	mg/L	Grab	Quarterly	2
Orthophosphate (as P)	mg/L	Grab	Quarterly	2
Phosphorus, Total (as P)	mg/L	Grab	Quarterly	2
Settleable Solids	ml/L	Grab	Quarterly	2
Priority Pollutants	µg/L	Grab	4	2, 3
TCDD Equivalents	µg/L	Grab	4	2, 3, 5
Salinity	mg/L	Grab	Quarterly	2
Acute Toxicity	Pass/Fail	Grab	Annually	6

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Chronic Toxicity	T.U.	Grab	Annually	[6]

[1] Prior to relocation of brine discharge, RSW-001a and RSW-002a shall be monitored. Once the brine discharge is relocated to Discharge Point 001b, monitoring shall occur at RSW-001b and RSW-002b.

[2] Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

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

[4] Priority pollutants shall be sampled quarterly at RSW-001 and RSW-002 during the third year following the date of permit adoption and shall be conducted concurrently with effluent monitoring for pH.

[5] The Discharger shall monitor for the presence of the 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD or Dioxin) congeners. TCDD equivalents represent the sum of concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown by the table below. USEPA Method 8280 may be used to analyze TCDD equivalents.

Isomer Group	Toxicity Equivalence Factor
2,3,7,8 – tetra CDD	1.0
2,3,7,8 – penta CDD	0.5
2,3,7,8 – hexa CDD	0.1
2,3,7,8 – hepta CDD	0.01
octa CDD	0.001
2,3,7,8 – tetra CDF	0.1
1,2,3,7,8 – penta CDF	0.05
2,3,4,7,8 – penta CDF	0.5
2,3,7,8 – hexa CDFs	0.1
2,3,7,8 – hepta CDFs	0.01
Octa CDF	0.001

[6] WET Testing Requirements as described in section V of the MRP.

[7] EPA Method 1640 (reductive precipitation sample pre-concentration)/EPA Method 200.8 (ICP-MS) may be used to determine copper and nickel; EPA Method 7742 (hydride) may be used to determine selenium.

IX. OTHER MONITORING REQUIREMENTS

A. Benthic Invertebrate Monitoring Plan

In order to monitor potential impacts to the benthic communities due to increased effluent flow at Discharge Point No. 001b, the Discharger shall develop a plan to monitor benthic invertebrates within the receiving water. Within the plan the Discharger shall establish locations upstream of the influence of the discharge and downstream of the discharge. Monitoring shall be conducted according to methodology in *Evaluation of Benthic Assessment Methodology in Southern California Bays and San Francisco Bay (SCCWRP, 2004).* The Plan shall be submitted to the Regional Water Board within 180 days of the effective date of

this Order. Progress of plan development, implementation including any resulting monitoring data and discussion of results shall be submitted in the annual report specified in X.A.3.

B. Macroalgae Monitoring Plan

In order to assess potential impacts from increased loadings of biostimulatory substances due to increased effluent flow at Discharge Point No. 001b , the Discharger shall develop a plan to monitor macroalgae within the receiving water. The plan shall include sampling for macroalgae at representative sites upstream and downstream of the discharge. Samples shall be analyzed for mass of organic material and percent organic matter. The plan shall also address macroalgae measurements using photographic quadrats. The Plan shall be submitted to the Regional Water Board within 180 days of the effective date of this Order. Progress of plan development, implementation, including any macroalgae sampling and photoquadrat monitoring results, and a discussion of results shall be submitted in the annual report specified in X.A.3

C. Wetland Vegetation Monitoring Plan

In order to assess the potential effects of the increased discharge on the existing vegetation within the Lower Sweetwater River Estuary, the Discharger shall develop a plan to conduct wetland vegetation monitoring. Within the Plan, the Discharger shall identify representative upstream and downstream locations whereby the Discharger shall conduct field observations and transect analysis to identify wetland vegetation species. The Plan shall be submitted to the Regional Water Board within 180 days of the effective date of this Order. Progress of plan development, implementation including any resulting monitoring data and discussion of results shall be submitted in the annual report specified in X.A.3.

D. Temperature Compliance Determination Plan.

In order to demonstrate compliance with the temperature receiving water limitations in V.A.5.a of this Order, the Discharger shall develop a Plan to determine the temperature influence (if any) on the receiving water. The purpose of the study shall be to demonstrate whether:

a. the effluent at Discharge Point No. 001a complies with V.A.5.a at the point of confluence of the Upper Paradise Creek Flood Control Channel and the Lower Sweetwater River Estuary.

b. the effluent at Discharge Point No. 001b will comply with the V.A.5.a within the Lower Sweetwater River Estuary.

The Plan address both dry weather flow and wet weather flow conditions. The Plan shall be submitted to the Regional Water Board within 60 days of the effective date of this Order. Progress of Plan development, implementation,

including any resulting monitoring data and discussion of results shall be submitted in the annual report specified in X.A.3.

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. The Discharger shall report all instances of noncompliance not reported under Attachment D, sections III, V, and VI of this Order No. R9-2010-0012 at the time monitoring reports are submitted.

3. By March 1 of each year, the Discharger shall submit an annual report to the Regional Water Board and USEPA Region 9 that contains tabular and graphical summaries of the monitoring data obtained during the previous year. The Discharger shall discuss the compliance record and corrective actions taken, or which may be taken, or which may be needed to bring the discharge into full compliance with the requirements of Order No. R9-2004-0111 and this MRP.

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. The Discharger shall submit quarterly 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. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-8. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	**July 1, 2010**	**All**	**Submit with quarterly SMR**
Monthly	**July 1, 2010**	**1st day of calendar month through last day of calendar month**	**Submit with quarterly SMR**
Quarterly	**July 1, 2010**	**January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31**	**30 days from the end of the monitoring period**
Annually	**January 1 following permit effective date**	**January 1 through December 31**	**30 days from the end of the monitoring period**
1/ Discharge Event	**July 1, 2010**	**January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31**	**Submit with quarterly SMR**

4. Reporting Protocols. The Discharger shall report with each sample result the applicable reported Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in Part 136.

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

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

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

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+ a percentage of the reported

value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

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

d. Dischargers are to instruct laboratories to establish calibration standards so that the 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. Compliance Determination. Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

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

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

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

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

a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The

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

b. 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.

c. 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:

9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

C. Discharge Monitoring Reports (DMRs)—Not Applicable

D. Other Reports

1. **Toxicity Reduction Evaluation.** The Discharger shall report the progress and results of any TRE (and TIE if applicable) required by Special Provision VI.C.2.a of this Order as specified in Special Provisions VI.C.2.a of this Order. The Discharger shall submit reports with the first monthly SMR scheduled to be submitted on or immediately following the report due date.

2. **Benthic Invertebrate Monitoring Plan.** Within 180 days of the effective date of this Order, the Discharger shall develop a plan to monitor benthic invertebrates within the receiving water as required by Special Provisions VI.C.2.c of this Order.

3. **Macroalgea Monitoring Plan.** Within 180 days of the effective date of this Order, the Discharger shall develop a plan to monitor macroalgea within the receiving water as required by Special Provisions VI.C.2.d of this Order.

4. **Wetland Vegetation Monitoring Plan.** Within 180 days of the effective date of this Order, the Discharger shall develop a plan to monitor wetland vegetation within the vicinity of the discharge as required by Special Provisions VI.C.2.e of this Order.

5. **Temperature Compliance Determination Plan.** In accordance with Special Provision VI.C.2.f of this Order, within 60 days of the effective date of this Order, the Discharger shall develop a plan to demonstrate compliance with the temperature receiving water limitations in section V.A.5.a of this Order.

6. **Pollution Prevention Plan.** As specified in Special Provisions VI, pollution prevention plan reports shall be submitted in accordance with the following reporting requirements.

Table E-9. Other Reporting Requirements

Reporting Requirements	Report Due
Order Provision VI.C.2a. (If applicable) Progress and results of any TRE (and TIE if applicable)	First quarterly SMR scheduled to be submitted on or immediately following the report due date
Order Provision VI.C.2.c Plan to monitor benthic invertebrates within the receiving water	Within 180 days of the effective date of this Order
Order Provision VI.C.2.d Plan to monitor macroalgea within the receiving water	Within 180 days of the effective date of this Order
Order Provision VI.C.2.e Plan to monitor wetland vegetation within the vicinity of the discharge	Within 180 days of the effective date of this Order
Order Provision VI.C.2.f - Plan to demonstrate compliance with the temperature receiving water limitations	Within 60 days of the effective date of this Order
Order Provision VI.C.3 -Work plan and time schedule for preparation of the pollution prevention plan for copper, nickel, selenium, total nitrogen, and total phosphorus at Discharge Point No. 001a and 001b and copper at Discharge Point No. 002	Within 90 days after the adoption of this Order
Order Provision VI.C.3 -Final pollution prevention plan for copper, nickel, selenium, total nitrogen, and total phosphorus at Discharge Point Nos. 001a and 001b and copper at Discharge Point No. 002	The Discharger shall prepare and implement the pollution prevention plan in the event of a serious violation or if an effluent limitation is exceeded four or more times during a period of six consecutive months (in accordance with Section 13385 of the California Water Code).

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	**9 000000858**
Discharger	Sweetwater Authority
Name of Facility	Lower Sweetwater River Basin, Groundwater Demineralization Plant
Facility Address	3066 North Second Avenue
	Chula Vista, CA 91910
	San Diego County
Facility Contact, Title and Phone	Don R. Thomson, Director of Water Quality, Sweetwater Authority, (619) 409-6801
Authorized Person to Sign and Submit Reports	Don R. Thomson, Director of Water Quality, Sweetwater Authority, (619) 420-1413
Mailing Address	P.O. Box 2328 Chula Vista, CA 91912-2328
Billing Address	P.O. Box 2328 Chula Vista, CA 91912-2328
Type of Facility	Groundwater Demineralization Plant, SIC code 4941
Major or Minor Facility	Minor
Threat to Water Quality	III
Complexity	b
Pretreatment Program	NA
Reclamation Requirements	NA
Facility Permitted Flow	0.8 MGD day at existing discharge location 1.0 MGD during December-May at existing discharge location or 2.5 MGD upon relocation and expansion
Facility Design Flow	2.5 MGD
Watershed	San Diego Bay
Receiving Water	Lower Sweetwater River, Tidal Prism of San Diego Bay
Receiving Water Type	Inland Surface Water, Estuary, and Enclosed Bay

A. The Sweetwater Authority (hereinafter Discharger) is the owner and operator of the Richard A. Reynolds Desalination Facility (hereinafter Facility), a groundwater demineralization plant.

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

B. The Facility discharges wastewater to the Lower Sweetwater River and the Tidal Prism of the San Diego Bay, waters of the United States, and is currently regulated by Order R9-2004-0111 which was adopted on June 10, 2004 and expired on June 10, 2009. The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.

C. The Discharger filed a report of waste discharge and submitted an application for renewal of its WDRs and NPDES permit on December 22, 2008 and applied for a NPDES permit renewal and request to increase the discharge from 0.8 MGD to 1.0 MGD at the existing discharge location and up to 2.5 MGD of demineralized brine and miscellaneous wastewater from the Facility upon relocation. Supplemental information was submitted on January 21, 2009 and June 26, 2009. The application was deemed complete on June 26, 2009.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

The Facility is a groundwater desalination plant capable of pumping up to 5 MGD of brackish groundwater for desalination and use as a potable water supply to approximately 180,000 customers through about 35,000 service connections in the communities of Chula Vista and National City. The Facility's current discharge rate of 0.8 MGD limits the pumping of brackish groundwater to 4 MGD. The Discharger has requested an increase in flow from 0.8 MGD to 1.0 MGD, during the winter months at the existing location, to allow the pumping of the full 5 MGD of brackish groundwater the Facility is currently capable of treating. Six groundwater wells draw from the San Diego Formation Aquifer to provide plant feed-water to the existing facility. An additional five groundwater wells will be added as part of the proposed expansion for a total of eleven groundwater wells. Upon the addition of the proposed wells, the plant will be capable of pumping up to 10 MGD of brackish groundwater. Plant feed-water is pretreated by addition of scale inhibitors then passes through cartridge filters to remove larger particles prior to treatment by reverse osmosis units. The reverse osmosis units separate feed-water into permeate and concentrate (brine). Sodium hypochlorite (NaOCl) is added to the permeate to provide disinfection for potable water. The brine solution comprises the Facility's continuous discharge, currently to the Upper Paradise Creek Flood Control Channel, which discharges to Lower Sweetwater

River. Other intermittent discharges include groundwater well purges, plant feed-water dumps, and chlorine contact tank overflow. A discussion of each type of discharge follows:

1. **Brine Concentrate.** The brine concentrate is generated from the desalination process and the discharge occurs daily and continuously when the plant is operating. The maximum discharge rate observed in monitoring data collected from April 2008 through September 2008, was 0.778 MGD. Order No. R9-2004-0111 permitted up to 0.8 MGD of brine discharge through Outfall No. 009 (redesignated as Discharge Point No. 001a in this Order). From the time that Order R9-2004-0111 was issued, the Facility has increased the potable water production capacity from 4 MGD to 5 MGD. If operated at the increased capacity, the discharge of brine is estimated, based on an 80 percent recovery rate, to be 1.0 MGD. In the Report of Waste Discharge, the Facility indicated that it is pursuing further production capacity and requested an increase in discharge flow up to 2.5 MGD. In order to mitigate any potential impacts caused by the increased discharge the Facility proposes to relocate the brine discharge location to a point approximately 2,200 feet (ft) downstream of the confluence of the Upper Paradise Creek Flood Control Channel and the Lower Sweetwater River (designated as Discharge Point No. 001b in this Order). Other water discharges (described below) are not anticipated to change as a result of the increased production capacity.

2. **Groundwater Well Purge Water.** The groundwater well-purge water discharges occur when an inactive well is activated. Inactive groundwater wells need to be purged due to operational requirements (such as, to eliminate sand from the well casing) at the Demineralization Plant. During normal operation of the Facility, a groundwater well will remain on-line for several months before deactivation. Start-up of the wells and therefore any discharge from the wells occur once or twice per year. Mechanical problems may necessitate more frequent well deactivations. Subsequently, the groundwater well-purge water discharges may occur more frequently than once or twice per year. Table F-2, below provides a summary of discharges from the San Diego Formation Wells (SDFs) submitted in Discharge Monitoring Reports from April 2008 through September 2008. In relation to Discharge Points, the well purges occur at Outfall Nos. 002 through 005. Additional groundwater well-purge discharge points 006 through 010 will be added as part of the plant expansion.

Table F-2. Well Purge Discharge Summary April 2008 through September 2008

Well Source	Maximum Discharge Flow (MGD)	Maximum Duration (minutes)	Maximum No. of Discharges per Month	Total No. of Discharges (April 2008 through Sept. 2008)	Discharge Point No.
SDF-1	1.66	42	1	3	002
SDF-2	0.88	30	3	6	002
SDF-3	1.12	60	2	3	003
SDF-4	1.33	60	1	2	004
SDF-5	0.86	60	1	2	005
SDF-6	2.3	36	2	5	002

The average well purge flow rates in gallons per minute (gpm), reported in the application Form 2c, are as follows:

Table F-3 Well Purge Flow Rates Reported in Form 2C

SDF No.1: 1,100 gpm	SDF No.4: 890 gpm
SDF No.2: 600 gpm	SDF No.5: 480 gpm
SDF No.3: 710 gpm	SDF No.6: 1,470 gpm

Order No. R9-2004-0111 contained groundwater well-purge discharges associated with 4 alluvial production wells (APWs). On January 20, 2010, the Discharger submitted an amended application requesting the removal of all alluvial wells. The use of alluvial wells has been discontinued and the Discharger intends to abandon the wells in the near future. There will be no well purges from APW1, APW 2, APW3, or APW4. Historical water quality data on the APW wells will be available in the Regional Water Board file for this Facility.

3. **Plant Feed-Water Dump.** The plant feed-water dump (the manifold supplying the reverse osmosis process trains) occurs if one or more of the reverse osmosis process trains are not in operation and at start-up of the process trains. The feed- water dump consists of groundwater feed-water that may contain anti-scalent. During any emergency deactivation of the process trains the chemical feed pumps are shut-off. During start-up of the process trains, the plant feed-water dump overflow occurs for approximately 15 minutes to allow the pH to stabilize. The plant feed-water dump overflow discharge is located at the Facility at Discharge Point No. 002. During the period from April through September 2008 plant feed-water dumps occurred six times with a maximum frequency of twice a month and a maximum discharge rate of 2.34 MGD and a maximum duration of 140 minutes. The average discharge flow rate reported in the application Form 2c was 2,040 gpm. Plant feed water and well purges are not discharged simultaneously.

4. **Chlorine Contact Tank Emptying/Overflow.** Discharge from the chlorine contact-tank occurs at Discharge Point No. 002 when water stored in the potable water tank is not suitable for distribution, is drained for maintenance, or if the tank overflows. These discharges may contain chlorine due to the addition of NaOCl for disinfection. During the period of April through September 2008, discharge from the chlorine contact tank was reported once at a flow of 0.72 MGD for a period of 30 minutes. No other discharges have been reported during the term of the previous Order (June 1, 2004, through December 31, 2008). The Discharger reported in the Form 2C Report of Waste Discharge (ROWD) that the average flow rate during discharge is 1,080 gpm.

B. Discharge Points and Receiving Waters

Effluent from Discharge Point No. 001a and Discharge Point No. 002 enter the Upper Paradise Creek Flood Control Channel, a concrete lined conveyance that delivers upstream, ephemeral flow as well as the plant wastewaters to the Lower Sweetwater River Estuary. The discharge is located approximately 750 ft upstream of the confluence of the Upper Paradise Creek Flood Control Channel with the Lower Sweetwater River. To mitigate potential impacts from an increase in discharge rate, the Facility plans to relocate the brine discharge to a point approximately 2,200 ft downstream of the confluence of the Upper Paradise Creek Flood Control Channel and the Lower Sweetwater River (Discharge Point No. 001b). The salinity and mixing conditions at the locations of Discharge Point Nos. 001a and 001b and 002 in the Lower Sweetwater River and the Upper Paradise Creek Flood Control Channel are such that the Regional Water Quality Control Board, San Diego (Regional Water Board) determined the discharge locations are within the tidal prism of the San Diego Bay. The Facility also discharges well purge water to several locations in the Lower Sweetwater River (Discharge Point Nos. 003 through 006). These discharge points are not considered to be within the tidal prism of the San Diego Bay. Well purge water from Discharge Point Nos. 007, 008, 009, and 010 will discharge into San Diego Bay. Table F-4 describes each discharge point.

Table F-4. Discharge Locations and Receiving Waters

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001a	Demineralization Brine	32 º 39' 34" N	117 º 05' 00" W	Lower Sweetwater River via Upper Paradise Creek Flood Control Channel (Tidal Prism of San Diego Bay)
001b	Demineralization Brine	32 º 39' 19.98" N	117 º 05' 26.22" W	Lower Sweetwater River (Tidal Prism of San Diego Bay)
002	Storm Water Runoff, Chlorine Contact-Tank Water, Plant Feed-water Dump, Groundwater Well-purge Water (SDFs No.1, No. 2, and No. 6)	32 º 39' 31" N	117 º 05' 02" W	Lower Sweetwater River (Tidal Prism of San Diego Bay)
003	Well-purge Water (SDF No.3)	32 º 39' 29" N	117 º 04' 41" W	Lower Sweetwater River
004	Well-purge Water (SDF No. 4	32 º 39' 26" N	117 º 04' 36" W	Lower Sweetwater River
005	Well-purge Water (SDF No. 5	32 º 39' 25" N	117 º 04' 31" W	Lower Sweetwater River
006	Well-purge Water (SDF No. 7	32˚39' 12.38"N	117˚ 04' 50.48"W	Lower Sweetwater River
007	Well-purge Water (SDF No. 8	32˚38' 57.71"N	117˚ 05' 29.22"W	San Diego Bay
008	Well-purge Water (SDF No. 9)	32˚38' 16.51"N	117˚ 05' 02.37"W	San Diego Bay
009	Well-purge Water (SDF No. 10)	32˚38' 15.59"N	117˚ 04' 30.03"W	San Diego Bay
010	Well-purge Water (SDF No. 11)	117˚ 05' 02"W	32˚38' 27.84"N	San Diego Bay

SDF=San Diego Formation Well

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

Effluent limitations contained in the existing Order for discharges from Discharge Point No. 001a, (Monitoring Location EFF-001a) and representative monitoring data from the term of the previous Order are as follows:

Table F-5. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From July 1, 2004 through November 13, 2008)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly	Highest Average Weekly	Highest Daily
Flow	MGD	--	--	0.800	--	--	0.8[1]
pH	std. units	--	--	6.0-9.0[2]	--	--	7.1-7.9
Nitrate (as N)	mg/L	--	--	5.0	--	--	0.10
Copper, Dissolved	mg/L	--	--	3.1[3]	--	--	2.89[4]
Copper, Total Recoverable	µg/L	--	--	3.73	--	--	4.3[5]

1 Average daily discharge flow, 30 day rolling average.

2 pH must be between 6.0 and 9.0 at all times

3 Interim effluent limitation for copper shall not exceed a maximum daily effluent limitation of 3.1 µg/L as dissolved (0.021 lbs/day). Interim effluent limitation terminated June 10, 2006.

4 Maximum effluent concentration during period of interim limit (November 14 2004 through June 10, 2006.

5 Includes special monitoring conducted as part of a Water Quality study during the period of April 25, 2007 through March 26, 2008.

Order No. R9-2004-0111 contained effluent limitations and monitoring requirements for metals in the total recoverable form. The Order also specified that the Discharger had committed to performing a metals translator study for copper (Finding No. 12). An interim limit for dissolved copper of 3.1 ug/L was included in the Order to extend 2 years after the adoption of the Order to allow for the Regional Water Board to evaluate the dissolved to total translator and modify the Order. The Order specifies that without modification, on June 10, 2006, limitations for copper revert to the total copper limitations of 3.73 µg/L (0.025 lbs/day).

A translator study was not conducted since, after further evaluation and discussions, it was determined that exceedances of the copper effluent limitation were a result of an interference with the test method.

Table F-6. Historic Effluent Limitations and Monitoring Data-Effluent Limitations for Groundwater Well-purge Water, Plant Feed-water Dump, and Chlorine Contact-tank Overflow

Parameter	Units	Effluent Limitation		Monitoring Data (From July 1, 2004 – To November 31, 2008)[1]	
		Instantaneous Maximum	Maximum Daily	Minimum Daily Discharge	Highest Daily Discharge
Chlorine Residual, Total	mg/L	--	0	--	0.15
pH	s.u.	within 6.0-9.0	--	6.6	8.6

[1] Represents a combined data set of Discharge Point Nos. 002, 003, 004, and 005

D. Compliance Summary

During the term of the previous Order (2004-2009) there were no reported instances where the Discharger exceeded effluent limitations. A compliance evaluation inspection was conducted at the Facility on October 23, 2008. Major Findings from the inspection report were as follows:

1. The facility reported some metals analytical results as “Not Detected” that should have been reported as “Detected but Not Quantified”.

2. The name of the individual performing the sampling for nitrate (as N), total phosphorus, total suspended solids (TSS), total dissolved solids (TDS), settleable solids, and orthophosphate was not recorded for some dates. Further, the "Relinquished by" field of the chain of custody was not filled out for some sampling events. Lastly, monitoring information was not available for pH (date, time, location, and individual performing sampling) for monitoring events.

E. Planned Changes

In February 2006, the Discharger requested the proposed increase to 2.5 MGD of brine discharge be permitted. At the request of the Regional Water Board the Discharger collected additional water quality and biological monitoring and a salinity mixing model analysis to assess the potential for impacts associated with the increased discharge. The results of the monitoring indicated that an increase in discharge would likely affect salinity in the estuary and may have impacts on aquatic life. In consultation with the Regional Water Board, to mitigate any potential impacts associated with the increase in brine discharge, the Facility has proposed to relocate the discharge point approximately 2, 200 ft downstream of the confluence of the Upper Paradise Creek Flood Control Channel and the Lower Sweetwater River, where tidal action provides more dilution and thus more uniform salinity.

In the interim, the Regional Water Board will allow an increase in flow from 0.8 MGD to 1.0 MGD, at the existing location, during the months of December thru May. SDF- 3, SDF-4, and SDF 5, which are located adjacent to the river, are only operated during the winter months to lesson the impacts to the freshwater marsh habitat in the Sweetwater River. The decision of when to operate the well is determined, in part by, the groundwater salinity as measured by conductivity in a nearby piezometer. As part of the adaptive management component of the Monitoring and Mitigation Plan, the three wells may only be used when the conductivity of the piezometer falls below 4,000 micro Siemens (uS) (approximately 2.7 ppt). Generally this occurs after the first rains in late fall to early winter. Depending on rainfall, the piezometer conductivity will remain below the 4,000 uS until late spring. It is anticipated that during the winter months, impacts associated with the brine discharge will be minimal when compared to the large volume of fresh water introduced into the estuary as a result of the rain.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as WDRs pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

Under Water Code Section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 2100-21177. An Environmental Impact Report for the proposed expansion was prepared and certified on February 24, 2010.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Quality Control Board (Regional Water Board) adopted a Water Quality Control Plan for the San Diego Basin (hereinafter Basin Plan) on September 8, 1994, that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan.

   The Basin Plan at page 2-12 states that the beneficial uses of any specifically

identified water body generally apply to its tributary streams. The Basin Plan does not specifically identify beneficial uses for Upper Paradise Creek Flood Control Channel but does identify present and potential uses for the Lower Sweetwater River Estuary within the San Diego Bay Tidal Prism, to which the Upper Paradise Creek Flood Control Channel, is tributary. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. The Lower Sweetwater River, in hydrologic unit basin number 909.12 is not designated as for MUN, as indicated in the Basin Plan Table 2-2. The beneficial uses applicable to the Upper Paradise Flood Control Channel, the San Diego Bay Tidal Prism and the Lower Sweetwater River are as follows:

Table F-7. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001a, 002	Tidal Prism of the San Diego Bay via Upper Paradise Creek Flood Control Channel and Lower Sweetwater River	Existing: Industrial service supply (IND), navigation (NAV), contact water recreation (REC1), non-contact water recreation (REC2), commercial and sport fishing (COMM), biological habitats of special significance (BIOL), estuarine habitat (EST), wildlife habitat (WILD), preservation of rare, threatened or endangered species (RARE), marine habitat (MAR), migration of aquatic organisms (MIGR), spawning (SPWN), and shellfish harvesting (SHELL).
001b	Tidal Prism of the San Diego Bay via Lower Sweetwater River	Existing: Industrial service supply (IND), navigation (NAV), contact water recreation (REC1), non-contact water recreation (REC2), commercial and sport fishing (COMM), biological habitats of special significance (BIOL), estuarine habitat (EST), wildlife habitat (WILD), preservation of rare, threatened or endangered species (RARE), marine habitat (MAR), migration of aquatic organisms (MIGR), spawning (SPWN), and shellfish harvesting (SHELL).
003, 004, 005, and 006	Sweetwater River (Hydrologic Unit Basin No. 9.12)	Existing: industrial service supply (IND), non-contact water recreation (REC2), warm freshwater habitat (WARM), wildlife habitat (WILD). Potential: contact water recreation (REC1)
007, 008, 009, and 010	San Diego Bay	Existing: Industrial service supply (IND), navigation (NAV), contact water recreation (REC1), non-contact water recreation (REC2), commercial and sport fishing (COMM), biological habitats of special significance (BIOL), estuarine habitat (EST), wildlife habitat (WILD), preservation of rare, threatened or endangered species (RARE), marine habitat (MAR), migration of aquatic organisms (MIGR), and shellfish harvesting (SHELL).

Requirements of this Order implement the Basin Plan.

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 discharge from Outfall 001b constitutes a new discharge of an elevated temperature waste. As such, the Thermal Plan is applicable to the discharge. Requirements of this Order implement the Thermal Plan.

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. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

4. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP 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 CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

5. **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. § 131.21, 65 Fed. Reg. 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.

6. **Antidegradation Policy.** Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal

law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

7. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations[1] 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.

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

The San Diego Bay Shoreline, Chula Vista Marina, is identified on the 303(d) list for copper. The estimated size affected with respect to the Chula Vista Marina is 0.41 miles. The Chula Vista Marina is located 3.78 miles from the confluence of Upper Paradise Creek and the Lower Sweetwater River Estuary and is not a major source of copper to the Marina location.

E. Other Plans, Polices and Regulations

1. **Bays and Estuaries Policy**. The State Water Board adopted the Water Quality Control Policy for Enclosed Bays and Estuaries of California (Bays and Estuaries Policy) on May 16, 1974. The Bays and Estuaries Policy establishes principles for management of water quality, water quality requirements for waste discharges, discharge prohibitions, and general provisions to prevent water quality degradation and to protect the beneficial uses of waters of enclosed bays and estuaries. These principles, requirements, prohibitions, and provisions have been incorporated into this Order.

   The Bays and Estuaries Policy contains the following principles for management of water quality in enclosed bays and estuaries, which includes San Diego Bay:

   > *"The discharge of municipal wastewaters and industrial process waters (exclusive of cooling water discharges) to enclosed bays and estuaries shall be phased out at the earliest practicable date. Exceptions to this provision may be granted by a Regional Water Board only when the Regional Water Board finds that the wastewater in question would consistently be treated and discharged in such a manner that it would*

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

enhance the quality of receiving waters above that which would occur in the absence of the discharge."

For the purpose of this policy, treated ballast waters and innocuous non-municipal wastewater such as clear brines, washwater, and pool drains are not necessarily considered industrial process wastes, and may be allowed by Regional Water Boards under discharge requirements that provide protection to the beneficial uses of the receiving water. For the purpose of the Bays and Estuaries Policy and this Order, the discharge of reverse osmosis brine concentrate, groundwater well-purge water, plant feed-water dump, and chlorine contact-tank overflow associated with the Facility are considered innocuous non-municipal wastewaters and, as such, will not be considered industrial process wastes. Therefore, the discharges of such wastes may be allowed by this Regional Water Board under WDRs that provide protection of the beneficial uses of the receiving waters.

The following Principles for the Management of Water Quality in Enclosed Bays and Estuaries, as stated in the Bays and Estuaries Policy apply to all of California's enclosed bays and estuaries including San Diego Bay:

a. Persistent or cumulative toxic substances shall be removed from the waste to the maximum extent practicable through source control or adequate treatment prior to discharge.

b. Bay or estuarine outfall and diffuser systems shall be designed to achieve the most rapid initial dilution practicable to minimize concentrations of substances not removed by source control or treatment.

c. Wastes shall not be discharged into or adjacent to areas where the protection of beneficial uses requires spatial separation from waste fields.

d. Waste discharges shall not cause a blockage of zones of passage required for the migration of anadromous fish.

e. Nonpoint sources of pollutants shall be controlled to the maximum practicable extent.

As of the date of adoption of this Order, no segment of San Diego Bay has been designated as an area where the protection of beneficial uses requires spatial separation from waste fields. This Regional Water Board has considered the Principles for the Management of Water Quality in Enclosed Bays and Estuaries, in adopting this Order. The terms and conditions of this Order are consistent with the Principles for the Management of Water Quality in Enclosed Bays and Estuaries.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 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.

A. Discharge Prohibitions

Discharge Prohibitions in section III. of this Order are carried over from Order No. R9-2004-0111, with the exception of III.H. Prohibition A incorporates by reference Basin Plan Waste Discharge Prohibitions. Prohibition B ensures that the operating and discharge conditions under which this Order addresses are not modified in such a way as to result in exceedances of Basin Plan Objectives and/or impairment of beneficial uses. Prohibitions C, D, E, and F, and G are based on the directives contained in the Bays and Estuaries Policy and are carried over from Order No. R9-2004-0111. This Order modifies Prohibition III.H. to account for the planned increase in discharge flow. Prohibition I and J are carried over from Order No. R9-2004-0111 to ensure water quality objectives of the Basin Plan are adhered to. Prohibition K is carried over from R9-2004-0111 to prevent the introduction of wastes that were not considered in development of this Order.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations, require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Best Professional Judgment (BPJ) in accordance with Part 125, section 125.3. The CWA requires that technology-based effluent limitations be established based on several levels of controls:

a. Best practicable treatment control technology (BPT) represents the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.

b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering the "cost reasonableness" of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.

d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires USEPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and section 125.3 of the Code of Federal Regulations authorize the use of BPJ to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used, the permit writer must consider specific factors outlined in section 125.3.

2. Applicable Technology-Based Effluent Limitations

There are currently no effluent limitations guidelines that are specific to the type of discharge from this Facility. The TSS limitations in Table A of the Ocean Plan is designated for POTWs which remove large amounts of TSS from their effluent. Regional Board staff has conducted a review of TSS effluent limitation contained in the NPDES permit for several facilities that discharge to the ocean in the San Diego Region. It is evident, based on that review, that most POTWs and industrial facilities are capable of achieving a monthly average TSS level of 30 mg/l and a daily maximum TSS level of 50 mg/l in their effluent. Based on BPJ, the proposed Order restricts discharge flow rates at Discharge Point No. 001a and 001b to 0.8 MGD, 1.0 MGD and 2.5 MGD, respectively, based on the long-term average of the existing discharge and the projected long-term average of the proposed increased discharge. The Order also includes a restriction that the total flow from both Discharge Points may not exceed 2.5 MGD.

Table F-8. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Grease and Oil	mg/l	25				75
Total Suspended Solids	mg/l	30				50
Settleable Solids	mg/l	1.0				3.0
Turbidity	NTU	75				225
pH	Standard units	Within 6.0 to 9.0 at all time				

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

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.

Section 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, 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 section 122.44(d)(1)(vi).

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

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

Beneficial Uses of the Tidal Prism of the San Diego Bay and the Lower Sweetwater River are discussed in section III.C. The Basin Plan numeric water quality objectives applicable to these receiving waters are listed in Tables F-7 and F-8 below:

Table F-9. Basin Plan Objectives —Tidal Prism of San Diego Bay and San Diego Bay

Constituent	Units	Water Quality Criteria
pH	s.u.	Between 7.0 and 9.0 at all times. Changes in normal ambient pH shall not exceed 0.2 units.
Ammonia, un-ionized	mg/L	0.025 mg/L as N
Phosphorus	mg/L	0.1[1]
Nitrogen	mg/L	1.0[2]
Turbidity	NTU	Within the San Diego Bay, the transparency of bay waters, insofar as it may be influenced by any controllable factor, either directly or through induced conditions, shall not be less than 8 feet in more than 20 percent of the readings in any zone, as measured by a standard Secchi disk. Wherever the water is less than 10 feet deep, the Secchi disk reading shall not be less than 80 percent of the depth in more than 20 percent of the readings in any zone.

[1] Goal to prevent plant nuisance in streams and other flowing waters, not to be exceeded more than 10% of the time..

[2] Where natural ratios of N/P are lacking, a ratio of N:P equal to10:1, on a weight to weight basis shall be used.

Table F-10.Basin Plan Objectives —Lower Sweetwater River

Constituent	Units	Water Quality Criteria
pH	s.u.	Between 6.5 and 8.5 at all times. Changes in normal ambient pH shall not exceed 0.5 units.
Ammonia, un-ionized	mg/L	0.025 mg/L as N
Phosphorus	mg/L	0.1[1]
Nitrogen	mg/L	1.0[2]
Dissolved Oxygen	mg/L	5.0
Total Dissolved Solids	mg/L	1,500
Chloride	mg/L	500
Sulfate	mg/L	500
Percent Sodium	mg/L	60
Iron	mg/L	0.3
Manganese	mg/L	0.05
Methylene Blue Active Substances (MBAS)	mg/L	0.5
Boron	mg/L	0.75

Constituent	Units	Water Quality Criteria
Odor	mg/L	None
Color	Units	20
Turbidity	NTU	20

[1] Goal to prevent plant nuisance in streams and other flowing waters, not to be exceeded more than 10% of the time.

[2] Where natural ratios of N/P are lacking, a ratio of N:P equal to10:1, on a weight to weight basis shall be used.

This Order contains requirements for ph of "between 6.0 and 9.0 at all times", which is carried over from the existing permit. It is not anticipate that this will cause an exceedance of the applicable water quality objective in the receiving waters.

Effluent from Discharge Point Nos. 001a and 002 enter the Upper Paradise Creek Flood Control Channel and are conveyed a short distance (approximately 750 feet) to a location in the Lower Sweetwater River that is considered part of the tidal prism of the San Diego Bay. Priority pollutant water quality criteria in the CTR are applicable to the tidal prism of the San Diego Bay and the Lower Sweetwater River. The CTR contains both saltwater and freshwater criteria. As specified in the CTR, "(1) freshwater criteria apply at salinities of 1 ppt and below at locations where this occurs 95% or more of the time; 2) saltwater criteria apply at salinities of 10 parts per thousand and above at locations where this occurs 95 percent or more of the time; and (3) at salinities between 1 and 10 ppt the more stringent of the two apply unless EPA approves the application of the freshwater or saltwater criteria based on an appropriate biological assessment.

Because the lack of upstream water in the Upper Paradise Creek Flood Control Channel (effluent discharges from Discharge Point No. 001a and 002 typically dominate the flow) and because of the short distance from the discharge to the Lower Sweetwater River, the salinity in the Lower Sweetwater River, upstream of the confluence of the Paradise Creek Flood Control Channel, was used to represent ambient salinity to determine whether marine or freshwater criteria apply. A total of 25 samples were collected from April 25, 2007 through March 26, 2008. The results demonstrated salinity varied from 0.4 ppt to 30.3 ppt. The salinity concentration at which 95 percent of the results were greater than was 1.4 ppt. The salinity concentration at which 95 percent of the data were below was 29.88 ppt. Since 95 percent of the receiving water salinity results were neither at or below 1 ppt nor at or above 10 ppt, the more stringent of the saltwater or freshwater criteria apply to Discharge Point Nos. 001a and 002.

Well Purge water from Discharge Point Nos. 003, 004, 005, and 006 enter the Lower Sweetwater River at a location upstream of where mixing of tidal and freshwater occurs. For these discharges, CTR and NTR freshwater aquatic life criteria and human health criteria apply. As described in the CTR, most of the data for which hardness dependent criteria equations were developed were based on hardness data between 25 mg/L CaCO3 and 400 mg/L CaCO3. Further, as stated in the CTR, USEPA recommends that where actual ambient hardness is greater than 400 mg/L CaCO3, a value of 400 mg/L CaCO3 may be used to develop protective criteria. At a sampling station located upstream of Discharge Point 001 a, within the lower Sweetwater River, hardness was analyzed 9 times between October 17, 2004 and February 19, 2007. The minimum hardness value measured was 556 mg/L CaCO3. The freshwater criteria used in this Order were developed based on a capped hardness of 400 mg/L CaCO3. Table F-10 identifies the applicable water quality criteria for facility discharges both within the tidal prism and upstream in the freshwater portion of the Lower Sweetwater River. Where no detectable effluent or receiving water concentrations were found, the constituent is omitted from the Table.

Well purge water from Discharge Points Nos. 007, 008, 009, and 010 will enter San Diego Bay. For these discharges, CTR and NTR saltwater aquatic life criteria apply.

Table F-11. Applicable Water Quality Criteria (Priority Pollutants)

Constituent	Selected Criteria	CTR/NTR Water Quality Criteria					
		Freshwater		Saltwater[1]		Human Health for Consumption of:	
		Acute	Chronic	Acute	Chronic	Water & Organisms	Organisms only
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Arsenic, Total Recoverable	36	340	150	69	36	NA	--
Arsenic, Dissolved	36	340	150	69.00	36		--
Copper, Total Recoverable	3.7	52	31	5.8	3.7		--
Copper, Dissolved	3.1	50	29	4.8	3.1		--
Nickel, Total Recoverable	8.3	1500	170	75	8.3		4600
Selenium, Total Recoverable	5.0	20	5.0	290	71		Narrative
Selenium, Dissolved	5.0	20	5.0	290	71		--
Silver, Total Recoverable	2.2	44	--	2.2	--		--
Zinc, Total Recoverable	86	390	390	95	86		--

Constituent	Selected Criteria	CTR/NTR Water Quality Criteria					
		Freshwater		Saltwater[1]		Human Health for Consumption of:	
		Acute	Chronic	Acute	Chronic	Water & Organisms	Organisms only
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Zinc, Dissolved	81	380	380	90	81		--

[1] Not applicable to Outfalls 003, 004, 005, and 006.

"N/A" indicates that the water quality criteria for the protection of human health for the consumption of water and organisms are not applicable.

3. Determining the Need for WQBELs

Order No. R9-2004-0111 contained effluent limitations for non-conventional and toxic pollutant parameters in the Basin Plan as well as the CTR. For the proposed Order, the need for effluent limitations based on water quality objectives in the Basin Plan and CTR criteria was re-evaluated in accordance with 40 CFR 122.44(d) and guidance for statistically determining the "reasonable potential" for a discharged pollutant to exceed an objective, as outlined in the SIP. The Regional Water Board analyzes effluent and receiving water data and identifies the maximum observed effluent concentration (MEC) and maximum background concentration (B) in the receiving water for each constituent. To determine reasonable potential, the MEC and the B are then compared with the applicable water quality objectives (C) outlined in the CTR, NTR, as well as the Basin Plan. For all pollutants that have a reasonable potential to cause or contribute to an excursion above a state water quality standard, numeric WQBELs are required. The Reasonable Potential Analysis (RPA) considers water quality criteria from the CTR and NTR, and when applicable, water quality objectives specified in the Basin Plan. To conduct the RPA, the Regional Water Board identifies the MEC and maximum background concentration in the receiving water for each constituent, based on data provided by the Discharger.

Four years worth of data were considered representative of current discharges. Effluent data provided by the Discharger for the Facility from November 17, 2004 through November 13, 2008 were used in the analyses. Because the effluent discharges typically dominate the flow of the Upper Paradise Creek Flood Control Channel and because of the short distance from the discharge to the Lower Sweetwater River, ambient, upstream monitoring data for Discharge Point No. 001a and 002 was obtained from a location in the Lower Sweetwater River as opposed to the Upper Paradise Creek Flood Control Channel. The data set location was in the Lower Sweetwater River, less than 500 feet upstream of the confluence of the Paradise Creek Flood Control Channel. These data consisted of 29 samples collected from April 25 2007 through March 26, 2008. Ambient, upstream water quality data for Discharge Point Nos. 003 through 005 were available at

a location at Bonita Road, near Discharge Point No. 008 and consisted of six samples collected from October 17, 2004 through February 19, 2006.

Section 1.4.2 of the SIP establishes procedures for granting mixing zones and the assimilative capacity of the receiving water. Before establishing a dilution credit for a discharge, it must first be determined if, and how much, receiving water assimilative capacity is available to dilute the discharge. The Discharger has not requested dilution credit therefore zero dilution is assumed for calculation of limitations.

SIP methodology specifies determining the MEC and projecting receiving water values (based on the MEC and minimum probable initial dilution). The projected receiving water concentrations are then compared to the appropriate objective or criteria to determine the potential for an exceedance of that objective and the need for an effluent limitation.

A summary of the RPA results is provided in Tables F-10a through F-10d below. Several of the CTR/NTR parameters, were not detected in the effluent or receiving water using appropriate MLs. These are omitted from the table and are considered to not demonstrate reasonable potential. The second column in Tables F-10a through F-10d identifies either the Basin Plan or CTR/NTR as the basis for evaluating the parameter. The third column identifies the source of the criteria used within either the Basin Plan or CTR/NTR.

Table F-12a. Parameters Evaluated for Reasonable Potential –Demineralization Brine at Discharge Point No. 001a[1]

Parameter (µg/L)	Basis for Applying Criteria/ Objective[2]	Source of Applied Criteria/ Objective	n[3]	MEC µg/L	Most Stringent Criteria µg/L	Background µg/L	Effluent Limitation µg/L
Arsenic, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	19	2.4	36	NA	No
Arsenic, Total Recoverable	CTR/NTR	Saltwater Aquatic Life Chronic	29	18	36	2.2	No
Copper, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	19	2.89	3.1	NA	No
Copper, Total Recoverable	CTR/NTR	Saltwater Aquatic Life Chronic	39	4.3	3.73	3.82	Yes[4]
Nickel, Total Recoverable	CTR/NTR	Saltwater Aquatic Life Chronic	10	26	8.3	NA	Yes
Silver, Total Recoverable	CTR/NTR	Freshwater Aquatic Life Acute	10	< 3	2.2	NA	No

Parameter (µg/L)	Basis for Applying Criteria/ Objective[2]	Source of Applied Criteria/ Objective	n[3]	MEC µg/L	Most Stringent Criteria µg/L	Background µg/L	Effluent Limitation µg/L
Zinc, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	19	18.1	81	NA	No
Zinc, Total Recoverable	CTR/NTR	Saltwater Aquatic Life Chronic	29	12.1	86	11.1	No
Selenium, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	19	5.6	5.0	NA	Yes[4]
Selenium, Total Recoverable	CTR/NTR	Freshwater Aquatic Life Chronic	30	62	5.0	< 1	Yes[4]

1 Parameters are excluded from this table if no detected concentrations are found in effluent or receiving water and no other information indicates that effluent limitations are necessary.

2 CTR/NTR =National Toxics Rule/California Toxics Rule.

3 Number of data points available for the RPA.

4 According to 40 CFR Part 122.45(c), effluent limitations for metals shall be expressed in terms of “total recoverable”, thus only total recoverable limitations for copper and selenium shall be applied.

“NA” indicates data were not available.

Table F-12b. Parameters Evaluated for Reasonable Potential –Well Purge Water[1]

Parameter (µg/L)	Basis for Applying Criteria/ Objective[2]	Source of Applied Criteria/ Objective	n[3]	MEC µg/L	Most Stringent Criteria µg/L	Background µg/L	Effluent Limitation µg/L
SDF-1 (Discharge Point No. 002)							
Arsenic, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	15	1.2	36	NA	No
Copper, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	16	3.7	3.1	NA	Yes
Selenium, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	15	1.2	5	NA	No
Zinc, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	15	2.6	81	NA	No
SDF-2 (Discharge Point No. 002)							
Arsenic, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	15	1.6	36	NA	No
Copper, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	16	7.7	3.1	NA	Yes
Selenium, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	15	1.1	5	NA	No
Zinc, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	15	12.4	81	NA	No
SDF-3 (Discharge Point No. 003)							
Arsenic, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	14	< 0.6	150	2	No
Copper, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	15	11	29	6	No
Selenium, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	14	< 0.4	5.0	< 4	No
Zinc, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	14	18.4	380	40	No
SDF-4 (Discharge Point No. 004)							
Arsenic, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	14	0.8	150	2	No
Copper,	CTR/NTR	Freshwater	15	9.9	29	6	No

Parameter (µg/L)	Basis for Applying Criteria/ Objective[2]	Source of Applied Criteria/ Objective	n[3]	MEC µg/L	Most Stringent Criteria µg/L	Background µg/L	Effluent Limitation µg/L
Dissolved		Aquatic Life Chronic					
Selenium, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	14	< 0.4	5.0	< 4	No
Zinc, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	14	3.0	380	40	No
SDF-5 (Discharge Point No. 005)							
Arsenic, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	11	< 0.6	150	2	No
Copper, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	12	20.1	29	6	No
Selenium, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	11	< 0.4	5.0	< 4	No
Zinc, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	11	26.4	380	40	No
SDF-6 (Discharge Point No. 002)							
Arsenic, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	10	1.6	36	NA	No
Copper, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	10	3	3.1	NA	Yes[4]
Selenium, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	10	1.0	5	NA	No
Zinc, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	10	< 2.0	81	NA	No

1 Parameters are excluded from this table if no detected concentrations are found in effluent or receiving water and no other information indicates that they are present in the effluent.

2 CTR/NTR =National Toxics Rule/California Toxics Rule.

3 Number of data points available for the RPA.

4 Although the MEC is not greater than the criteria for SDF-6, the copper concentrations in other San Diego Formation Well discharges (SDF-1 and SDF-2) at this location (Discharge Point No. 002) indicate copper is present in concentrations greater than the aquatic life marine water quality criteria. Step 7 of the SIP allows for other information to determine if a water quality-based effluent limitation is necessary to protect beneficial uses.

NA indicates data were not available

Table F-12c. Parameters Evaluated for Reasonable Potential –Plant Feed-water Dumps at Discharge Point No. 002[1]

Parameter (µg/L)	Basis for Applying Criteria/ Objective[2]	Source of Applied Criteria/ Objective	n[3]	MEC µg/L	Most Stringent Criteria µg/L	Background µg/L	Effluent Limitation µg/L
Copper, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	7	5.5	3.1	NA	Yes
Arsenic, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	7	2.0	36	NA	No
Zinc, Dissolved	CTR/NTR	Aquatic Life Chronic	7	19.8	81	NA	No
Selenium, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	7	0.7	5.0	NA	No

1 Parameters are excluded from this table if no detected concentrations are found in effluent or receiving water and no other information indicates that effluent limitations are necessary.

2 Number of data points available for the RPA.

NA indicates data were not available

Table F-12d. Parameters Evaluated for Reasonable Potential –Chlorine Contact Tank Discharge at Discharge Point No. 002[1]

Parameter (µg/L)	Basis for Applying Criteria/ Objective[2]	Source of Applied Criteria/ Objective	n[3]	MEC[4] µg/L	Most Stringent Criteria µg/L	Background µg/L	Effluent Limitation µg/L
Copper, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	10	1.1	3.1	NA	No
Arsenic, Dissolved	CTR/NTR	Saltwater Aquatic Life Chronic	9	< 5	36	NA	No
Zinc, Dissolved	CTR/NTR	Aquatic Life Chronic	10	< 6	81	NA	No
Selenium, Dissolved	CTR/NTR	Freshwater Aquatic Life Chronic	10	< 0.4	5	NA	No

1 Parameters are excluded from this table if no detected concentrations are found in effluent or receiving water and no other information indicates that effluent limitations are necessary.

2 CTR/NTR =National Toxics Rule/California Toxics Rule.

3 Number of data points available for the RPA.

a. **Ammonia in Well Purge Water and Plant Feed-Water.** Monitoring of a blend of groundwater from source wells was conducted from April 25, 2007 through March 26, 2008. The maximum concentration of total ammonia observed during this period in the blend samples was 0.28 mg/L as N. The Basin Plan Objective for ammonia (0.025 mg/L) is expressed as un-ionized ammonia as N. Monitoring results from the blend sample do not distinguish ammonia contributions from individual wells and a comparison of the total ammonia concentrations and the un-ionized ammonia objective cannot be made without corresponding temperature, pH, and salinity values. For these reasons, limitations are not included in this Order. However, the ammonia concentrations in the blend indicate that ammonia may be of concern in at least some of the wells. To further ascertain the potential for ammonia to impair beneficial uses, quarterly monitoring requirements for well purge and feed- water dumps at Discharge Point Nos. 001a, 001b, 002, 003, 004, and 005, 006, 007, 008, 009, and 010 are included in this Order.

b. **Ammonia in Brine Discharge.** Brine effluent monitoring data collected at Discharge Point No. 001a from April 25, 2007 through March 26, 2008 resulted in a maximum total ammonia concentration of 0.8 mg/L as N. Upstream Sweetwater River monitoring collected during the same period resulted in a maximum receiving water concentration of total ammonia of 0.35 mg/L as N. Similarly, the maximum total ammonia concentration at the confluence of the discharge from Upper Paradise Creek Flood Control Channel and the Lower Sweetwater River was 0.28 mg/L as N. The Basin Plan objective for un-ionized ammonia is 0.025 mg/L as N. Data on pH, salinity, and temperature for the sample were not available, thus the results in total ammonia as N cannot be compared to the Basin Plan Objective which is in terms of un-ionized ammonia as N, thus no limitations are included in this Order for un-ionized ammonia. In order to collect the data necessary to determine reasonable potential, this Order includes monitoring as discussed in section VI.B.

c. **Biostimulatory Substances in Brine Discharge.** The Basin Plan establishes that waters shall not contain *"biostimulatory substances in concentrations that promote aquatic growth to the extent that such growths cause nuisance or adversely affect beneficial uses."* The goal to prevent impairment of beneficial uses due to phosphorus is 0.1 mg/L of total phosphorus. The Discharger conducted a water quality monitoring study of phosphorus and nitrogen with samples collected between April 25, 2007 and March 26, 2008 from the effluent and Sweetwater River Estuary locations upstream and downstream of the confluence of the Upper Paradise Creek Flood Control Channel. The results were reported in the *Reynolds Discharge Monitoring Program, Annual Report (AMEC Earth and Environmental, Inc., September 2008)*. Summary statistics of these results are presented in Table F-12 below.

Table F-13. Summary of Phosphorus and Nitrogen Monitoring (April 25, 2007 Through March 26, 2008)

	Min (mg/L)	Median (mg/L)	Max (mg/L)	Basin Plan Goal (mg/L)	Percent of Results Exceeding Goal
Total Phosphorus					
Upstream Concentration	ND[1]	0.11	0.72	0.1	62%
Brine Concentration	0.05	0.11	1.3	0.1	52%
Confluence Concentration	0.04	0.12	1.8	0.1	62%
Total Nitrogen					
Upstream Concentration	< 0.5	0.78	1.61	1.0	24%
Brine Concentration	< 0.5	0.7	1.3	1.0	14%
Confluence Concentration	< 0.5	0.56	1.47	1.0	10%

[1] Less than the reporting limit of 0.1 mg/L

Within the *Reynolds Discharge Monitoring Program, Annual Report,* the facility presented results of an inter-laboratory comparison study to the Regional Water Board suggesting that the contract laboratory phosphorus results (that provided NPDES compliance monitoring) up until June 13 of 2007 were higher than results from other laboratories. After June 13, 2007, the facility switched contract labs, yet 7 out of 21 effluent phosphorus results from this data set were still greater than the Basin Plan goal of 0.1 mg/L. When effluent monitoring results conducted as part of the Monitoring and Reporting Program (MRP) are combined with the special nutrient study, 44 out of 78 effluent samples resulted in phosphorus concentrations greater than the goal for plant nuisance. Because of the potential for effluent to contribute to an exceedance of the water quality objective to prevent plant nuisance, this Order includes brine effluent limitations for total phosphorus equal to 0.1 mg/L at Discharge Point Nos. 001a and 001b.

The Basin Plan does not establish a goal for nitrogen, however, provides recommendation that natural ratios of Nitrogen to Phosphorus (N:P) *"be determined by surveillance and upheld".* Nitrogen and Phosphorus monitoring was conducted a from April 2007 through March 2008, however, because the data spanned only one year, the natural N/P cannot be accurately established to account for seasonal and climatic differences that would occur over a longer period. In the absence of a natural ratio, the Basin Plan specifies a ratio of N:P of 10:1 be used to determine

nitrogen concentrations that would prevent impairment of beneficial uses. During the April 25, 2007 through March 26, 2008 sampling period, 4 out of 29 nitrogen results (14 percent) were greater than the threshold of 1.0 mg/L. Monitoring conducted under the MRP indicated all other nitrogen results were below the threshold of 1.0 mg/L. Because of the potential for effluent to contribute to an exceedance of the water quality objective to prevent plant nuisance, this Order includes a brine effluent limitation for total nitrogen equal to 1.0 mg/L at Discharge Point Nos. 001a and 001b.

d. Biostimulatory Substances in Well Purges and Plant Feed-Water. No nutrient monitoring data for individual Discharge Point Nos. 002, 003, 004, and 005 were available for the RPA. However, from April 25, 2007 through March 26, 2008, the Discharger analyzed samples of different blends of groundwater source water. Since the effluent quality of well purge and plant feed water dumps is largely dependent on the source water quality, the groundwater nutrient monitoring data were compared to Basin Plan Objectives for biostimulatory substances. Out of 29 samples collected during the aforementioned sample period, the maximum concentration of total nitrogen observed was 0.84 mg/L as N, which is less than the Basin Plan threshold to prevent plant nuisance of 1.0 mg/L as N. During the same period, the maximum concentration of phosphorus was 0.78 mg/L total P, with 6 out of 29 samples exhibiting phosphorus concentrations greater than the Basin Plan goal of 0.1 mg/L. The instances where phosphorus concentrations were greater than 0.1 mg/L all occurred prior to June 21, 2007, when the Discharger switched contract laboratories. Since that time, 21 results were below 0.1 mg/L. Although there are groundwater feed-water phosphorus concentrations that are greater than the Basin Plan goals, limitations are not included in this order because 1) the groundwater source is a blend of different well sources and the phosphorus cannot be attributed to particular wells and 2) as indicated in Table F-2, the discharges tend to be intermittent and of short duration. Because of these two factors, it cannot be determined if the feed-water dumps or the well purge waters would contribute to exceedances of the Basin Plan goal to prevent plant nuisances. To further ascertain the potential for impairment, quarterly monitoring requirements for total nitrogen and phosphorus in well purge and feed-water dumps are included in this Order.

4. WQBEL Calculations

a. Effluent limitations for the CTR/NTR constituents copper, nickel, and selenium at Discharge Point Nos. 001a and 001b and copper at Discharge Point No. 002, were calculated in accordance with section 1.4 of the SIP. If a reasonable potential exists to exceed applicable water quality criteria or objectives, then a WQBEL must be established in accordance with one or more of the three procedures contained in Section 1.4 of the SIP. These procedures include:

i. If applicable and available, use of the WLA established as part of a TMDL.

ii. Use of a steady-state model to derive maximum daily effluent limitations (MDELs) and average monthly effluent limitations (AMELs).

iii. Where sufficient effluent and receiving water data exist, use of a dynamic model, which has been approved by the Regional Water Board.

b. Water quality-based effluent limits (final) for the constituents identified in Tables F-14a through F-14d are based on monitoring results and following the procedure based on the steady-state model, available in Section 1.4 of the SIP.

c. The Discharger has not requested dilution credit, therefore, no dilution credit is being allowed. However, in accordance with the reopener provision in section VI.C.1.g in the Tentative Order, this Order may be reopened upon the submission by the Discharger of adequate information to establish appropriate dilution credits or a mixing zone, as determined by the Regional Water Board.

d. WQBELs Calculation Example

Using nickel at Discharge Point Nos. 001a and 001b as an example, the following demonstrates how WQBELs were established for this Order.

Concentration-Based Effluent Limitations

A set of AMEL and MDEL values are calculated separately, one set for the protection of aquatic life and the other for the protection of human health. The AMEL and MDEL limitations for aquatic life and human health are compared, and the most restrictive AMEL and the most restrictive MDEL are selected as the WQBEL.

Calculation of aquatic life AMEL and MDEL:

Step 1: For each constituent requiring an effluent limit, identify the applicable water quality criteria or objective. For each criteria determine the effluent concentration allowance (ECA) using the following steady state equation:

$ECA = C + D(C-B)$ when $C > B$, and
$ECA = C$ when $C \leq B$

Where: C = The priority pollutant criterion/objective, adjusted if

necessary for hardness, pH and translators
D = The dilution credit, and
B = The background concentration

As discussed above, for this Order, dilution was not allowed; therefore:

ECA = C

For nickel the applicable water quality criteria are (reference Table F-10):

ECA_{acute}= 74.8 µg/L
$ECA_{chronic}$= 8.3 µg/L

Step 2: For each ECA based on aquatic life criterion/objective, determine the long-term average discharge condition (LTA) by multiplying the ECA by a factor (multiplier). The multiplier is a statistically based factor that adjusts the ECA to account for effluent variability. The value of the multiplier varies depending on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP provides pre-calculated values for the multipliers based on the value of the CV. Equations to develop the multipliers in place of using values in the tables are provided in Section 1.4, Step 3 of the SIP and will not be repeated here.

$LTA_{acute} = ECA_{acute} \times Multiplier_{acute\ 99}$

$LTA_{chronic} = ECA_{chronic} \times Multiplier_{chronic\ 99}$

The CV for the data set must be determined before the multipliers can be selected and will vary depending on the number of samples and the standard deviation of a data set. If the data set is less than 10 samples, or at least 80 percent of the samples in the data set are reported as non-detect, the CV shall be set equal to 0.6.

For nickel, the following data were used to develop the acute and chronic LTA using equations provided in Section 1.4, Step 3 of the SIP (Table 1 of the SIP also provides this data up to three decimals):

No. of Samples	CV	ECA $Multiplier_{acute\ 99}$	ECA $Multiplier_{chronic\ 99}$
10	0.69	0.286	0.486

LTA_{acute} = 74.8 µg/L x 0.286 = 21.4 µg/L

$LTA_{chronic}$ = 8.3 µg/L x 0.486 = 4.03 µg/L

Step 3: Select the most limiting (lowest) of the LTA.

LTA = most limiting of LTA_{acute} or $LTA_{chronic}$

For nickel, the most limiting LTA was the $LTA_{chronic}$

LTA = 4.03 µg/L

Step 4: Calculate the WQBELs by multiplying the LTA by a factor (multiplier). WQBELs are expressed as an AMEL and MDEL. The multiplier is a statistically-based factor that adjusts the LTA for the averaging periods and exceedance frequencies of the criteria/objectives and the effluent limitations. The value of the multiplier varies depending on the probability basis, the CV of the data set, the number of samples (for AMEL) and whether it is a monthly or daily limit. Table 2 of the SIP provides pre-calculated values for the multipliers based on the value of the CV and the number of samples. Equations to develop the multipliers in place of using values in the tables are provided in Section 1.4, Step 5 of the SIP and will not be repeated here.

$AMEL_{aquatic\ life} = LTA \times AMEL_{multiplier\ 95}$

$MDEL_{aquatic\ life} = LTA \times MDEL_{multiplier\ 99}$

AMEL multipliers are based on a 95th percentile occurrence probability, and the MDEL multipliers are based on the 99th percentile occurrence probability. If the number of samples is less than four (4), the default number of samples to be used is four (4).

For nickel, the following data were used to develop the AMEL and MDEL for aquatic life using equations provided in Section 1.4, Step 5 of the SIP (Table 2 of the SIP also provides this data up to two decimals):

No. of Samples Per Month	CV	$Multiplier_{MDEL\ 99}$	$Multiplier_{AMEL\ 95}$
4	0.69	3.5	1.64

$AMEL_{aquatic\ life} = 4.03 \times 1.64 = 6.6$ µg/L

$MDEL_{aquatic\ life} = 4.03 \times 3.50 = 14$ µg/L

Calculation of human health AMEL and MDEL:

Step 5: For the ECA based on human health, set the AMEL equal to the $ECA_{human\ health}$

$$AMEL_{human\ health} = ECA_{human\ health}$$

For nickel

$$AMEL_{human\ health} = 4600\ \mu g/L$$

Step 6: Calculate the MDEL for human health by multiplying the AMEL by the ratio of the $Multiplier_{MDEL}$ to the $Multiplier_{AMEL}$. Table 2 of the SIP provides pre-calculated ratios to be used in this calculation based on the CV and the number of samples.

$$MDEL_{human\ health} = AMEL_{human\ health} \times (Multiplier_{MDEL} / Multiplier_{AMEL})$$

For nickel, the following data were used to develop the $MDEL_{human\ health}$:

No. of Samples Per Month	CV	$Multiplier_{MDEL\ 99}$	$Multiplier_{AMEL\ 95}$	Ratio
4	0.69	3.50	1.64	2.137

$$MDEL_{human\ health} = 4{,}600\ \mu g/L \times 2.137 = 9830\ \mu g/L$$

Step 7: Select the lower of the AMEL and MDEL based on aquatic life and human health as the WQBEL for the Order.

$AMEL_{aq.\ life}$	$MDEL_{aq.\ life}$	$AMEL_{HH}$	$MDEL_{HH}$
6.6	14	4600	9830

The lowest (most restrictive) effluent limits are based on aquatic toxicity and were incorporated into this Order. For copper and selenium there are no numeric human health criteria; therefore, the AMEL and MDEL based on aquatic life criteria are established as the WQBELs. These limits will be protective of aquatic life.

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 Maximum Contaminant Levels) and mass limitations are not necessary to protect the beneficial uses of the receiving water. As stated in 40 CFR section 122.45(f)(1)(ii), mass limitations are not required when applicable standards are expressed in terms of other units of measurement. For intermittent discharges (Discharge Point Nos. 002, 003, 004, 005, 006, 007, 008, 009, and 010), mass-based limitations were not included in this Order as the short and infrequent duration of these discharges represent minimal contributions in loadings to the receiving water. As stated in 40 CFR section 122.45(f)(1)(ii), mass limitations are not required when applicable standards are expressed in terms of other units of measurement. The numerical effluent limitations for copper, nickel, selenium, and nutrients in the brine discharge, in the proposed Order, are based on water quality standards and objectives. These are expressed in terms of concentration and mass. Mass-based effluent limitations for brine discharge were calculated using the following equation:

Lbs/day = Permitted Flow (MGD) x Pollutant Concentration (mg/L) x 8.34

A summary of the calculations for WQBELs established in this Order is provided below.

Table F-14a. WQBEL Calculations for Copper, Total Recoverable, at Discharge Point No. 002

Parameter	Acute	Chronic
Criteria (µg/L)[1]	5.78	3.73
Dilution Credit	None	None
ECA	5.78	3.73
ECA Multiplier	0.164	0.303
LTA	0.95	1.13
AMEL Multiplier (95th%)	2.21	[2]
AMEL (µg/L)	2.1	[2]
MDEL Multiplier (99th%)	6.11	[2]
MDEL (µg/L)	5.8	[2]

[1] USEPA Ambient Water Quality Criteria

[2] Limitations based on acute LTA (Acute LTA < Chronic LTA)

Table F-14b. WQBEL Calculations for Copper, Total Recoverable, at Discharge Point Nos. 001a and 001b

Parameter	Acute	Chronic
Criteria (µg/L)[1]	5.78	3.73
Dilution Credit	None	None
ECA	5.78	3.73
ECA Multiplier	0.321	0.527
LTA	1.86	1.97
AMEL Multiplier (95th%)	1.55	[2]
AMEL (µg/L)	2.88	[2]
MDEL Multiplier (99th%)	3.11	[2]
MDEL (µg/L)	5.78	[2]

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

Table F-14c. WQBEL Calculations for Nickel, Total Recoverable, at Discharge Point Nos. 001a and 001b

Parameter	Acute	Chronic
Criteria (µg/L)[1]	74.8	8.3
Dilution Credit	None	None
ECA	74.8	8.28
ECA Multiplier	0.286	0.486
LTA	21.4	4.03
AMEL Multiplier (95th%)	[2]	1.64
AMEL (µg/L)	[2]	6.6
MDEL Multiplier (99th%)	[2]	3.5
MDEL (µg/L)	[2]	14

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

Table F-14d. WQBEL Calculations for Selenium, Total Recoverable, at Discharge Point No. 001a and 001b

Parameter	Acute	Chronic
Criteria (µg/L)[1]	20	5.0
Dilution Credit	None	None
ECA	20	5.0
ECA Multiplier	0.32	0.53
LTA	6.4	2.64
AMEL Multiplier (95th%)	[2]	1.55
AMEL (µg/L)	[2]	4.1
MDEL Multiplier (99th%)	[2]	3.11
MDEL (µg/L)	[2]	8.2

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

Copper limitations at Discharge Point No. 002 were developed to apply to plant feed-water dump and contributing well purges from SDF-1, SDF-2, and SDF-6. Each set of monitoring data resulted in a different coefficient of variation. The well purge copper monitoring data exhibited a higher CV (1.29) than the plant feed-water copper CV (0.68), which resulted in a more stringent AMEL (2.1 versus 2.7). The calculated MDELs were the same for both plant feed water dump and well purges. In order to develop a single set of copper limitations at Discharge Point No. 002 that is protective of beneficial uses, the more stringent AMEL developed from the well purge data from SDF-1, SDF-2, and SDF-6 is applied at Discharge Point No. 002. The resulting limitations are a total recoverable copper AMEL of 2.1 µg/L and an MDEL of 5.8 µg/L.

Summary of Water Quality-based Effluent Limitations

Table F-15a. Summary of Water Quality-based Effluent Limitations-Well Purge Water from SDF No.1, SDF No.2, and SDF No.6 and Plant Feed-Water Dump[1]

Parameter	Units	Effluent Limitations				Basis
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
pH	standard units	--	--	6.0	9.0	Previous Order
Copper, Total Recoverable	µg/L	2.1	5.8	--	--	SIP/CTR

[1] Applicable at Discharge Point No. 002.

Table F-15b. Summary of Water Quality-based Effluent Limitations-Chlorine Contactor.[1]

Parameter	Units	Effluent Limitations				Basis
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
pH	standard units	standard units	--	6.0	9.0	Previous Order
Chlorine, Total Residual	mg/L	--	0[2]	--	--	Previous Order

1 Applicable at Discharge Point No. 002 (monitoring location INT-001).

2 No Detectable Concentrations using lowest ML approved by Regional Water Board.

Table F-15c. Summary of Water Quality-based Effluent Limitations-Well Purges.[1]

Parameter	Units	Effluent Limitations		Basis
		Instantaneous Minimum	Instantaneous Maximum	
pH	standard units	6.0	9.0	Previous Order

1 Applicable at Discharge Point Nos. 003, 004, and 005.

Table F-15d. Summary of Water Quality-based Effluent Limitations-Brine Discharge[1]

Parameter	Units	Effluent Limitations				Basis
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
pH	standard units	--	--	6.0	9.0	Previous Order
Salinity	ppt	8-11	--	--	--	Basin Plan – Toxicity Narrative Objective
Temperature	ºC, ºF	**a.** The maximum temperature shall not exceed the natural receiving water temperature by more than 20ºF.				Thermal Plan
Nitrate	mg/L	--	5.0	--	--	Previous Order[5]
	lbs/day[2]	--	33	--	--	
	lbs/day[3]	--	42	--	--	
	lbs/day[4]	--	100	--	--	
Nitrogen, Total (as N)	mg/L	--	1.0	--	--	Basin Plan Objective-Bays and Estuaries-threshold value to prevent plant nuisance
	lbs/day[2]	--	6.7	--	--	
	lbs/day[3]	--	8.3	--	--	
	lbs/day[4]	--	21	--	--	

Parameter	Units	Effluent Limitations				Basis
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Phosphorus, Total (as P)	mg/L	--	0.1	--	--	Basin Plan Objective-Bays and Estuaries-goal to prevent plant nuisance
	lbs/day[2]	--	0.67	--	--	
	lbs/day[3]	--	0.83	--	--	
	lbs/day[4]	--	2.1	--	--	
Copper, Total Recoverable	µg/L	2.9	5.8	--	--	SIP/CTR
	lbs/day[2]	0.019	0.039	--	--	
	lbs/day[3]	0.024	0.048	--	--	
	lbs/day[4]	0.060	0.12	--	--	
Nickel, Total Recoverable	µg/L	6.6	14	--	--	SIP/CTR
	lbs/day[2]	0.044	0.093	--	--	
	lbs/day[3]	0.055	0.12	--	--	
	lbs/day[4]	0.14	0.29	--	--	
Selenium, Total Recoverable	µg/L	4.1	8.2	--	--	SIP/CTR
	lbs/day[2]	0.027	0.055	--	--	
	lbs/day[3]	0.034	0.068	--	--	
	lbs/day[4]	0.085	0.17	--	--	

[1] Applicable at Discharge Point Nos. 001a and 001b.
[2] Based on a flow of 0.8 MGD at Discharge Point No. 001a (June through November).
[3] Based on a flow of 1.0 MGD at Discharge Point No. 001a (December through May).
[4] Based on a flow of 2.5 MGD at Discharge Point No. 001b.
[5] Order No. R9-2004-0111 included limitation based on BPJ and the Monitoring and Mitigation Plan.

These requirements have been incorporated in this Order as effluent and receiving water limitations in section V.A.

5. Whole Effluent Toxicity (WET)

Whole effluent toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative “no toxics in toxic amounts” criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction, and growth.

The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses by aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota.

In addition to the Basin Plan requirements, Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters.

The discharges from Discharge Point Nos. 001a and 001b could contribute to long-term toxic effects within the receiving water. However, the most recent acute and chronic toxicity monitoring data available is from March 10, 2003. Because this WET monitoring data may no longer be representative of the current discharge, in accordance with the SIP, the Discharger will be required to conduct chronic toxicity testing at Discharge Point No. 001a and 001b (monitoring location EFF-001a and EFF-001b) in order to determine reasonable potential and establish WQBELs as necessary. In addition, the Order establishes thresholds that when exceeded requires the Discharger to conduct accelerated toxicity testing and/or conduct toxicity reduction evaluation (TRE) and toxicity identification evaluation (TIE) studies.

D. Final Effluent Limitations

Tables F-14a through F-14d, collectively list the effluent limitations established in this Order under section IV.A.

1. Satisfaction of Anti-Backsliding Requirements

The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, with the exception of effluent limitations for total residual chlorine and copper. Order No. R9-2004-0111 contained total residual chlorine limitations applicable to well purge water, plant feed-water dump, air pressure relief valves, and chlorine contact tank overflow. Of these sources, chlorine is added only to the chlorine contact tank; chlorine is not used in any other portion of the treatment system and will therefore not be present in other discharges such as from well feed-water, well purge water, and pressure relief valves. As a result, the maximum daily total residual chlorine limitation in this Order is applied only to discharges from the chlorine contact tank. Regulations pertaining to anti-backsliding in CWA Section 402.02 allow for relaxation of limitations based on new information that was not available at the time of permit issuance. As such, the new information clarifying chlorination locations satisfies Anti-backsliding conditions. Effluent monitoring requirements from Order No. R9-2004-0111 specifically addressed chlorine contact tank discharges and are retained in this Order.

Order No. R9-2004-0111 contained a single effluent limitation for copper of 3.73 ug/L, expressed as a daily maximum, which is equal to the USEPA chronic, saltwater, copper criteria. For this Order, the most recent SIP procedures were followed and as demonstrated in IV.C.4 of this Fact Sheet, both average monthly and maximum daily copper limitations were calculated. Anti-backsliding regulations allow for less stringent effluent limitations when

new information is available that was not available at the time of permit issuance. As such, the new calculations of both monthly average and daily maximum limitations constitutes new information, thus allowing for the less stringent maximum daily effluent limitation. The monthly average limitation ensures that the chronic copper water quality objective will be met. The discharge will not impair beneficial uses and its removal is consistent with 40 CFR 122.44(l)(1).

2. Satisfaction of Antidegradation Policy

Waste Discharge Requirements for the Discharger must conform with federal and State antidegradation policies provided at 40 CFR 131.12 and in State Water Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California. The antidegradation policies require that beneficial uses and the water quality necessary to maintain those beneficial uses in the receiving waters of the discharge shall be maintained and protected, and, if existing water quality is better than the quality required to maintain beneficial uses, the existing water quality shall be maintained and protected unless allowing a lowering of water quality is necessary to accommodate important economic and social development or consistent with maximum benefit to the people of California. When a significant lowering of water quality is allowed by the Regional Water Board, an antidegradation analysis is required in accordance with the State Water Board's Administrative Procedures Update (July 2, 1990), Antidegradation Policy Implementation for NPDES Permitting.

The Discharger has proposed a plant expansion which would result in an increase in the brine discharge from the currently authorized 0.8 MGD to 2.5 MGD at the relocated Discharge Point designated 001b. In order to assess the potential impacts of the increased discharge to the receiving water, the Regional Water Board required the Discharger to collect additional water quality and biological monitoring data and conduct a salinity mixing model analysis. The Discharger implemented the water quality monitoring over a 1-year period from April 2007 through March 2008. The Discharger reported the results of the salinity modeling analysis in November 2008.

The results of the biological monitoring showed that the current discharge is having some chemical and biological effects on the lower Sweetwater River in the vicinity of the confluence with the Upper Paradise Creek Flood Control Channel and that any increase may exacerbate these effects. The most significant factor considered was the influence of low salinity in the discharge compared to the receiving water. Data presented in the *Brine Discharge Mixing Analysis, Final Report, (November 2008)* indicate that the brine discharge salinity is within the brackish range, with a historical average of 7.8 ppt.[2] Data collected between April 25, 2007 and March 25, 2008 indicate that

[2] Everest International Consultants, *Brine Discharge Mixing Analysis, Final Report,* November, 2008, p 3.

the receiving water salinity at the location of the confluence of Upper Paradise Flood Control Channel and the Lower Sweetwater River varies from 0.8 ppt to 31.2 ppt[3]. In addition, the tidal influence results in some potential biological effects of the discharge at a location 500 ft. upstream of the confluence. The Regional Water Board also found that at the existing discharge location, the relatively high concentration of orthophosphate and possibly other constituents in the discharge appear to have effects on macroalgae and salinity, which, in turn, affects macroinvertebrates and wetland vegetation.

In the interim, this Order allows an increase in flow from 0.8 MGD to 1.0 MGD at the existing discharge location during the months of December thru May. During the winter months, the receiving water contains low salinity levels due to an influx of freshwater and it is anticipated that an increase in flow will not cause any additional impacts.

Salinity modeling indicated that upon relocating the discharge to the area represented by Box 5 model results, approximately 2,200 ft downstream of the confluence, where more tidal action and dilution is provided, changes in receiving water composition will be minimized and impacts will be nonexistent or negligible. Model results predict that if the discharge is moved to a Box 5 location the maximum change in receiving water salinity from the existing conditions would occur at Box 2 (the existing confluence location), where the salinity would change from approximately 24 ppt (mean, measured under partial mixing conditions) to approximately 32 ppt (assumes full mixing spring tide conditions). The model also indicates that at this relocation, the salinity at the Box 7 location (4,639 ft. to 6,519 ft downstream) would not change from the current conditions. Because the brine discharge is brackish, a relocated discharge may help to buffer the effects of freshwater inputs in the Lower Sweetwater River. When considering the salinity variation will lessen, the proposed increase in discharge is not expected to cause impacts to the biological community and as such does not constitute a “significant lowering of water quality”. The proposed Order restricts the increase in flow only to the relocated Discharge Point No. 001b, with flow at Discharge Point No.001a limited to 0.8 MGD. In addition, the total flow from both discharge points may not exceed 2.5 MGD.

3. Stringency of Requirements for Individual Pollutants

This Order contains water quality-based effluent limitations for individual pollutants, discussed in section IV.B of the Fact Sheet. These limitations are not more stringent than that required by the CWA. WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal

[3] AMEC Earth and Environmental, Inc., Reynolds Discharge Monitoring Program, Annual Report, September 2008.

water quality standards. To the extent that toxic pollutant WQBELs were derived from the CTR, the CTR is the applicable standard pursuant to section 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. All the 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 CWA" pursuant to section 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

E. Performance Goals at Discharge Point No. 001a and 001b

Constituents that do not have reasonable potential or had inconclusive reasonable potential analysis results are referred to as performance goal constituents and are assigned the performance goals listed in the following table. Performance goal constituents shall be monitored at EFF-001a and EFF-001b, but the results will be used for informational purposes only, not compliance determination.

Table F-16a. Performance Goals Based on the CTR/NTR Criteria.

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
OBJECTIVES FOR THE PROTECTION OF AQUATIC LIFE				
Antimony, Total Recoverable	µg/L	4.30E+03	8.63E+03	--
	lbs/day[2]	2.87E+01	5.76E+01	--
	lbs/day[3]	8.97E+01	1.80E+02	--
Arsenic, Total Recoverable	µg/L	2.95E+01	5.91E+01	--
	lbs/day[2]	1.97E-01	3.95E-01	--
	lbs/day[3]	6.15E-01	1.23E+00	--
Cadmium, Total Recoverable	µg/L	7.66E+00	1.54E+01	--
	lbs/day[2]	5.11E-02	1.03E-01	--
	lbs/day[3]	1.60E-01	3.20E-01	--
Chromium III, Total Recoverable[3]	µg/L	5.27E+02	1.06E+03	--
	lbs/day[2]	3.52E+00	7.06E+00	--
	lbs/day[3]	1.10E+01	2.21E+01	--
Chromium VI, Total Recoverable	µg/L	4.12E+01	8.27E+01	--
	lbs/day[2]	2.75E-01	5.52E-01	--
	lbs/day[3]	8.60E-01	1.72E+00	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
Cyanide, Total Recoverable [4]	µg/L	4.98E-01	1.00E+00	--
	lbs/day[2]	3.33E-03	6.67E-03	--
	lbs/day[3]	1.04E-02	2.09E-02	--
Lead, Total Recoverable	µg/L	6.97E+00	1.40E+01	--
	lbs/day[2]	4.65E-02	9.33E-02	--
	lbs/day[3]	1.45E-01	2.92E-01	--
Mercury, Total Recoverable	µg/L	5.10E-02	1.02E-01	--
	lbs/day[2]	3.40E-04	6.83E-04	--
	lbs/day[3]	1.06E-03	2.13E-03	--
Silver, Total Recoverable	µg/L	1.11E+00	2.24E+00	--
	lbs/day[2]	7.43E-03	1.49E-02	--
	lbs/day[3]	2.32E-02	4.66E-02	--
Zinc, Total Recoverable	µg/L	4.74E+01	9.51E+01	--
	lbs/day[2]	3.16E-01	6.35E-01	--
	lbs/day[3]	9.89E-01	1.98E+00	--
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH				
2,3,7,8 TCDD	µg/L	1.40E-08	2.81E-08	--
	lbs/day[2]	9.34E-11	1.87E-10	--
	lbs/day[3]	2.92E-10	5.86E-10	--
TCDD Equivalents[5]	µg/L	1.40E-08	2.81E-08	--
	lbs/day[2]	9.34E-11	1.87E-10	--
	lbs/day[3]	2.92E-10	5.86E-10	--
Acrolein	µg/L	7.80E+02	1.56E+03	--
	lbs/day[2]	5.20E+00	1.04E+01	--
	lbs/day[3]	1.63E+01	3.26E+01	--
Acrylonitrile	µg/L	6.60E-01	1.32E+00	--
	lbs/day[2]	4.40E-03	8.83E-03	--
	lbs/day[3]	1.38E-02	2.76E-02	--
Benzene	µg/L	7.10E+01	1.42E+02	--
	lbs/day[2]	4.74E-01	9.50E-01	--
	lbs/day[3]	1.48E+00	2.97E+00	--
Bromoform	µg/L	3.60E+02	7.22E+02	--
	lbs/day[2]	2.40E+00	4.82E+00	--
	lbs/day[3]	7.51E+00	1.51E+01	--
Carbon Tetrachloride	µg/L	4.40E+00	8.83E+00	--
	lbs/day[2]	2.94E-02	5.89E-02	--
	lbs/day[3]	9.17E-02	1.84E-01	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
Chlorobenzene	µg/L	2.10E+04	4.21E+04	--
	lbs/day[2]	1.40E+02	2.81E+02	--
	lbs/day[3]	4.38E+02	8.78E+02	--
Chlorodibromomethane	µg/L	3.40E+01	6.82E+01	--
	lbs/day[2]	2.27E-01	4.55E-01	--
	lbs/day[3]	7.09E-01	1.42E+00	--
Dichlorobromomethane	µg/L	4.60E+01	9.23E+01	--
	lbs/day[2]	3.07E-01	6.16E-01	--
	lbs/day[3]	9.59E-01	1.92E+00	--
1,2-Dichloroethane	µg/L	9.90E+01	1.99E+02	--
	lbs/day[2]	6.61E-01	1.33E+00	--
	lbs/day[3]	2.06E+00	4.14E+00	--
1,1-Dichloroethylene	µg/L	3.20E+00	6.42E+00	--
	lbs/day[2]	2.14E-02	4.28E-02	--
	lbs/day[3]	6.67E-02	1.34E-01	--
1,2-Dichloropropane	µg/L	3.90E+01	7.82E+01	--
	lbs/day[2]	2.60E-01	5.22E-01	--
	lbs/day[3]	8.13E-01	1.63E+00	--
1,3-Dichloropropylene	µg/L	1.70E+03	3.41E+03	--
	lbs/day[2]	1.13E+01	2.28E+01	--
	lbs/day[3]	3.54E+01	7.11E+01	--
Ethylbenzene	µg/L	2.90E+04	5.82E+04	--
	lbs/day[2]	1.93E+02	3.88E+02	--
	lbs/day[3]	6.05E+02	1.21E+03	--
Methyl Bromide	µg/L	4.00E+03	8.02E+03	--
	lbs/day[2]	2.67E+01	5.35E+01	--
	lbs/day[3]	8.34E+01	1.67E+02	--
Methylene Chloride	µg/L	1.60E+03	3.21E+03	--
	lbs/day[2]	1.07E+01	2.14E+01	--
	lbs/day[3]	3.34E+01	6.69E+01	--
1,1,2,2-Tetrachloroethane	µg/L	1.10E+01	2.21E+01	--
	lbs/day[2]	7.34E-02	1.47E-01	--
	lbs/day[3]	2.29E-01	4.60E-01	--
Tetrachloroethylene	µg/L	8.85E+00	1.78E+01	--
	lbs/day[2]	5.90E-02	1.18E-01	--
	lbs/day[3]	1.85E-01	3.70E-01	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
Toluene	µg/L	2.00E+05	4.01E+05	--
	lbs/day[2]	1.33E+03	2.68E+03	--
	lbs/day[3]	4.17E+03	8.37E+03	--
1,2-Trans-Dichloroethylene	µg/L	1.40E+05	2.81E+05	--
	lbs/day[2]	9.34E+02	1.87E+03	--
	lbs/day[3]	2.92E+03	5.86E+03	--
1,1,2-Trichloroethane	µg/L	4.20E+01	8.43E+01	--
	lbs/day[2]	2.80E-01	5.62E-01	--
	lbs/day[3]	8.76E-01	1.76E+00	--
Trichloroethylene	µg/L	8.10E+01	1.63E+02	--
	lbs/day[2]	5.40E-01	1.08E+00	--
	lbs/day[3]	1.69E+00	3.39E+00	--
Vinyl Chloride	µg/L	5.25E+02	1.05E+03	--
	lbs/day[2]	3.50E+00	7.03E+00	--
	lbs/day[3]	1.09E+01	2.20E+01	--
2-Chlorophenol	µg/L	4.00E+02	8.02E+02	--
	lbs/day[2]	2.67E+00	5.35E+00	--
	lbs/day[3]	8.34E+00	1.67E+01	--
2,4-Dichlorophenol	µg/L	7.90E+02	1.58E+03	--
	lbs/day[2]	5.27E+00	1.06E+01	--
	lbs/day[3]	1.65E+01	3.30E+01	--
2,4-Dimethylphenol	µg/L	2.30E+03	4.61E+03	--
	lbs/day[2]	1.53E+01	3.08E+01	--
	lbs/day[3]	4.80E+01	9.62E+01	--
4,6-dinitro-o-cresol (aka2-methyl-4,6-Dinitrophenol)	µg/L	7.65E+02	1.53E+03	--
	lbs/day[2]	5.10E+00	1.02E+01	--
	lbs/day[3]	1.60E+01	3.20E+01	--
2,4-Dinitrophenol	µg/L	1.40E+04	2.81E+04	--
	lbs/day[2]	9.34E+01	1.87E+02	--
	lbs/day[3]	2.92E+02	5.86E+02	--
Pentachlorophenol	µg/L	6.47E+00	1.30E+01	--
	lbs/day[2]	4.32E-02	8.66E-02	--
	lbs/day[3]	1.35E-01	2.71E-01	--
Phenol	µg/L	4.60E+06	9.23E+06	--
	lbs/day[2]	3.07E+04	6.16E+04	--
	lbs/day[3]	9.59E+04	1.92E+05	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
2,4,6-Trichlorophenol	µg/L	6.50E+00	1.30E+01	--
	lbs/day[2]	4.34E-02	8.70E-02	--
	lbs/day[3]	1.36E-01	2.72E-01	--
Acenaphthene	µg/L	2.70E+03	5.42E+03	--
	lbs/day[2]	1.80E+01	3.61E+01	--
	lbs/day[3]	5.63E+01	1.13E+02	--
Anthracene	µg/L	1.10E+05	2.21E+05	--
	lbs/day[2]	7.34E+02	1.47E+03	--
	lbs/day[3]	2.29E+03	4.60E+03	--
Benzidine	µg/L	5.40E-04	1.08E-03	--
	lbs/day[2]	3.60E-06	7.23E-06	--
	lbs/day[3]	1.13E-05	2.26E-05	--
Benzo(a)Anthracene	µg/L	4.90E-02	9.83E-02	--
	lbs/day[2]	3.27E-04	6.56E-04	--
	lbs/day[3]	1.02E-03	2.05E-03	--
Benzo(a)Pyrene	µg/L	4.90E-02	9.83E-02	--
	lbs/day[2]	3.27E-04	6.56E-04	--
	lbs/day[3]	1.02E-03	2.05E-03	--
Benzo(b)Fluoranthene	µg/L	4.90E-02	9.83E-02	--
	lbs/day[2]	3.27E-04	6.56E-04	--
	lbs/day[3]	1.02E-03	2.05E-03	--
Benzo(k)Fluoranthene	µg/L	4.90E-02	9.83E-02	--
	lbs/day[2]	3.27E-04	6.56E-04	--
	lbs/day[3]	1.02E-03	2.05E-03	--
Bis(2-Chloroethyl)Ether	µg/L	1.40E+00	2.81E+00	--
	lbs/day[2]	9.34E-03	1.87E-02	--
	lbs/day[3]	2.92E-02	5.86E-02	--
Bis(2-Chloroisopropyl)Ether	µg/L	1.70E+05	3.41E+05	--
	lbs/day[2]	1.13E+03	2.28E+03	--
	lbs/day[3]	3.54E+03	7.11E+03	--
Bis(2-Ethylhexyl)Phthalate	µg/L	5.90E+00	1.18E+01	--
	lbs/day[2]	3.94E-02	7.90E-02	--
	lbs/day[3]	1.23E-01	2.47E-01	--
Butylbenzyl Phthalate	µg/L	5.20E+03	1.04E+04	--
	lbs/day[2]	3.47E+01	6.96E+01	--
	lbs/day[3]	1.08E+02	2.18E+02	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
2-Chloronaphthalene	µg/L	4.30E+03	8.63E+03	--
	lbs/day[2]	2.87E+01	5.76E+01	--
	lbs/day[3]	8.97E+01	1.80E+02	--
Chrysene	µg/L	4.90E-02	9.83E-02	--
	lbs/day[2]	3.27E-04	6.56E-04	--
	lbs/day[3]	1.02E-03	2.05E-03	--
Dibenzo(a,h)Anthracene	µg/L	4.90E-02	9.83E-02	--
	lbs/day[2]	3.27E-04	6.56E-04	--
	lbs/day[3]	1.02E-03	2.05E-03	--
1,2-Dichlorobenzene	µg/L	1.70E+04	3.41E+04	--
	lbs/day[2]	1.13E+02	2.28E+02	--
	lbs/day[3]	3.54E+02	7.11E+02	--
1,3-Dichlorobenzene	µg/L	2.60E+03	5.22E+03	--
	lbs/day[2]	1.73E+01	3.48E+01	--
	lbs/day[3]	5.42E+01	1.09E+02	--
1,4-Dichlorobenzene	µg/L	2.60E+03	5.22E+03	--
	lbs/day[2]	1.73E+01	3.48E+01	--
	lbs/day[3]	5.42E+01	1.09E+02	--
3,3 Dichlorobenzidine	µg/L	7.70E-02	1.54E-01	--
	lbs/day[2]	5.14E-04	1.03E-03	--
	lbs/day[3]	1.61E-03	3.22E-03	--
Diethyl Phthalate	µg/L	1.20E+05	2.41E+05	--
	lbs/day[2]	8.01E+02	1.61E+03	--
	lbs/day[3]	2.50E+03	5.02E+03	--
Dimethyl Phthalate	µg/L	2.90E+06	5.82E+06	--
	lbs/day[2]	1.93E+04	3.88E+04	--
	lbs/day[3]	6.05E+04	1.21E+05	--
Di-n-Butyl Phthalate	µg/L	1.20E+04	2.41E+04	--
	lbs/day[2]	8.01E+01	1.61E+02	--
	lbs/day[3]	2.50E+02	5.02E+02	--
2,4-Dinitrotoluene	µg/L	9.10E+00	1.83E+01	--
	lbs/day[2]	6.07E-02	1.22E-01	--
	lbs/day[3]	1.90E-01	3.81E-01	--
1,2-Diphenylhydrazine	µg/L	5.40E-01	1.08E+00	--
	lbs/day[2]	3.60E-03	7.23E-03	--
	lbs/day[3]	1.13E-02	2.26E-02	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
Fluoranthene	µg/L	3.70E+02	7.42E+02	--
	lbs/day[2]	2.47E+00	4.95E+00	--
	lbs/day[3]	7.71E+00	1.55E+01	--
Fluorene	µg/L	1.40E+04	2.81E+04	--
	lbs/day[2]	9.34E+01	1.87E+02	--
	lbs/day[3]	2.92E+02	5.86E+02	--
Hexachlorobenzene	µg/L	7.70E-04	1.54E-03	--
	lbs/day[2]	5.14E-06	1.03E-05	--
	lbs/day[3]	1.61E-05	3.22E-05	--
Hexachlorobutadiene	µg/L	5.00E+01	1.00E+02	--
	lbs/day[2]	3.34E-01	6.69E-01	--
	lbs/day[3]	1.04E+00	2.09E+00	--
Hexachlorocyclopenta-diene	µg/L	1.70E+04	3.41E+04	--
	lbs/day[2]	1.13E+02	2.28E+02	--
	lbs/day[3]	3.54E+02	7.11E+02	--
Hexachloroethane	µg/L	8.90E+00	1.79E+01	--
	lbs/day[2]	5.94E-02	1.19E-01	--
	lbs/day[3]	1.86E-01	3.72E-01	--
Indeno(1,2,3-cd)Pyrene	µg/L	4.90E-02	9.83E-02	--
	lbs/day[2]	3.27E-04	6.56E-04	--
	lbs/day[3]	1.02E-03	2.05E-03	--
Isophorone	µg/L	6.00E+02	1.20E+03	--
	lbs/day[2]	4.00E+00	8.03E+00	--
	lbs/day[3]	1.25E+01	2.51E+01	--
Nitrobenzene	µg/L	1.90E+03	3.81E+03	--
	lbs/day[2]	1.27E+01	2.54E+01	--
	lbs/day[3]	3.96E+01	7.95E+01	--
N-Nitrosodimethylamine	µg/L	8.10E+00	1.63E+01	--
	lbs/day[2]	5.40E-02	1.08E-01	--
	lbs/day[3]	1.69E-01	3.39E-01	--
N-Nitrosodi-n-Propylamine	µg/L	1.40E+00	2.81E+00	--
	lbs/day[2]	9.34E-03	1.87E-02	--
	lbs/day[3]	2.92E-02	5.86E-02	--
N-Nitrosodiphenylamine	µg/L	1.60E+01	3.21E+01	--
	lbs/day[2]	1.07E-01	2.14E-01	--
	lbs/day[3]	3.34E-01	6.69E-01	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
Pyrene	µg/L	1.10E+04	2.21E+04	--
	lbs/day[2]	7.34E+01	1.47E+02	--
	lbs/day[3]	2.29E+02	4.60E+02	--
Aldrin	µg/L	1.40E-04	2.81E-04	--
	lbs/day[2]	9.34E-07	1.87E-06	--
	lbs/day[3]	2.92E-06	5.86E-06	--
alpha-BHC	µg/L	1.30E-02	2.61E-02	--
	lbs/day[2]	8.67E-05	1.74E-04	--
	lbs/day[3]	2.71E-04	5.44E-04	--
beta-BHC	µg/L	4.60E-02	9.23E-02	--
	lbs/day[2]	3.07E-04	6.16E-04	--
	lbs/day[3]	9.59E-04	1.92E-03	--
gamma-BHC	µg/L	6.30E-02	1.26E-01	--
	lbs/day[2]	4.20E-04	8.43E-04	--
	lbs/day[3]	1.31E-03	2.64E-03	--
Chlordane	µg/L	5.90E-04	1.18E-03	--
	lbs/day[2]	3.94E-06	7.90E-06	--
	lbs/day[3]	1.23E-05	2.47E-05	--
4,4'-DDT	µg/L	5.90E-04	1.18E-03	--
	lbs/day[2]	3.94E-06	7.90E-06	--
	lbs/day[3]	1.23E-05	2.47E-05	--
4,4'-DDE	µg/L	5.90E-04	1.18E-03	--
	lbs/day[2]	3.94E-06	7.90E-06	--
	lbs/day[3]	1.23E-05	2.47E-05	--
4,4'-DDD	µg/L	8.40E-04	1.69E-03	--
	lbs/day	5.60E-06	1.12E-05	--
	lbs/day[3]	1.75E-05	3.51E-05	--
Dieldrin	µg/L	1.40E-04	2.81E-04	--
	lbs/day[2]	9.34E-07	1.87E-06	--
	lbs/day[3]	2.92E-06	5.86E-06	--
alpha-Endosulfan	µg/L	2.40E+02	4.81E+02	--
	lbs/day[2]	1.60E+00	3.21E+00	--
	lbs/day[3]	5.00E+00	1.00E+01	--
beta-Endolsulfan	µg/L	2.40E+02	4.81E+02	--
	lbs/day[2]	1.60E+00	3.21E+00	--
	lbs/day[3]	5.00E+00	1.00E+01	--

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum
Endosulfan Sulfate	µg/L	2.40E+02	4.81E+02	--
	lbs/day[2]	1.60E+00	3.21E+00	--
	lbs/day[3]	5.00E+00	1.00E+01	--
Endrin	µg/L	8.10E-01	1.63E+00	--
	lbs/day[2]	5.40E-03	1.08E-02	--
	lbs/day[3]	1.69E-02	3.39E-02	--
Endrin Aldehyde	µg/L	8.10E-01	1.63E+00	--
	lbs/day[2]	5.40E-03	1.08E-02	--
	lbs/day[3]	1.69E-02	3.39E-02	--
Heptachlor	µg/L	2.10E-04	4.21E-04	--
	lbs/day[2]	1.40E-06	2.81E-06	--
	lbs/day[3]	4.38E-06	8.78E-06	--
Heptachlor Epoxide	µg/L	1.10E-04	2.21E-04	--
	lbs/day[2]	7.34E-07	1.47E-06	--
	lbs/day[3]	2.29E-06	4.60E-06	--
PCBs sum[6]	µg/L	1.70E-04	3.41E-04	--
	lbs/day[2]	1.13E-06	2.28E-06	--
	lbs/day[3]	3.54E-06	7.11E-06	--
Toxaphene	µg/L	7.50E-04	1.50E-03	--
	lbs/day[2]	5.00E-06	1.00E-05	--
	lbs/day[3]	1.56E-05	3.14E-05	--

[1] Scientific "E" notation is used to express certain values. In scientific "E" notation, the number following the "E" indicates that position of the decimal point in the value. Negative numbers after the "E" indicate that the value is less than 1, and positive numbers after the "E" indicate that the value is greater than 1. In this notation a value of 6.1E-02 represents 6.1×10^{-2} or 0.061, 6.1E+02 represents 6.1×10^{2} or 610, and 6.1E+00 represents 6.1×10^{0} or 6.1.

[2] Based on a flow of 0.8 MGD at Discharge Point No. 001a.

[3] Based on a flow of 2.5 MGD at Discharge Point No. 001b.

[4] If a Discharger can demonstrate to the satisfaction of the Regional Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by (or performance goals may be evaluated with) the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometalic cyanide complexes. In Order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR Part 136, as revised May 14, 1999.

[5] TCDD equivalents represent the sum of concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown by the table below. USEPA Method 8280 may be used to analyze TCDD equivalents.

Isomer Group	Toxicity Equivalence Factor
2,3,7,8 – tetra CDD	1.0
2,3,7,8 – penta CDD	0.5
2,3,7,8 – hexa CDD	0.1
2,3,7,8 – hepta CDD	0.01
octa CDD	0.001
2,3,7,8 – tetra CDF	0.1
1,2,3,7,8 – penta CDF	0.05
2,3,4,7,8 – penta CDF	0.5
2,3,7,8 – hexa CDFs	0.1
2,3,7,8 – hepta CDFs	0.01
Octa CDF	0.001

[6] PCBs (polychlorinated biphenyls) represent the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Arolclor-1254, and Arcolor-1260.

Table F-16b. Performance Goals For Whole Effluent Toxicity

Parameter	Performance Goals[1]			
	Unit	Average Monthly	Daily Maximum	Instantaneous Maximum[2]
Acute Toxicity	Pass/Fail	[1]		
Chronic Toxicity	TUc	[2]	--	1.6

1. Discharges shall achieve a rating of "Pass" for acute toxicity with compliance determined as specified in Section VII.J of this Order.
2. One or more test results with a calculated median value of 1.0 TUc

F. Land Discharge Specifications—Not Applicable

G. Reclamation Specifications—Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

Surface water limitations in section V.A.1.a through V.A.2.e are based on Basin Plan Objectives and are carried over from Order No. R9-2004-0111. The surface water limitation for dissolved oxygen in section V.A.2.a has been modified from Order No. R9-2004-0111 to reflect current wording in the Basin Plan, as applicable to the marine habitat beneficial use at Discharge Point Nos. 001a and 001b and 002. The surface water limitations in section V.A.2.c and d for biostimulatory substances and un-ionized ammonia, respectively, have been reworded to include the Lower Sweetwater River as well as the Tidal Prism to the San Diego Bay. This Order includes surface water limitations for temperature in the Tidal Prism of the San Diego Bay, based on the Thermal Plan (V.A.5). The brine discharge is considered an elevated temperature waste and as such must comply with conditions outlined in the Thermal Plan.

B. Groundwater—Not Applicable

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

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

A. Influent Monitoring—Not Applicable

B. Effluent Monitoring

Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to insure the discharge is not the cause of unreasonable impacts on the receiving stream and groundwater.

Monitoring results for copper and selenium in the brine at Discharge Point No. 001a exceeded CTR/NTR water quality criteria as described in section IV.C.3. In order to more carefully characterize effluent conditions and the potential to impair beneficial uses, this Order increases the monitoring frequency from quarterly to monthly for copper and selenium at Discharge Point Nos. 001a and 001b

This Order includes new effluent limitations at Discharge Point Nos. 001a and 001b for nickel and nitrogen (See discussions in section IV.C.3.). In association with these new limitations, monthly monitoring requirements have been established. Order No. R9-2004-0111 contained monthly monitoring requirements for total phosphorus at Discharge Point No. 001a. This Order retains the requirement for determining compliance with the new total phosphorus effluent limitation at Discharge Point Nos. 001a and 001b.

As discussed in section IV.C.3, effluent concentrations of brine at Discharge Point No. 001a and 001b (EFF-001a and EFF-001b) may exhibit un-ionized ammonia at concentrations greater than the Basin Plan Objective. Previous monitoring was reported as total ammonia as N. In order to allow comparison to the Basin Plan Objective, this Order includes quarterly effluent monitoring of un-ionized ammonia at Discharge Point Nos. 001a and 001b, with results reported as un-ionized ammonia as N.

As discussed in section IV.C.3, analyses of well purge and feed water discharges of ammonia, nitrogen, and phosphorus indicated that these constituents may be present in concentrations greater than the numeric Basin Plan Objectives. Because of the short duration and intermittent nature of the discharges it is unclear if they will result in exceedances of Basin Plan Objectives. As a result effluent monitoring requirements for these constituents are included in this Order for well purge and feedwater discharges at Discharge Point No. EFF-002 and

well purges from Discharge Point Nos. 003, 004, 005, 006, 007, 008, 009, and 010.

The discharge is considered an elevated temperature waste and as such is subject to the Thermal Plan. Effluent monitoring requirements for temperature at Discharge Point Nos. 001a and 001b are included in this Order to assess compliance with the Thermal Plan.

The SIP section 1.3 specifies that Regional Water Board shall require periodic monitoring for pollutants for which criteria or objectives apply and for which no effluent limitations have been established. As such, priority pollutant and TCDD monitoring requirements are included in this Order for Discharge Point Nos. 001a and 001b. As allowed in the SIP section 1.3, the Regional Water Board may exempt low volumes determined to have no significant adverse impact on water quality. For this reason, no priority pollutant or TCDD monitoring is being required for Discharge Point Nos. 002, 003, 004, 005. 006, 007, 008, 009, or 010.

The MRP contained in Order No. R9-2004-0111 included quarterly monitoring for total arsenic and total zinc in the brine and well purge discharges at Discharge Point No. 001a and 002. During this term, the maximum total arsenic concentrations from both waste streams was 18 mg/L, below the most stringent criterion (saltwater, chronic) of 36 mg/L/ Similarly, the maximum total zinc concentration was 12.1, well below the most stringent (saltwater, chronic) criterion of 85 mg/L. Monitoring from Discharge Point Nos. 003 through 005 had similar results, with maximum dissolved arsenic and zinc concentrations of 5.3 and 30 compared to the most stringent dissolved criteria of 150 (freshwater, chronic) and 380 (freshwater, acute and chronic). The results indicate that the constituents are not likely to exhibit “reasonable potential”, therefore, the monitoring frequency is reduced to once per permit term as part of the priority pollutant analysis.

C. Whole Effluent Toxicity Testing Requirements

Whole effluent toxicity testing (acute and chronic) have been established to determine compliance with the narrative prohibition of toxicity (III.L).

D. Receiving Water Monitoring

1. Surface Water

The MRP specifies conditions for monitoring to address compliance with receiving water limitations specified in section V.A of this Order, to distinguish the facility’s potential contributions of pollutants to receiving waters, and to determine if the water quality objectives contained in the Basin Plan are being achieved in the receiving water.

Sweetwater Authority developed and implemented a Mitigation and Monitoring Program, (MMP) as part of an Environmental Impact Report (EIR)

prepared on May 16, 1997 and revised through July 18, 1998 and submitted to the Bureau of Reclamation, the lead agency. The MMP involved monitoring of various locations in the Lower Sweetwater River for environmental factors including vegetation and water quality constituents. Order No. R9-2004-0111 contained requirements to implement, and report to the Regional Water Board, the results of monitoring outlined in *Section 3 (Downstream Monitoring)* and *Section 5 (Summary of Monitoring Program in Demineralization Facility Production Adjustment* of the *Lower Sweetwater River Basin Groundwater Demineralization Project).* Specifically, Order No. R9-2004-0111 incorporated by reference the water quality portion of the MMP which included monitoring the Lower Sweetwater River (Tidal Prism of San Diego Bay) for Total dissolved solids (TDS), total kjeldahl nitrogen (TKN), nitrate, chlorophyll A, total phosphorus, and orthophosphorus. The plan required monitoring for a 3 year period after which the agencies involved would determine additional monitoring or revisions to the plan. In December of 2004, the receiving water monitoring stemming from the MMP was completed.

This Order includes new receiving water monitoring requirements at RSW-001 and RSW-002 for constituents that mirror the monitoring requirements of Discharge Point Nos. 001a and 001b. These monitoring requirements are necessary to characterize receiving water capacity for pollutants, identify potential contributions of pollutants from the Discharger, as well as determine whether Basin Plan Objectives are being met. Receiving water monitoring locations RSW-001 and RSW-002 correspond to the water quality sampling locations described in the September 2006 Discharge Monitoring Program Annual Report. In addition, a monitoring requirement for temperature at RSW-001 is included to assess compliance with the thermal plan.

2. Groundwater—Not Applicable

E. Rationale for Provisions

F. Standard Provisions

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

Section 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with section 123.25, this Order omits federal

conditions that address enforcement authority specified in sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

G. Special Provisions

1. Reopener Provisions

Order No. R9-2010-0012 may be re-opened and modified, revoked, and reissued or terminated in accordance with the provisions of 40 CFR Parts 122, 123, 124, and 125. The Regional Water Board may reopen the permit to modify permit conditions and requirements. Causes for modifications include the promulgation of new regulations, modification in sludge use or disposal practices, or adoption of new regulations by the State Water Board or Regional Water Board, including revisions to the Basin Plan.

2. Special Studies and Additional Monitoring Requirements

a. Toxicity Reduction Requirements

The Basin Plan contains a narrative toxicity objective that states “All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.” (Basin Plan at page 3-29). This provision requires the Discharger to develop and Initial Investigative TRE Workplan in accordance with USEPA guidance which shall include steps the Discharger intends to follow if toxicity is measured above the performance goal for acute toxicity. This provision also includes requirements to initiate the TRE/TIE process if the results of the acute toxicity testing exceed the performance goal for toxicity.

b. Benthic Invertebrate Monitoring Plan

The proposed increase to 2.5 MGD may result in increased loadings of pollutants including nutrients and metals. In order to monitor potential impacts to the benthic communities, this Order requires the Discharger to develop a plan to monitor benthic invertebrates within the receiving water (VI.C.2.c). Within the plan the Discharger shall establish locations upstream of the influence of the discharge and downstream of the discharge. Monitoring shall be conducted according to methodology in Evaluation of *Benthic Assessment Methodology in Southern California Bays and San Francisco Bay (SCCWRP, 2004).*

c. Macroalgae Monitoring Plan

The proposed increase in discharge may contribute additional nitrogen and phosphorus to the receiving water, which could result in algal blooms, which in turn may smother benthic communities and create eutrophic conditions. In order to assess these potential effects, this Order requires the Discharger to develop a plan to monitor macroalgae within the receiving water (VI.C.2.d). The plan shall include sampling for macroalgae at representative sites upstream and downstream of the discharge. Samples shall be analyzed for mass of organic material and results shall be reported as ash free dry weight and percent organic matter. The plan shall also include macroalgae measurements using photographic quadrats.

d. Wetland Vegetation Monitoring Plan

The proposed increase may contribute pollutants including nutrients and metals as well as areas of lower salinity within the receiving water. In order to assess the potential effects, this Order requires the Discharger to develop a plan to conduct wetland vegetation monitoring (VI.C.2.e). Within the plan, the Discharger shall establish a representative downstream location whereby the Discharger shall conduct field observations and transect analysis to identify wetland vegetation species. Results of wetland vegetation monitoring shall be reported in the annual report.

e. Temperature Compliance Determination Study.

Based on requirements of the Thermal Plan, receiving water temperature limitations have been included in this Order, as discussed in this Fact Sheet section V.A. The receiving water limitations in V.A.5.a of this Order, specify that

i. *"The maximum temperature of waste discharges shall not exceed the natural temperature of the receiving waters by more than 20°F."*

Insufficient data is available to determine whether the Discharger is able to meet theses limitations. Therefore, the Discharger is required to develop a plan to demonstrate compliance with this Thermal Plan Objective at the locations of Discharge Point Nos. 001a and 001b, as stipulated in VI.C.2.f of this Order.

3. Best Management Practices and Pollution Prevention

CWC section 13263.3(d)(2) Pollution Prevention Plans. Section 13263.3 of the California Water Code states that pollution prevention should be the first step in the hierarchy for reducing pollution and managing wastes. Further, section 13263.3 (d)(1) states that a Regional Water Board may

require a discharger to complete and implement a pollution prevention plan is necessary to achieve a water quality objective. The results of a reasonable potential analysis and other evaluations of effluent data detailed in section IV.C.3 of this Fact Sheet indicate the discharger has potential to contribute to exceedances of water quality objectives. In section VI.C.3 of this Order, the Discharger is required to develop and implement a Pollution Prevention Plan for copper, nickel, selenium, total nitrogen, and total phosphorus in brine discharges at Discharge Point No. 001a and 001b, and for copper in well purge water and plant feed dump water at Discharge Point No. 002, which at a minimum meets the requirements outlined in CWC section 13263.3(d)(2).

The minimum requirements for the pollution prevention plans include the following:

a. An analysis of one or more of the pollutants, as directed by the state board, a regional board, or a POTW, that the facility discharges into water or introduces into POTWs, a description of the sources of the pollutants, and a comprehensive review of the processes used by the discharger that result in the generation and discharge of the pollutants.

b. An analysis of the potential for pollution prevention to reduce the generation of the pollutants, including the application of innovative and alternative technologies and any adverse environmental impacts resulting from the use of those methods.

c. A detailed description of the tasks and time schedules required to investigate and implement various elements of pollution prevention techniques.

d. A statement of the discharger's pollution prevention goals and strategies, including priorities for short-term and long-term action.

e. A description of the discharger's existing pollution prevention methods.

f. A statement that the discharger's existing and planned pollution prevention strategies do not constitute cross media pollution transfers unless clear environmental benefits of such an approach are identified to the satisfaction of the state board, the regional board, or the POTW, and information that supports that statement.

g. Proof of compliance with the Hazardous Waste Source Reduction and Management Review Act of 1989 {Article 11. 9 (commencing with Section 25244.12) of Chapter 6.5 of Division 20 of the Health and Safety Code) if the discharger is also subject to that act.

h. An analysis, to the extent feasible, of the relative costs and benefits of the possible pollution prevention activities.

i. A specification of, and rationale for, the technically feasible and economically practicable pollution prevention measures selected by the discharger for implementation.

The Discharger shall prepare and implement the pollution prevention plan in the event of a serious violation or if an effluent limitation is exceeded four or more times during a period of six consecutive months (in accordance with Section 13385 of the California Water Code).

4. Construction, Operation, and Maintenance Specifications—Not Applicable

5. Other Special Provisions

Receiving Water Monitoring Locations for Relocated Discharge.

The receiving water monitoring locations that are established for the existing discharge location will not be adequate to provide information on water quality if the discharge is relocated downstream. In response to the proposed relocation of brine discharge to Discharge Point No. 001b, the Discharger must establish new receiving water monitoring locations, designated RSW-001b and RSW-002b to reflect the instream conditions of the relocated discharge. The Discharger shall determine an appropriate monitoring location upstream of the influence of the discharge from Discharge Point No. 001b and a downstream monitoring location no further than 50 meters downstream of the discharge. The Discharger shall provide the proposed monitoring locations to the Regional Water Board for approval prior to discharge through Discharger Point No. 001b.

6. Compliance Schedules

Recent data submitted by the Discharger demonstrates the discharge of demineralization brine at the existing location (001a) has toxic effects in the receiving water. In Order to reduce these impacts to less than significant levels, the discharger proposes to relocate the discharge point approximately 2,200 ft downstream of the existing location (001b).

The Discharger has requested a compliance schedule and has demonstrated to the Regional Board, that more time is needed to implement actions necessary to comply with a more stringent permit limitation specified to implement a newly interpreted water quality objective. The proposed compliance schedule is as short as possible and provides the Discharger a reasonable amount of time to relocate the discharge point.

The Discharger shall comply with the following time schedule to ensure compliance with the toxicity effluent limitation of this Order:

Task	Compliance Date
Complete Engineering Analysis	Complete
Complete Engineering Design	March 2012
Complete the permitting process necessary to construct	May 12, 2010
Complete financial arrangements for construction	January 2012
Issue Request for Proposals for construction	March 2012
Begin construction	July 2010
Start up and initial testing	October 2013
Complete relocation of brine discharge to Discharge Point 001b	January 2014

The Discharger shall submit to the Regional Board on or before each compliance date, the specified document or, if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is being reported, the reasons for such noncompliance shall be stated, and shall include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule.

Progress reports shall be submitted annually according to the schedule in Table E-8 of this Order and shall continue until compliance is achieved.

VII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, San Diego Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Lower Sweetwater Authority Reynolds Demineralization 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 San Diego Union Tribune on February 1, 2010.

B. Written Comments

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

To be fully responded to by staff and considered by the Regional Water Board, written comments must be received at the Regional Water Board offices by 5:00 p.m. on April 7, 2010.

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 12, 2010**
Time:	**9:00 AM**
Location:	**Regional Water Quality Control Board** **Regional Board Room** **9174 Sky Park Court, Suite 100** **San Diego, CA 92123**

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/sandiego**> 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 (858) 467-2952.

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 Michelle Mata at (858) 467-2981 or via email at mmata@waterboards.ca.gov