CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

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

ORDER NO. R5-2011-XXXX
NPDES NO. CA0082708

WASTE DISCHARGE REQUIREMENTS FOR THE ROCKWELL AUTOMATION, INC. AND PORTERVILLE UNIFIED SCHOOL DISTRICT GROUNDWATER CLEANUP SYSTEM TULARE COUNTY

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

Table 1. Discharger Information

Discharger	Rockwell Automation, Inc. and Porterville Unified School District
Name of Facility	Groundwater Cleanup System
Facility Address	914 West Pioneer Avenue
	Porterville, CA 93257
	Tulare 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 Rockwell Automation, Inc. and Porterville Unified School District from the discharge point identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Treated Groundwater	36º 05' 41" N	119º 02' 23" W	Pioneer Ditch Pipeline

Table 3. Administrative Information

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

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

_____
PAMELA C. CREEDON, Executive Officer

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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	Rockwell Automation, Inc. and Porterville Unified School District
Name of Facility	Groundwater Cleanup System
Facility Address	914 West Pioneer Avenue
	Porterville, CA 93257
	Tulare County
Facility Contact, Title, and Phone	Troy M. Pfaff, Environmental Manager, (414) 382-5664
Mailing Address	1201 South Second Street Milwaukee, WI 53204
Type of Facility	Groundwater extraction and cleanup facility
Facility Design Flow	0.288 million gallons per day

II. FINDINGS

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

A. Background. Rockwell Automation, Inc. (Rockwell) and Porterville Unified School District (District) (hereinafter collectively referred to as Discharger) are currently discharging pursuant to Order No. R5-2005-0092 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0082708. The Discharger submitted a Report of Waste Discharge, dated 21 October 2009, and applied for a NPDES permit renewal to discharge up to 0.288 million gallons per day (mgd) of treated groundwater from the groundwater cleanup system (GWCS), hereinafter Facility.

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. Former manufacturing operations polluted groundwater underlying the Facility with volatile organic compounds (VOCs). The Discharger has investigated the extent of the pollution and operates a groundwater extraction and cleanup facility. The treatment system consists of two extraction wells, an air stripper system, and a granular activated carbon (GAC) polish system. Treated groundwater is discharged from Discharge Point 001 (see table on cover page) to the Pioneer Ditch Pipeline, which is hydraulically connected downstream of Discharge Point 001 to the Tule River (below Lake Success), a water of the United States, via Canal No. 4 within the South Valley Floor Hydrologic Unit, Tule Delta Hydrologic Area (No. 558.20). Attachment B provides a map of the area around the Facility. Attachment C provides a flow schematic of the Facility.

C. Legal Authorities. This Order is issued pursuant to section 402 of the Clean Water Act (CWA) and implementing regulations adopted by USEPA and chapter 5.5, division 7 of

the California Water Code (CWC; 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 CWC (commencing with section 13260).

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

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

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

G. **Water Quality-based Effluent Limitations (WQBELs).** Section 301(b) of the CWA and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

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

H. **Water Quality Control Plans.** The Central Valley Water Board adopted a *Water Quality Control Plan for the Tulare Lake Basin*, Second Edition, revised January 2004 (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those

objectives for all waters addressed through the plan. The Basin Plan does not specifically identify beneficial uses for Pioneer Ditch Pipeline. The Pioneer Ditch Pipeline is operated by the Lower Tule River Irrigation District and is used approximately 10 months a year to convey irrigation and recharge waters from Success Dam to agricultural lands along its eleven mile length. The Basin Plan identifies present and potential uses for Tule River (below Lake Success), to which Pioneer Ditch Pipeline, via Canal No. 4, is hydraulically connected. Discharges to Pioneer Ditch Pipeline must be protective of the beneficial uses of the Tule River below Lake Success. 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.

Groundwater underlying Pioneer Ditch Pipeline, Canal No. 4, and the Tule River is in Detailed Analysis Unit (DAU) No. 243 of the Tule Basin Hydrologic Unit. The beneficial uses of groundwater for this DAU are designated in the Basin Plan and listed in Table 5 of this Order.

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Pioneer Ditch Pipeline, Canal No. 4, Tule River	Municipal and domestic supply (MUN); agricultural supply, including irrigation and stock watering (AGR); industrial process supply (PRO); industrial service supply (IND); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); wildlife habitat (WILD); and ground water recharge (GWR).
--	Groundwater	MUN, IND, PRO, AGR, and WILD

Requirements of this Order specifically implement the Basin Plan.

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

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

The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

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

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

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

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

M. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on VOCs. The WQBELs consist of restrictions on 1,1-dichloroethylene, ammonia, pH, mercury, selenium, boron,

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

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

O. Anti-Backsliding Requirements. Sections 303(d)(4) and 402(o)(2) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions. Some effluent limitations in this Order are less stringent than those in Order No. R5-2005-0092. As discussed in detail in the Fact Sheet, this relaxation of effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

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

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

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

S. Provisions and Requirements Implementing State Law. The provisions/requirements in section V.B and portions of section VI.C.4 of this Order are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

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

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

THEREFORE, IT IS HEREBY ORDERED, that Order No. R5-2005-0092 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 CWC (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

A. Discharge of wastewater other than treated groundwater from the investigation and cleanup of VOCs as described in the Findings, or at a location or in a manner different from that described in the Findings is prohibited.

B. The by-pass or overflow of untreated or partially treated groundwater is prohibited, except as allowed by Federal Standard Provisions I.G. and I.H. (Attachment D).

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

D. Discharge of waste classified as 'hazardous' as defined is Section 2521(a) of Title 23, California Code of Regulations (CCR), et seq., or 'designated', as defined in Section 13173 of the CWC, is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

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

a. The effluent limitations specified in Table 6:

Table 6. Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	--	0.288	--	--
Carbon Tetrachloride	µg/L	--	<0.5	--	--
Chloroform	µg/L	--	<0.5	--	--
1,1-Dichloroethane	µg/L	--	<0.5	--	--
1,2-Dichloroethane	µg/L	--	<0.5	--	--
1,1-Dichloroethylene	µg/L	0.057[1]	0.11[1]	--	--
Methylene Chloride	µg/L	--	<0.5	--	--
Tetrachloroethylene	µg/L	--	<0.5	--	--
1,1,1-Trichloroethane	µg/L	--	<0.5	--	--
1,1,2-Trichloroethane	µg/L	--	<0.5	--	--
Trichloroethylene	µg/L	--	<0.5	--	--
Trichlorofluoromethane	µg/L	--	<0.5	--	--
Other VOC constituents[2]	µg/L	--	<0.5	--	--
Ammonia, un-ionized (as N)	mg/L	--	0.025	--	--
Mercury, Total Recoverable	µg/L	0.05	0.13	--	--
Selenium, Total Recoverable	µg/L	2.9	8.9	--	--
pH	standard units	--	--	6.5	8.3
Boron	mg/L	--	1.0	--	--
Chloride	mg/L	--	175	--	--
Electrical Conductivity @ 25 ºC	µmhos/cm	--	1000	--	--

[1] If approved Minimum Level (ML) is greater than the average monthly effluent limitation or maximum daily effluent limitation, then compliance is met if the concentration is below the ML.
[2] Other Volatile Organic Compounds listed in Table 2a of Appendix 4 of the SIP.

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

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

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

2. **Interim Effluent Limitations – Not Applicable**

B. Land Discharge Specifications – Not Applicable

C. Reclamation Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

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

1. **Un-ionized Ammonia.** Un-ionized ammonia to be present in amounts that adversely affect beneficial uses nor to be present in excess of 0.025 mg/L (as N).

2. **Bacteria.** The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 200 MPN/100 mL, nor more than 10 percent of the total number of fecal coliform samples taken during any 30-day period to exceed 400 MPN/100 mL.

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

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

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

6. **Dissolved Oxygen:**

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

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

   c. The dissolved oxygen concentration to be reduced below 5.0 mg/L at any time.

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

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

9. **pH.** The pH to be depressed below 6.5, raised above 8.3, nor changed by more than 0.3 units.

10. **Pesticides:**

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

    b. Pesticides to be present in bottom sediments or aquatic life in concentrations that adversely affect beneficial uses; nor

    c. Pesticides to be present in concentration in excess of the maximum contaminant levels specified in Table 64444-A (Organic Chemicals) of section 64444 of Title 22 of the CCR.

11. **Radioactivity:**

    a. Radionuclides to 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.

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

12. **Salinity.** Electrical conductivity @ 25 ºC during the irrigation season (March through 1 December) to exceed 450 µmhos/cm.

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

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

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

16. **Taste and Odors.** Taste- or odor-producing substances to be present in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, or to domestic or municipal water supplies.

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

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

19. **Turbidity.** The turbidity to increase as follows:

    a. More than 1 Nephelometric Turbidity Unit (NTU) where natural turbidity is between 0 and 5 NTUs;

    b. More than 20 percent where natural turbidity is between 5 and 50 NTUs;

    c. More than 10 NTU where natural turbidity is between 50 and 100 NTUs; nor

    d. More than 10 percent where natural turbidity is greater than 100 NTUs.

B. Groundwater Limitations

1. The discharge, in combination with other sources, shall not cause the groundwater underlying the Pioneer Ditch Pipeline or downstream surface waters to contain waste constituents in concentrations that adversely affect beneficial uses or that are greater than background water quality.

VI. PROVISIONS

A. Standard Provisions

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

2. The Discharger shall comply with the following provisions:

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

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

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

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

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

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

The causes for modification include:

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

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

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

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

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

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

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

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

ii. controls any pollutant limited in the Order.

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

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

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

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

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

i. Safeguard to electric power failure:

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

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

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

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

The technical report shall:

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

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

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

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

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

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

m. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, instantaneous minimum, instantaneous maximum, maximum daily effluent limitation, acute toxicity effluent limitation, or receiving water limitation contained in this Order, the Discharger shall notify the Central Valley Water Board by telephone (559) 445-5116 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within 5 days, unless the Central Valley Water Board waives confirmation. The written notification shall include the information required by the Standard Provision contained in Attachment D section V.E.1. [40 CFR 122.41(l)(6)(i)].

n. 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.

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

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

B. Monitoring and Reporting Program Requirements

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

C. Special Provisions

1. Reopener Provisions

a. This Order may be reopened to address conditions that necessitate a major modification of a permit, as described in 40 CFR 122.62, including:

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

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

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

requirements may be included in this Order as a result of the special condition monitoring data.

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

2. Special Studies, Technical Reports and Additional Monitoring Requirements

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

i. **TRE Work Plan. <Within 90 days of the effective date of this Order>**, the Discharger shall submit to the Central Valley Water Board a TRE Work Plan for approval by the Executive Officer. The TRE Work Plan shall outline the procedures for identifying the source(s) of, and reducing or eliminating effluent toxicity. The TRE Work Plan must be developed in accordance with USEPA guidance[1] and be of adequate detail to allow the Discharger to immediately initiate a TRE as required in this Provision.

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

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

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

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

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

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

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

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

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

(3) A schedule for these actions.

b. **Treatment and Disposal of Wastes.** The Discharger shall prepare and submit a work plan for the treatment and disposal of wastes generated by the periodic cleaning of the air-stripper trays. By **<120 Days of the effective date of this**

Order>, the Discharger shall submit the work plan to the Central Valley Water Board detailing the procedures the Discharger will follow to treat and dispose of these wastes.

3. Best Management Practices and Pollution Prevention – Not Applicable

4. Construction, Operation and Maintenance Specifications

a. The Discharger is currently operating under the Operation and Maintenance Plan (O&M Plan), dated September 2005 and approved by the Executive Officer. The O&M Plan outlines the day-to-day operation of the Facility, the air stripper tower maintenance conducted at the Facility including proper labels for valves and plumbing, the procedures for the Facility start-up and shutdown to prevent the discharge of untreated or partially treated groundwater, and sampling and analyses processes for monitoring. A copy of the O&M Plan shall be kept at the Facility for reference by operating personnel. The Discharger must maintain the Executive Officer approved O&M Plan and report any changes to the O&M Plan as specified in section VI.C.4.f of this Order. Any changes to the O&M Plan are subject to Executive Officer approval.

b. All purged well water shall be treated and disposed of by the methods described in the *Work Plan for Treatment of Purge Water*, dated August 2005 and approved by the Executive Officer. Any changes to the methods described in the work plan shall be reported to the Central Valley Water Board as specified in section VI.C.4.f of this Order and are subject to Executive Officer approval.

c. If the system has a shutdown that may result in discharge of untreated or partially treated wastewater, the Discharger shall increase effluent sampling frequency as described in the MRP. Samples shall be analyzed immediately upon startup and daily thereafter until continuous steady-state operation is achieved. The Discharger shall ensure that there is sufficient time between sample collections to avoid sample clustering. Untreated and partially treated wastewater shall be handled as described in the approved O&M Plan.

d. Spent carbon and other residual solids removed from liquid wastes or used to treat liquid wastes shall be recycled or disposed of in a manner that is consistent with Division 3, Title 27; Chapter 15, Division 3, Title 23; and Division 4.5, Title 22 of the CCR and approved by the Executive Officer.

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

f. The Discharger shall notify the Central Valley Water Board **within 48 hours** of any changes to the O&M Plan and the process of treating purged well water.

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

6. Other Special Provisions

a. This Order does not pre-empt or supersede the authority of local agencies to prohibit, restrict, or control the discharge of treated groundwater subject to their control. Discharges allowed by this Order to local irrigation or storm water collection and conveyance facilities must obtain approval from the agency responsible for operation and maintenance of the facilities.

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

A. Volatile Organic Compounds (VOCs) Maximum Daily Effluent Limitation and Average Monthly Effluent Limitation. VOCs include all VOCs listed in Table 2a of Appendix 4 of the SIP. The maximum daily effluent limitation of less than 0.5 µg/L applies to each VOC, except for 1,1-dichloroethylene. In the case where the lowest Minimum Level (ML) in the SIP for a particular VOC is not 0.5 µg/L, the discharge shall be considered compliant with the maximum daily effluent limitation if the constituent is not detected above the lowest ML in the SIP for that constituent. When determining compliance with an average monthly effluent limitation and more than one sample result is available in a month, the Discharger shall compute the arithmetic mean unless the data set contains one 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, 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.

B. Chronic Whole Effluent Toxicity Effluent Limitation. Compliance with the accelerated monitoring and TRE/TIE provisions of Provision VI.C.2.a shall constitute compliance with effluent limitation IV.A.1.c for chronic whole effluent toxicity.

C. Flow Maximum Daily Effluent Limitation. Compliance with the effluent limitation for flow shall be determined by calculating the difference between successive flow totalizer readings and dividing the result by the number of days the Discharger discharged to the Pioneer Ditch Pipeline (Discharge Point 001) between the successive flow readings. If the calculated result exceeds the maximum daily flow limitation, the Discharger will be considered out of compliance each day the Discharger discharged to the Pioneer Ditch Pipeline (Discharge Point 001) between successive flow totalizer readings.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

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

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

Average Monthly Effluent Limitation (AMEL)

The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Best Practicable Treatment or Control (BPTC)

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

Bi-Monthly

Occurring every two months.

Bioaccumulative

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

Carcinogenic

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

Coefficient of Variation (CV)

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

Daily Discharge

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

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

Dissolved Analyte
The concentration of analyte in an aqueous sample that will pass through a 0.45 µm membrane prior to sample acidification.

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).

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

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

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

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

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

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

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

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

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

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

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 Central Valley Water Board.

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

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

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

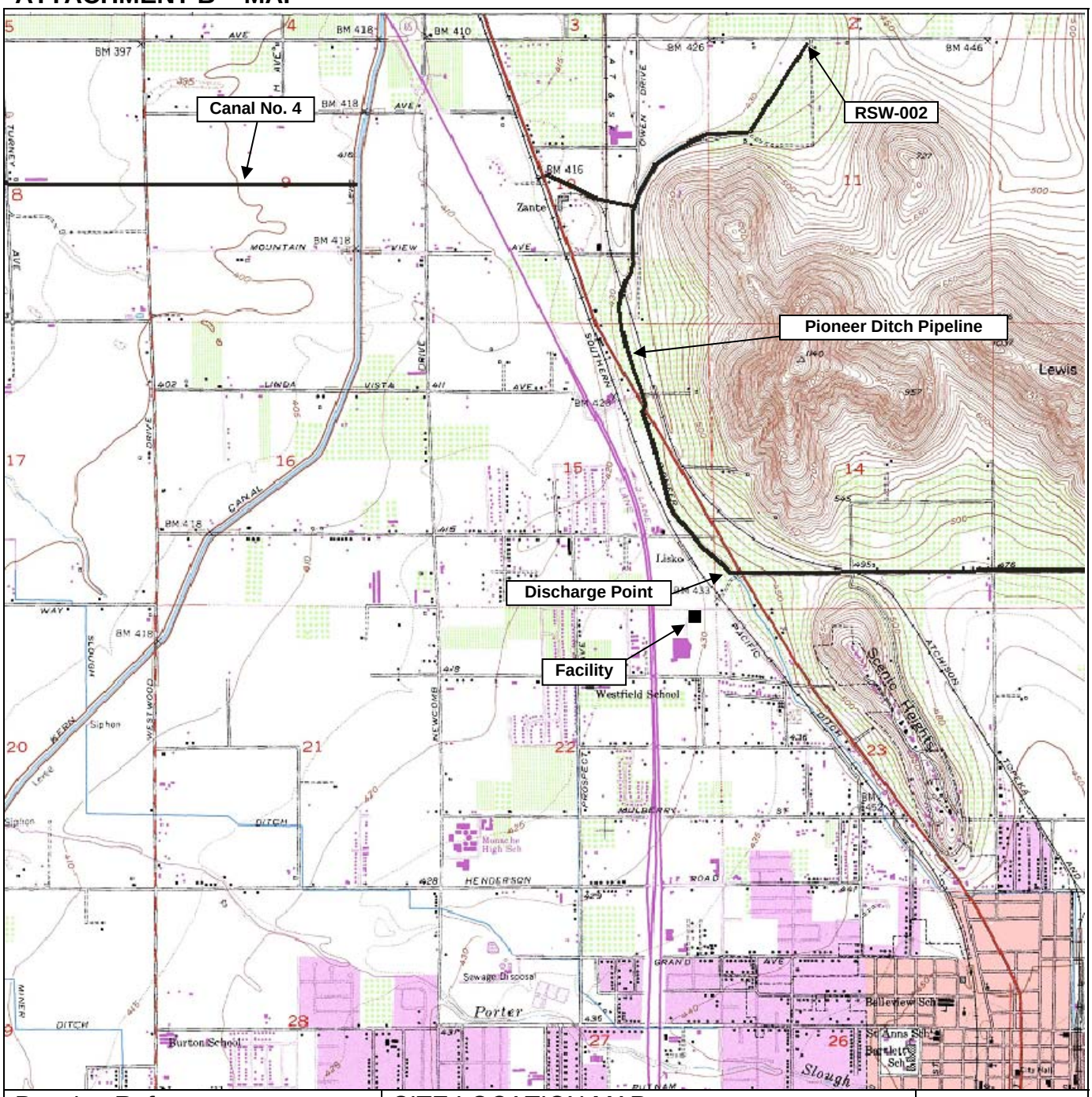
$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

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

Total Recoverable Analyte
The concentration of analyte determined either by "direct analysis" of an unfiltered acid preserved sample with turbidity of <1 NTU, or by analysis of the solution extract of an unfiltered aqueous samples following digestion by refluxing with hot dilute mineral acid(s).

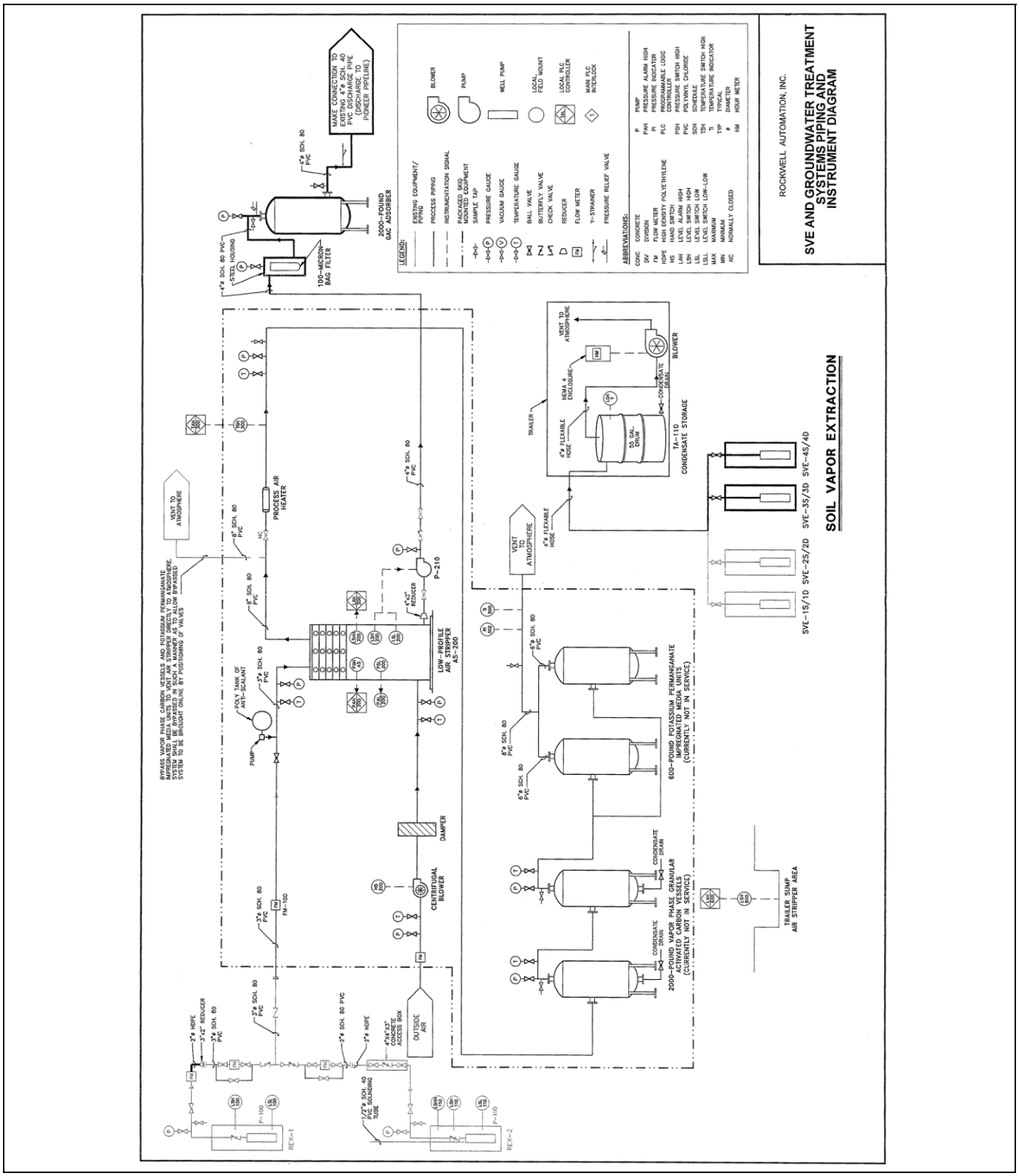
Toxicity Reduction Evaluation (TRE)
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first 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	
PORTERVILLE U.S.G.S TOPOGRAPHIC MAP 7.5 MINUTE QUADRANGLE *Dated July 1969*	ROCKWELL AUTOMATION, INC. AND PORTERVILLE UNIFIED SCHOOL DISTRICT GROUNDWATER CLEANUP SYSTEM	N W E S

ATTACHMENT C – FLOW SCHEMATIC



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

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

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

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

The Discharger shall allow the Central Valley 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); CWC section 13383):

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

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

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

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

G. Bypass

1. Definitions

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

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

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

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

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

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

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

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

5. Notice

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

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

H. Upset

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

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

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

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

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

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

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

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

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

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

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

IV. STANDARD PROVISIONS – RECORDS

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

B. Records of monitoring information shall include:

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

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

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

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

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

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

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

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

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

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

B. Signatory and Certification Requirements

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

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

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

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

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative

may thus be either a named individual or any individual occupying a named position.) (40 CFR 122.22(b)(2)); and

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

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

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

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

C. Monitoring Reports

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

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

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

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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

F. Planned Changes

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

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

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

3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during

the permit application process or not reported pursuant to an approved land application plan. (40 CFR 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Central Valley Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with 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 Central Valley Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 CFR 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

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

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

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

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

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

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

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

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

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

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

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

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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

I. GENERAL MONITORING PROVISIONS

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

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

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

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

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

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

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

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

I. Treatment system and discharge monitoring shall not be required during periods when the treatment system is shut down. The Discharger shall note the periods of shutdown in semiannual self-monitoring reports.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location representative of the groundwater treatment system influent contribution from extraction well REX-1
--	INF-002	A location representative of the groundwater treatment system influent contribution from extraction well REX-2
001	EFF-001	A location representative of the final effluent from the groundwater treatment system and prior to discharge to the Pioneer Ditch Pipeline
--	RSW-002	At the terminus of the Pioneer Ditch Pipeline near Avenue 184 and Road 243 (36° 7’ 24.636” N, 119° 1’ 45.6954” W)

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Locations INF-001 and INF-002

1. Influent samples shall be collected at approximately the same time as effluent samples; the time of collection of samples shall be recorded.

2. The Discharger shall monitor influent to the groundwater treatment system at INF-001 and INF-002 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Carbon Tetrachloride	µg/L	Grab	Bi-Monthly	[1, 2]
Chloroform	µg/L	Grab	Bi-Monthly	[1, 2]
1,1-Dichloroethane	µg/L	Grab	Bi-Monthly	[1, 2]
1,2-Dichloroethane	µg/L	Grab	Bi-Monthly	[1, 2]
1,1-Dichloroethylene	µg/L	Grab	Bi-Monthly	[1, 2]
Methylene Chloride	µg/L	Grab	Bi-Monthly	[1, 2]
Tetrachloroethylene	µg/L	Grab	Bi-Monthly	[1, 2]
1,1,1-Trichloroethane	µg/L	Grab	Bi-Monthly	[1, 2]
1,1,2-Trichloroethane	µg/L	Grab	Bi-Monthly	[1, 2]
Trichloroethylene	µg/L	Grab	Bi-Monthly	[1, 2]
Trichlorofluoromethane	µg/L	Grab	Bi-Monthly	[1, 2]
Other VOCs[3,4]	µg/L	Grab	Bi-Monthly	[1, 2]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	Bi-Monthly[5]	[1]
Mercury, Total Recoverable	µg/L	Grab	Bi-Monthly[5]	[6]
Selenium, Total Recoverable	µg/L	Grab	Bi-Monthly[5]	[1]

1 Pollutants shall be analyzed using the analytical methods described in 40 CFR 136.
2 Test method used shall be EPA Method 601, Standard Method (20th edition) 6200C, EPA Method 8260, or equivalent method with a practical quantitation limit (PQL) no greater than 0.5 µg/L or no greater than the lowest Minimum Levels (MLs) in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP).
3 All volatile organic constituents listed in Table 2a of Appendix 4 of the SIP.
4 VOCs = Volatile Organic Compounds
5 If the results of two years of monitoring indicate a baseline trend for the concentration of this constituent in the influent, the Discharger may submit a written request to the Executive Officer to reduce or eliminate this requirement.
6 Unfiltered total mercury samples shall be taken using clean hands/dirty hands procedures, as described in USEPA method 1669: *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*, and shall be analyzed by USEPA method 1630/1631 (Revision E) with a method detection limit of 0.2 ng/L for total mercury.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor treated groundwater at Monitoring Location EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous[10]	--
pH	standard units	Grab	Bi-Monthly	[2]
Temperature	ºC	Grab	Bi-Monthly	[2]
Ammonia Nitrogen, Total (as N)	mg/L	Grab	Bi-Monthly	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Ammonia, un-ionized (as N)[11]	mg/L	Calculated	Bi-Monthly	--
Mercury, Total Recoverable	µg/L	Grab	Bi-Monthly	[3,9]
Selenium, Total Recoverable	µg/L	Grab	Bi-Monthly	[2,3]
General Minerals[4]	vary	Grab	Bi-Monthly	[2]
Nitrate (as N)	mg/L	Grab	Bi-Monthly	[2]
Carbon Tetrachloride	µg/L	Grab	Bi-Monthly[1]	[3,5]
Chloroform	µg/L	Grab	Bi-Monthly[1]	[3,5]
1,1-Dichloroethane	µg/L	Grab	Bi-Monthly[1]	[3,5]
1,2-Dichloroethane	µg/L	Grab	Bi-Monthly[1]	[3,5]
1,1-Dichloroethylene	µg/L	Grab	Bi-Monthly[1]	[3,5]
Methylene Chloride	µg/L	Grab	Bi-Monthly[1]	[3,5]
Tetrachloroethylene	µg/L	Grab	Bi-Monthly[1]	[3,5]
1,1,1-Trichloroethane	µg/L	Grab	Bi-Monthly[1]	[3,5]
1,1,2-Trichloroethane	µg/L	Grab	Bi-Monthly[1]	[3,5]
Trichloroethylene	µg/L	Grab	Bi-Monthly[1]	[3,5]
Trichlorofluoromethane	µg/L	Grab	Bi-Monthly[1]	[5]
Other VOCs[6,7]	µg/L	Grab	Bi-Monthly[1]	[3,5]
Priority Pollutants	vary	Grab	2/permit cycle[8]	[2,3]

[1] If the Facility has a shutdown that may result in discharge of untreated or partially treated wastewater, the Discharger shall increase effluent sampling to daily. Samples shall be analyzed immediately upon startup and daily thereafter until continuous steady-state operation is achieved, in accordance to Provision VI.C.4.c.

[2] Samples shall be analyzed using the methods and procedures described in 40 CFR 136, or other methods approved and specified by the Executive Officer. The detection limits shall be low enough to determine compliance with the effluent limitations or the applicable water quality objective for those constituents without effluent limitations.

[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 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] General Minerals shall include alkalinity (bicarbonate, carbonate, and hydroxide), boron, calcium, chloride, electrical conductivity @ 25 °C, hardness (as $CaCO_3$), iron, magnesium, manganese, potassium, sodium, sulfate, total dissolved solids, and all major anions and cations. Analyses should be accompanied by an anion cation balance demonstrating that analyses are complete. Samples must be filtered with a 0.45-micron filter prior to sample preservation.

[5] Test method used shall be EPA Method 601, Standard Method (20th edition) 6200C, EPA Method 8260, or equivalent method with a PQL no greater than 0.5 µg/L or no greater than the lowest MLs in the SIP.

[6] VOCs = Volatile Organic Compounds

[7] All volatile organic constituents listed in Table 2a of Appendix 4 of the SIP.

[8] Priority Pollutant monitoring shall be conducted once between 15 April 2011 and 31 October 2011 and once between 1 November 2012 and 14 April 2013.

[9] Unfiltered total mercury samples shall be taken using clean hands/dirty hands procedures, as described in USEPA Method 1669: *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels*, and shall be analyzed by USEPA Method 1630/1631 (Revision E) with a method detection limit of 0.2 ng/L for total mercury.

[10] Flow totalizer readings shall be recorded, at minimum, bi-monthly. Flow shall be reported as average daily flow and calculated by subtracting the difference between successive flow totalizer readings and dividing the result by the number of days the Discharger discharged to the Pioneer Ditch Pipeline between successive flow totalizer readings.

[11] The pH and temperature collected at RSW-002 shall be used to calculate the un-ionized ammonia fraction in the effluent.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

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

1. *Monitoring Frequency* – The Discharger shall perform **annual (1/year)** acute toxicity testing in September.

2. *Sample Types* – Samples shall be grab samples taken at the effluent monitoring location EFF-001.

3. *Test Species* – Test species shall be fathead minnows (*Pimephales promelas*).

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

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

6. *Test Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

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

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

1. *Monitoring Frequency –* The Discharger shall perform **annual (1/year)** three species chronic toxicity testing in September.

2. *Sample Types* – Effluent samples shall be grab samples taken at the effluent monitoring location EFF-001.

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

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

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

- The fathead minnow, *Pimephales promelas* (larval survival and growth test); and
- The green alga, *Selenastrum capricornutum* (growth test).

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

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

7. *Dilutions* – The chronic toxicity testing shall be performed using the dilution series identified in the table, below.

Table E-4. Chronic Toxicity Testing Dilution Series

Sample	Dilutions (%)					Controls	
	100	50	25	12.5	6.25	Receiving Water[1]	Laboratory Water
% Effluent	100	50	25	12.5	6.25	0	0
% Dilution Water[1]	0	50	75	87.5	93.75	100	0
% Laboratory Water	0	0	0	0	0	0	100

[1] Dilution water may be uncontaminated receiving water, a standard synthetic (reconstituted) water, or another acceptable dilution water as defined in Section 7 of EPA/821/R-02/013. The dilution series may be altered upon written approval of Central Valley Water Board staff.

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

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

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

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

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

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

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

   b. The statistical methods used to calculate endpoints;

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

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

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

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

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

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

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

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

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

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

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS – NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

A. Monitoring Location RSW-002

1. The Discharger shall monitor the Pioneer Ditch Pipeline at RSW-002 as follows. Receiving water samples shall be collected at approximately the same time as effluent samples.

Table E-5. Receiving Water Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Temperature	ºC	Grab	Bi-Monthly	[1]
Hardness (as $CaCO_3$)	mg/L	Grab	2/Year	[1]
Ammonia, Total (as N)[2]	mg/L	Grab	Bi-Monthly	[1]
pH	standard units	Grab	Bi-Monthly	[1]

[1] Samples shall be analyzed using the methods and procedures described in 40 CFR Part 136, or other methods approved and specified by the Executive Officer.
[2] Record pH and temperature at time of sample collection.

IX. OTHER MONITORING REQUIREMENTS – NOT APPLICABLE

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

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

3. **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 40 CFR Part 136.

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

   a. Sample results greater than or equal to the 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.

4. Compliance Determination. Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and in Attachment A of this Order. For purposes of reporting and administrative enforcement by the Central Valley Water Board and the State Water Board, 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).

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

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

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

B. Self-Monitoring Reports (SMRs)

1. The Discharger shall electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://ciwqs.waterboards.ca.gov/). 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 Monitoring and Reporting Program under sections III through IX. The Discharger shall submit semiannual and annual 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-6. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Bi-Monthly	Closest of 1 January, 1 March, 1 May, 1 July, 1 September, or 1 November following (or on) permit effective date	Samples shall be collected every other month	Submit with semiannual SMR on 1 August and 1 February
2/Year	Permit effective date	1 January through 30 June 1 July through 31 December	Submit with semiannual SMR on 1 August and 1 February
2/permit cycle	15 April 2011	Once between 15 April 2011 through 31 October 2011 and once between 1 November 2012 through 14 April 2013	Submit with semiannual SMR for the reporting period in which the sample was collected

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

a. When CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

b. The Discharger shall attach laboratory analysis sheets, including quality assurance/quality control information.

c. 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.

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

C. Other Reports

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

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

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

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

   d. Graphical summaries of the monitoring data obtained during the previous year.

   e. A discussion of the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

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

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the Facility.

Table F-1. Facility Information

WDID	5D542095001
Discharger	Rockwell Automation, Inc. and Porterville Unified School District
Name of Facility	Groundwater Cleanup System
Facility Address	914 West Pioneer Avenue
	Porterville, CA 93257
	Tulare County
Facility Contact, Title and Phone	Troy M. Pfaff, Environmental Manager, (414) 382-5664
Authorized Person to Sign and Submit Reports	Troy M. Pfaff, Environmental Manager, (414) 382-5664
Mailing Address	1201 South Second Street Milwaukee, WI 53204
Billing Address	Same as Mailing Address
Type of Facility	Groundwater extraction and cleanup facility
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	B
Pretreatment Program	Not Applicable
Reclamation Requirements	Not Applicable
Facility Permitted Flow	0.288 million gallons per day (mgd)
Facility Design Flow	0.288 mgd
Watershed	South Valley Floor Hydrologic Unit, Tule Delta Hydrologic Area (No. 558.20)
Receiving Water	Pioneer Ditch Pipeline, Canal No. 4, North Branch of the Tule River
Receiving Water Type	Inland Surface Water (Irrigation supply ditch)

A. Rockwell Automation, Inc. (Rockwell), a division of Rockwell International Corporation (RIC), is the owner and operator of the groundwater cleanup system (Facility), a groundwater extraction and cleanup facility. Porterville Unified School District (District) owns the property at 914 West Pioneer Avenue on which the Facility is located.

Together Rockwell Automation, Inc. and Porterville Unified School District are hereinafter referred to as Discharger.

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

B. The Facility discharges treated groundwater to Pioneer Ditch Pipeline, a water of the United States, and is currently regulated by Order No. R5-2005-0092, which was adopted on 24 June 2005 and administratively extended on 8 June 2010.

C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on 21 October 2009. The application was deemed complete on 24 December 2009.

II. FACILITY DESCRIPTION

The Facility is located in the City of Porterville in Section 22, Township 22 South, Range 27 East, Mount Diablo Base and Meridian (MDB&M), as shown in Attachment B, a part of this Order. In 1956, RIC, known as Rockwell Manufacturing Company at the time, leased the property and began manufacturing water and gas meters. RIC purchased the property in 1971. During 1971 through 1982, INCOM used the property for manufacturing marine cable. Mr. Albert Levinson, defined by Order No. 96-106 as a Discharger, purchased the property in 1983. In 2000, the District purchased the property from the Levinson Estate. The District currently operates an adult school at the property. Rockwell Manufacturing Company and RIC both contributed to the groundwater pollution onsite. Rockwell Manufacturing Company, RIC, and INCOM are conducting the groundwater cleanup for volatile organic compounds (VOCs).

The Facility includes two extraction wells, an air stripping system, a granular activated carbon (GAC) vessel, and a groundwater monitoring system. According to the Report of Waste Discharge (RWD), and the monitoring data for the period July 2005 through December 2009 submitted by the Discharger, the Discharger operates the Facility at a continuous extraction rate of up to 90 gallons per minute (gpm). The Facility is designed for a continuous extraction rate up to 200 gpm.

A. Description of Wastewater and Biosolids Treatment or Controls

Two distinct aquifer zones have been delineated in the upper 160 feet of alluvial sediments. The upper aquifer originates about 30 feet below ground surface (bgs) and extends to about 90 feet bgs. The lower aquifer occurs below a depth of about 130 feet and ranges in thickness from about 5 to 30 feet. The upper and lower aquifers are separated by an aquitard ranging in thickness from 30 to 60 feet.

Investigation of the upper aquifer in the vicinity and downgradient of the property identified the lateral extent of the pollution. In 1991, two private wells outside of the property boundaries were identified as potential conduits to the lower aquifer and were

properly abandoned. The VOC plume is within the upper aquifer and roughly 30 feet thick, 550 feet wide, and 900 feet long.

Rockwell has performed periodic groundwater monitoring on the District's property since 1987. Currently, the groundwater monitoring system consists of 32 groundwater monitoring wells, 8 vapor extraction wells, and 5 private domestic and irrigation wells. In May 1991, the Discharger installed a groundwater cleanup system consisting of an extraction well (REX-1), a scale inhibitor system, an air-blower and packed tower aeration air stripping tower (PTA), and dual-vessel vapor phase granular activated carbon (GAC) adsorbers. In June 1998, the Discharger removed the GAC adsorbers because the San Joaquin Valley Air Pollution Control District authorized for the direct discharge of the air-stripper vapor without GAC polish. In 2001, the Discharger added an additional extraction well (REX-2). The extraction wells are constructed to a depth of 100 feet bgs. REX-1, in the northeast corner of the District's property, is perforated the entire saturated thickness of the upper aquifer (about 30 feet). REX-2, in the center of the District's property near the northeast corner of the groundwater treatment system, is also perforated the entire saturated thickness of the upper aquifer (about 40 feet). In 2002, the Discharger replaced the PTA with a low profile tray design air stripper (model No. STAT 180). The low-profile tray air stripper uses counter current flow to remove dissolved VOCs from groundwater as it is sprayed over and trickles through a five-tray system. A scale inhibitor prevents formation of inorganic deposits in the air-stripper. Polyacrylate additive (CL-1352) is the scale inhibitor that is currently used at the Facility. VOCs removed from the groundwater are converted into a vapor phase and discharged to the atmosphere. In 2009, Rockwell completed Facility upgrades including the replacement of aboveground pipeline from REX-1 with an underground high density polyethylene pipeline to improve pipeline integrity and the addition of a 2,000-pound GAC vessel to improve VOC treatment. Treated groundwater is discharged to the Pioneer Ditch Pipeline.

B. Discharge Points and Receiving Waters

1. **Discharge Point.** Treated groundwater is discharged at Discharge Point 001 to the Pioneer Ditch Pipeline, a water of the United States and hydraulically connected to Canal No. 4 which flows through a segment of the North Branch of the Tule River. Discharge Point 001 is approximately 220 feet east of the northeastern corner of the District's property in Section 14, Township 21 South, Range 27 East, MDB&M at a point latitude 36° 5' 41" N and longitude 119° 2' 23" W. Discharge Point 001 is within the South Valley Floor Hydrologic Unit, Tule Delta Hydrologic Area (No. 558.20) and the Tule Groundwater Basin (Detailed Analysis Unit No. 243).

2. **Surface Waters.** Pioneer Ditch Pipeline is a 24-inch diameter pressurized subterranean pipeline used to convey irrigation and recharge waters from Success Dam, east of Porterville, to agricultural lands along its 11-mile length. The pipeline terminates about 2 miles north of the District's property. Roughly one-third of a mile from its terminus, surplus water can flow from Pioneer Ditch Pipeline into an unlined cross connection, approximately one mile long, which connects with Canal No. 4, operated by the Lower Tule River Irrigation District. On 15 September 2010, a

representative from the Lower Tule River Irrigation District stated that the unlined cross connection has not been used in approximately five years. The connection from the unlined cross connection to Canal No. 4 has not been severed, and the Lower Tule River Irrigation District states it does not intend to sever the connection in the near future. The discharge to Pioneer Ditch Pipeline is currently distributed by the Lower Tule River Irrigation District for irrigation.

Canal No. 4 conveys irrigation waters between the Porterville area and the City of Corcoran. As part of this conveyance, the water flows through a segment of the North Branch of the Tule River, which is approximately 8 miles in length. This segment begins approximately 11.5 miles west of Pioneer Ditch Pipeline in the center of the SE ¼ of Section 2, Range 25E, Township 21S, MDB&M, and ends in the northern part of Section 22, Range 24E, Township 21S, MDB&M. It is possible that the treated groundwater may at times be discharged to the North Branch of the Tule River, a water of the United States and a tributary to the Tule River. Therefore, discharges from the Facility to Pioneer Ditch Pipeline and Canal No. 4 must be protective of the designated uses of Tule River (below Lake Success). The beneficial uses of Tule River, to which Pioneer Ditch Pipeline is hydraulically connected, are provided in Section IV.C.2.a of this Fact Sheet.

During normal conditions, flow in the Pioneer Ditch Pipeline is from Success Dam "downstream" towards the District property. During periods of low demand for irrigation water, flow in the Pioneer Ditch Pipeline may be dominated by treated groundwater from Discharge Point 001.

3. **Groundwater.** As described earlier, two aquifer zones exist in the upper 160 feet of alluvial sediments. The upper aquifer originates about 30 feet bgs and extends to about 90 feet bgs. A lower aquifer occurs below a depth of about 130 feet and ranges in thickness from about 5 to 30 feet in the vicinity of the property. The two aquifers are separated by a laterally extensive aquitard comprised of stiff cohesive clay and sandy clay.

   The upper aquifer contains moderately permeable sand lenses interspersed with lower permeability clayey materials. It is comprised of sand, sandy gravel, silty clay, clayey sand, clay, and sandy clay. The Discharger described the upper aquifer by segregating it into shallow and basal zones. The shallow zone extends from the water table to a depth of about 55 feet bgs. Sediments encountered in the shallow zone range from clayey sand to sandy clay and occur in laterally discontinuous lenses. The basal zone extends from the bottom of the shallow zone, at a depth of approximately 55 feet, to the top of the upper aquitard, at about 90 feet bgs.

   Groundwater moves northeasterly and background groundwater quality is generally good. Groundwater samples collected from monitoring wells at the City of Porterville wastewater treatment facility show that in 1995 groundwater EC ranged from about 300 to 500 µmhos/cm. However, tetrachloroethylene (PCE) is intermittently detected in background wells. Central Valley Water Board staff was unable to find selenium or mercury (recent constituents of concern) groundwater data in the vicinity of the District property.

Ammonia and nitrate are constituents of concern in the treated groundwater. In fact, this Order includes an effluent limitation for un-ionized ammonia (as N). Land use in the surrounding area is generally agriculture, which can be a cause of nitrogenous compounds in groundwater. Central Valley Water Board staff was unable to find data for nitrogenous compounds in the vicinity of the District property.

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

Effluent limitations contained in Order No. R5-2005-0092 for discharges from Discharge Point 001 and representative monitoring data from the term of Order No. R5-2005-0092 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation		Monitoring Data July 2005 – December 2009	
		Average Monthly	Maximum Daily	Highest Average Monthly Discharge	Highest Daily Discharge
Flow	mgd	--	0.288	--	0.13
Carbon Tetrachloride	µg/L	--	<0.5	--	ND
Chloroform	µg/L	--	<0.5	--	0.27J
1,1-Dichloroethane	µg/L	--	<0.5	--	0.63J
1,2-Dichloroethane	µg/L	0.38[1]	<0.5	ND	ND
1,1-Dichloroethylene	µg/L	0.057[1]	<0.5	7.1	7.1
Methylene Chloride	µg/L	--	<0.5	--	ND
Tetrachloroethylene	µg/L	--	<0.5	--	0.76
1,1,1-Trichloroethane	µg/L	--	<1.0	--	ND
1,1,2- Trichloroethane	µg/L	--	<0.5	--	ND
Trichloroethylene	µg/L	--	<0.5	--	0.31J
Trichlorofluoromethane	µg/L	--	<0.5	--	ND
Other VOCs[2]	µg/L	--	<0.5	--	ND
Electrical Conductivity@ 25 °C	µmhos/cm	--	1000[3]	--	834
Chloride	mg/L	--	175	--	52.7
Boron	mg/L	--	1.0	--	0.11

ND = Reported as non-detect
J = Estimated value
[1] If approved Minimum Level (ML) is greater than Monthly Average Limit, then compliance is met if concentration is below ML.
[2] Other Volatile Organic Compounds listed in Table 2a of Appendix 4 of the State Implementation Policy.
[3] During the irrigation season, late April through October of each year, the discharge cannot cause an exceedance of Receiving Water Limitation in Order No. R5-2005-0092 section D.12 - The EC during irrigation season to exceed 450 µmhos/cm.

D. Compliance Summary

1. During the monitoring period of July 2005 through December 2009, the Discharger exceeded the following effluent limitations established by Order No. R5-2005-0092 for Discharge Point 001.

Table F-3. Effluent Violations at Discharge Point 001

Parameter	Units	Effluent Limitation		Number of Exceedances	
		Average Monthly	Maximum Daily	Average Monthly Exceedances	Maximum Daily Exceedances
1,1-Dichloroethylene	µg/L	0.057	<0.5	2	2
1,1-Dichloroethane	µg/L	--	<0.5	--	1
Tetrachloroethylene	µg/L	--	<0.5	--	1

Order No. R5-2005-0092:	Condition	Number of Exceedances
Effluent Limitation B.3	The additive toxicity of the constituents in the discharge from the Facility described by Order No. R5-2005-0092 Finding No. 31 shall not equal or exceed 1.0.	2

E. Planned Changes – Not Applicable

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

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

B. California Environmental Quality Act (CEQA)

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

C. State and Federal Regulations, Policies, and Plans

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

   a. *Water Quality Control Plan for the Tulare Lake Basin*, Second Edition, revised January 2004 (Basin Plan).

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

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

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

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

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

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

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

1. Under section 303(d) of the 1972 CWA, states, territories and authorized tribes are required to develop lists of water quality limited segments. The waters on these lists do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. On 30 November 2006 USEPA gave final approval to California's 2006 section 303(d) List of Water Quality Limited Segments. The Basin Plan references this list of Water Quality Limited Segments (WQLSs), which are defined as "…*those sections of lakes, streams, rivers or other fresh water bodies where water quality does not meet (or is not expected to meet) water quality standards even after the application of appropriate limitations for point sources* (40 CFR Part 130, et seq.)." The Basin Plan also states, "*Additional treatment beyond minimum federal standards will be imposed on dischargers to [WQLSs]. Dischargers will be assigned or allocated a maximum allowable load of critical pollutants so that water quality objectives can be met in the segment*." Pioneer Ditch Pipeline, Canal No. 4, and Tule River are not listed as impaired water bodies under California's 2006 section 303(d) List of Water Quality Limited Segments.

2. **Total Maximum Daily Loads (TMDLs).** USEPA requires the Central Valley Water Board to develop TMDLs for each 303(d) listed pollutant and water body combination. No TMDLs are scheduled for Pioneer Ditch Pipeline, Canal No. 4, and Tule River.

E. Other Plans, Polices and Regulations – Not Applicable

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304

(Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law [33 U.S.C., §1311(b)(1)(C); 40 CFR 122.44(d)(1)]. NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to criteria specifying maximum amounts of particular pollutants. Pursuant to federal regulations, 40 CFR 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality*." Federal regulations, 40 CFR 122.44(d)(1)(vi), further provide that "[w]*here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits*."

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 122.44(d) requires that permits include WQBELs to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established. The Basin Plan at page IV-21 contains an implementation policy, "*Application of Water Quality Objectives*", that specifies that the Central Valley Water Board "*will, on a case-by-case basis, adopt numerical limitations in orders which will implement the narrative objectives*." This policy complies with 40 CFR 122.44(d)(1). With respect to narrative objectives, the Central Valley Water Board must establish effluent limitations using one or more of three specified sources, including: (1) USEPA's published water quality criteria, (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria (i.e., the Central Valley Water Board's "*Application of Water Quality Objectives*")(40 CFR 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*." (Basin Plan at III-6.) The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The narrative chemical constituents objective states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At a minimum, "…*water designated MUN shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)…*" in Title 22 of the

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

A. Discharge Prohibitions

1. Prohibition III.A concerns a change in manner or location of the discharge, or a change in its character, from what was provided in the RWD and evaluated for compliance with the CWC and CWA.

2. Prohibition III.B prohibits bypass pursuant to 40 CFR 122.41(m)(4), with federal allowance for exceptions set forth in Section I.G. of Attachment D, Federal Standard Provisions. It also prohibits overflows, which concerns release of untreated and partially treated groundwater.

3. Prohibition III.C reflects general situations that, if created, justify cleanup or abatement enforcement activities and assessment of administrative civil liabilities.

4. Prohibition III.D concerns two categories of waste that are subject to full containment as prescribed by Title 23 and Title 27 of the California Code of Regulations and, if discharged, have high potential for creating a condition that would violate Prohibition III.C as well.

B. Technology-Based Effluent Limitations

1. Scope and Authority

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

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

a. Best practicable control technology currently available (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. CWA section 402(a)(1) and 40 CFR 125.3 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 40 CFR 125.3.

2. Applicable Technology-Based Effluent Limitations

a. Volatile Organic Compounds. CWA section 301(b)(1) requires NPDES permits to include effluent limitations that achieve technology-based standards and any more stringent limitations necessary to meet water quality standards. Water quality standards include the Basin Plan's beneficial uses and narrative and numeric water quality objectives, State Water Board adopted standards, and federal standards including NTR and CTR. These standards include the Basin Plan's narrative toxicity objective and State Water Board Resolution No. 68-16. Since there are no promulgated technology-based effluent limitations for VOCs in groundwater extracted for cleanup, effluent limitations are established based upon consideration of the Central Valley Water Board staff's BPJ. State Water Board Resolution No. 68-16 requires implementation of best practicable treatment or control (BPTC) to ensure that the highest water quality is maintained consistent with the maximum benefit to the people of the State. Federal regulations require effluent limits representing BAT for all toxic pollutants. For VOCs in groundwater, BAT is consistent with BPTC. With respect to the specific discharges permitted herein, and particularly the air stripper system and GAC polish system, the following have been considered, as required by 40 CFR 125 for establishing BAT based upon BPJ:

i. **Appropriate technology for category or class of discharges** – Air stripper treatment systems and GAC treatment systems, or a combination of both, are commonly used to remove VOCs from extracted groundwater at cleanup sites. Both types of systems are designed to remove VOCs to nondetectable concentrations. Properly operated and maintained systems perform reliably

and ensure essentially complete removal of VOCs. The Discharger employs an air stripper system and GAC polish system.

ii. **Unique factors relating to the applicant** – The Discharger has not identified any unique factors that would justify discharges equaling or exceeding quantifiable concentrations of VOCs.

iii. **Age of equipment** – The air stripper was installed in 1991 and replaced in 2002. The GAC polish system was installed in 1991 and removed in 1998. The groundwater cleanup system was upgraded with a GAC polish system in 2009.

iv. **Non-water quality environmental impacts, including energy requirements and cost of achieving proposed effluent reduction** – The groundwater cleanup system currently in place reliably removes VOCs to nondetectable concentrations of less than 0.5 µg/L; therefore, continued implementation of the maximum daily effluent limit would not create additional non-water quality impacts, or financial costs for the Discharger.

v. **Influent and effluent data** – The monitoring data provided by the Discharger indicate that its groundwater cleanup system has the ability to reliably remove VOCs in the groundwater to a level below the established maximum daily effluent limitations of less than 0.5 µg/L set by Order No. R5-2005-0092. As summarized in Table F-3 in Section II.D.1 of this Fact Sheet, the 0.5 µg/L maximum daily effluent limitations set by Order No. R5-2005-0092 for VOCs was exceeded only four times during the permit term. Air stripping systems and GAC polish systems are appropriate technologies for VOC removal from extracted groundwater. Based on the monitoring data provided by the Discharger, the air stripper system and the GAC polish system in the Facility consistently meet the effluent limitations set by Order No. R5-2005-0092. The above supports the conclusion that the limits of less than 0.5 µg/L as a maximum daily reflect BPTC and BAT. Additionally, the Discharger must properly operate and maintain its treatment systems as specified in Section VI.C.4. of this Order. With continued proper operation and maintenance of the Facility, the Discharger will continue to achieve these effluent limitations. Therefore, this Order carries over the VOCs effluent limitations established by Order No. R5-2005-0092 based on BPJ. Additionally, this Order carries over the carbon tetrachloride, chloroform, 1,1-dichloroethane, 1,2-dichloroethane, methylene chloride, tetrachloroethylene, 1,1,2-trichloroethane, trichloroethylene, and trichlorofluoromethane effluent limitations established by Order No. R5-2005-0092 based on BPJ. This Order also establishes a more stringent effluent limitation for 1,1,1-trichloroethane of less than 0.5 µg/L based on BPTC. Monitoring data show the Discharger is able to comply with the more stringent effluent limitation.

b. Flow. The groundwater cleanup system was designed to provide groundwater treatment for up to a design flow of 0.288 million gallons per day (mgd) or 200 gpm. Order No. R5-2005-0092 established an effluent flow limitation based

on the design flow of the groundwater cleanup system. Therefore, this Order carries over the maximum daily effluent limitation established by Order No. R5-2005-0092.

Summary of Technology-based Effluent Limitations
Discharge Point 001

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

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	--	0.288	--	--
Carbon Tetrachloride	µg/L	--	<0.5	--	--
Chloroform	µg/L	--	<0.5	--	--
1,1-Dichloroethane	µg/L	--	<0.5	--	--
1,2-Dichloroethane	µg/L	--	<0.5	--	--
1,1-Dichloroethylene	µg/L	--	<0.5	--	--
Methylene Chloride	µg/L	--	<0.5	--	--
Tetrachloroethylene	µg/L	--	<0.5	--	--
1,1,1-Trichloroethane	µg/L	--	<0.5	--	--
1,1,2-Trichloroethane	µg/L	--	<0.5	--	--
Trichloroethylene	µg/L	--	<0.5	--	--
Trichlorofluoromethane	µg/L	--	<0.5	--	--
Other VOCs[1]	µg/L	--	<0.5	--	--

[1] Other Volatile Organic Compounds listed in Table 2a of Appendix 4 of the State Implementation Policy.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

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

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

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

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

The Basin Plan on page II-1 states: *"Protection and enhancement of beneficial uses of water against quality degradation is a basic requirement of water quality planning under the Porter-Cologne Water Quality Control Act. In setting water quality objectives, the Regional Water Board must consider past, present, and probable future beneficial uses of water."* and with respect to disposal of wastewaters states that "...*use of waters for disposal of wastewaters is not included as a beneficial use…and are subject to regulation as activities that may harm protected uses."*

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

a. Receiving Water and Beneficial Uses.

The Basin Plan does not specifically identify beneficial uses for Pioneer Ditch Pipeline, but does identify present and potential uses for Tule River (below Lake Success), to which Pioneer Ditch Pipeline, via Canal No. 4, is hydraulically connected. Thus, discharges to the Pioneer Ditch Pipeline must be protective of the following beneficial uses:

Table F-5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Pioneer Ditch Pipeline, Canal No. 4, Tule River	Municipal and domestic supply (MUN); agricultural supply, including irrigation and stock watering (AGR); industrial process supply (PRO); industrial service supply (IND); water contact recreation, including canoeing and rafting (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); wildlife habitat (WILD); and ground water recharge (GWR).
--	Groundwater	MUN, IND, PRO, AGR, and WILD

b. Effluent and Ambient Background Data. The reasonable potential analysis (RPA), as described in section IV.C.3 of this Fact Sheet, was based on data from July 2005 through December 2009, which includes effluent data submitted in SMRs and the RWD.

c. Priority Pollutant Metals

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

This Order has established the criteria for hardness-dependent metals based on the reasonable worst-case ambient hardness as required by the SIP[1], the CTR[2] and State Water Board Order No. WQO 2008-0008 (City of Davis). The SIP and the CTR require the use of "receiving water" or "actual ambient" hardness, respectively, to determine effluent limitations for these metals. (SIP, § 1.2; 40 CFR 131.38(c)(4), Table 4, note 4.) The CTR does not define whether the term "ambient", as applied in the regulations, necessarily requires the consideration of upstream as opposed to downstream hardness conditions. In some cases, the hardness of effluent discharges change the hardness of the ambient receiving water. Therefore, where reliable, representative data are available, the hardness value for calculating criteria can be the downstream receiving water hardness, after mixing with the effluent (WQO 2008-0008, p. 11). The Central Valley Water Board thus has considerable discretion in determining ambient hardness (*Id.*, p. 10).

The hardness values must also be protective under all flow conditions (*Id.*, pp. 10-11). As discussed below, scientific literature provides a reliable method for calculating protective hardness-dependent CTR criteria, considering all discharge conditions. This methodology produces criteria that

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

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

ensure these metals do not cause receiving water toxicity, while avoiding criteria that are unnecessarily stringent.

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

- For comparing the MEC to the applicable criterion, in accordance with the SIP, CTR, and WQO 2008-0008, the reasonable worst-case downstream hardness was used to adjust the criterion. In this evaluation the portion of the receiving water affected by the discharge is analyzed. For hardness-dependent criteria, the hardness of the effluent has an impact on the determination of the applicable criterion in areas in the receiving water affected by the discharge. Therefore, for this situation it is necessary to consider the hardness of the effluent in determining the applicable hardness to adjust the criterion. The procedures for determining the applicable criterion after proper adjustment using the reasonable worst-case downstream hardness is outlined below.

- For comparing the Maximum Ambient Background Concentration to the applicable criterion, in accordance with the SIP, CTR, and WQO 2008-0008, the reasonable worst-case upstream hardness was used to adjust the criterion. In this evaluation the area outside the influence of the discharge is analyzed. For this situation, the discharge does not impact the upstream hardness. Therefore, the effect of the effluent hardness was not included in this evaluation.

Calculation of Water Quality-Based Effluent Limitations. The remaining discussion in this section relates to the development of water quality-based effluent limits when it has been determined that the discharge has reasonable potential to cause or contribute to an exceedance of the CTR hardness-dependent metals criteria in the receiving water.

A 2006 Study[1] developed procedures for calculating the effluent concentration allowance (ECA)[2] for CTR hardness-dependent metals. The

[1] Emerick, R.W.; Borroum, Y.; & Pedri, J.E., 2006. California and National Toxics Rule Implementation and Development of Protective Hardness Based Metal Effluent Limitations. WEFTEC, Chicago, Ill.

[2] The ECA is defined in Appendix 1 of the SIP (page Appendix 1-2). The ECA is used to calculate water quality-based effluent limitations in accordance with Section 1.4 of the SIP.

2006 Study demonstrated that it is necessary to evaluate all discharge conditions (e.g., high and low flow conditions) and the hardness and metals concentrations of the effluent and receiving water when determining the appropriate ECA for these hardness-dependent metals. Simply using the lowest recorded upstream receiving water hardness to calculate the ECA may result in over or under protective water quality-based effluent limitations.

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

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

Where:

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

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

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

$$\text{ECA} = C \text{ (when } C \leq B)^{1} \qquad \text{(Equation 2)}$$

Where:

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

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

[1] The 2006 Study assumes the ambient background metals concentration is equal to the CTR criterion (i.e., C ≤ B).

ECA for Concave Down Metals

For Concave Down Metals (i.e., chronic cadmium, chromium III, copper, nickel, and zinc) the 2006 Study demonstrates that when the effluent is in compliance with the CTR criteria and the upstream receiving water is in compliance with the CTR criteria, any mixture of the effluent and receiving water will always be in compliance with the CTR criteria. Therefore, based on any observed ambient background hardness, no receiving water assimilative capacity for metals (i.e., ambient background metals concentrations are at their respective CTR criterion) and the minimum effluent hardness, the ECA calculated using Equation 1 with a hardness equivalent to the minimum effluent hardness is protective under all discharge conditions (i.e., high and low dilution conditions and under all mixtures of effluent and receiving water as the effluent mixes with the receiving water). This is applicable whether the effluent hardness is less than or greater than the ambient background receiving water hardness.

The effluent hardness ranged from 296 mg/L to 397 mg/L (as $CaCO_3$), based on 29 samples from July 2005 to December 2009. Order No. R5-2005-0092 did not require the Discharger to monitor the receiving water; therefore, no hardness data for the Pioneer Ditch Pipeline are available. Two hardness values for the Tule River approximately 1.2 miles below Lake Success were obtained from the California Environmental Data Exchange Network (CEDEN) website. The station code in CEDEN is 558TUR060. Two samples were taken on 23 June 2003 and 18 May 2004. Calcium and magnesium were reported with each sample, but not hardness. The hardness of each sample was calculated using Standard Methods for the Examination of Water and Wastewater, 21st Edition, p. 2-37, Method 2340B (2005). The two hardness values were calculated as 66 mg/L (as $CaCO_3$) for the sample taken on 23 June 2003, and 110 mg/L (as $CaCO_3$) for the sample taken on 18 May 2004. Using a hardness of 296 mg/L (as $CaCO_3$) to calculate the ECA for all Concave Down Metals will result in water quality-based effluent limitations that are protective under all potential effluent/receiving water mixing scenarios and under all known hardness conditions, as demonstrated in the example using copper shown in Table F-6, below. This example assumes the following conservative conditions for the upstream receiving water:

- Upstream receiving water <u>always</u> at the lowest observed upstream receiving water hardness (i.e., 66 mg/L as $CaCO_3$), and

- Upstream receiving water copper concentration <u>always</u> at the CTR criteria (i.e., no assimilative capacity).

Using these reasonable worst-case conditions, the discharge can be mixed with the receiving water and a resulting downstream mixed hardness (or metals concentration) can be calculated for all discharge and mixing conditions (e.g., 0% effluent to 100% effluent) based on a simple mass

balance as shown in Equation 3, below. By evaluating all discharge conditions the reasonable worst-case downstream hardness can be determined for adjusting the CTR criteria.

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

Where:

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

As demonstrated in Table F-6, using a hardness of 296 mg/L (as $CaCO_3$) to calculate the ECA for Concave Down Metals ensures the discharge is protective under all discharge and mixing conditions. In this example, the effluent is in compliance with the CTR criteria and any mixture of the effluent and receiving water is in compliance with the CTR criteria. An ECA based on a lower hardness (e.g., lowest upstream receiving water hardness) would also be protective, but would result in unreasonably stringent effluent limits considering the known conditions. Therefore, in this Order the ECA for all Concave Down Metals has been calculated using Equation 1 with a hardness of 296 mg/L (as $CaCO_3$).

Table F-6. Copper ECA Evaluation

Minimum Observed Effluent Hardness			**296 mg/L (as $CaCO_3$)**
Minimum Observed Upstream Receiving Water Hardness			**66 mg/L (as $CaCO_3$)**
Maximum Assumed Upstream Receiving Water Copper Concentration			**6.5 µg/L[1]**
Copper $ECA_{chronic}$[2]			**24 µg/L**
Effluent Fraction	**Mixed Downstream Ambient Concentration**		
	Hardness[3] (mg/L) (as $CaCO_3$)	**CTR Criteria[4] (µg/L)**	**Copper[5] (µg/L)**
1%	68.3	6.7	6.7
5%	77.5	7.5	7.4
15%	100.5	9.4	9.1
25%	123.5	11.2	10.8
50%	181	15.5	15.1
75%	238.5	19.6	19.3
100%	296	23.6	23.6

1 Maximum assumed upstream receiving water copper concentration calculated using Equation 1 for chronic criterion at a hardness of 66 mg/L (as $CaCO_3$).

2 ECA calculated using Equation 1 for chronic criterion at a hardness of 296 mg/L (as $CaCO_3$).

3 Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction using Equation 3.

4 Mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

5 Mixed downstream ambient copper concentration is the mixture of the receiving water and effluent copper concentrations at the applicable effluent fraction using Equation 3.

ECA for Concave Up Metals

For Concave Up Metals (i.e., acute cadmium, lead, and acute silver), the 2006 Study demonstrates that due to a different relationship between hardness and the metals criteria, the effluent and upstream receiving water can be in compliance with the CTR criteria, but the resulting mixture may be out of compliance. Therefore, the 2006 Study provides a mathematical approach to calculate the ECA to ensure that any mixture of effluent and receiving water is in compliance with the CTR criteria (see Equation 4, below). The ECA, as calculated using Equation 4, is based on the reasonable worst-case ambient background hardness, no receiving water assimilative capacity for metals (i.e., ambient background metals concentrations are at their respective CTR criterion), and the minimum observed effluent hardness. The reasonable worst-case ambient background hardness depends on whether the effluent hardness is greater than or less than the upstream receiving water hardness. There are circumstances where the conservative ambient background hardness assumption is to assume that the upstream receiving water is at the highest observed hardness concentration. The conservative upstream receiving water condition as used in Equation 4 below is defined by the term H_{rw}.

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

Where:

m, b	=	criterion specific constants (from CTR)
H_e	=	minimum observed effluent hardness
H_{rw}	=	minimum observed upstream receiving water hardness when the minimum effluent hardness is always greater than observed upstream receiving water hardness ($H_{rw} < H_e$)

A similar example as was done for the Concave Down Metals is shown for lead, a Concave Up Metal, in Table F-7, below. As previously mentioned, the minimum effluent hardness is 296 mg/L (as $CaCO_3$), while the upstream receiving water hardness ranged from 66 mg/L to 110 mg/L (as $CaCO_3$). In this case, the minimum effluent concentration is greater than the range of observed upstream receiving water hardness concentrations. Thus, the ECA was calculated (Equation 4) based on the minimum observed upstream receiving water hardness, no receiving water assimilative capacity for lead (i.e., ambient background lead concentration is at the CTR chronic criterion) and the minimum effluent hardness.

Using Equation 4 to calculate the ECA for all Concave Up Metals will result in water quality-based effluent limitations that are protective under all potential effluent/receiving water mixing scenarios and under all known hardness conditions, as demonstrated in Table F-7, for lead. In this example, the effluent is in compliance with the CTR criteria and any mixture of the effluent

and receiving water is in compliance with the CTR criteria. Use of a lower ECA (e.g., calculated based solely on the lowest upstream receiving water hardness) is also protective, but would lead to unreasonably stringent effluent limits considering the known conditions. Therefore, Equation 4 has been used to calculate the ECA for all Concave Up Metals in this Order.

Table F-7. Lead ECA Evaluation

Minimum Observed Effluent Hardness			**296 mg/L (as $CaCO_3$)**
Minimum Observed Upstream Receiving Water Hardness			**66 mg/L (as $CaCO_3$)**
Maximum Assumed Upstream Receiving Water Lead Concentration			**1.9 µg/L[1]**
Lead $ECA_{chronic}$[2]			**10.2 µg/L**
Effluent Fraction	**Mixed Downstream Ambient Concentration**		
	Hardness[3] (mg/L) (as $CaCO_3$)	**CTR Criteria[4] (µg/L)**	**Lead[5] (µg/L)**
1%	68.3	2.0	2.0
5%	77.5	2.3	2.3
15%	100.5	3.2	3.1
25%	123.5	4.2	4.0
50%	181.0	6.8	6.0
75%	238.5	9.6	8.1
100%	296.0	12.7	10.2

1 Minimum assumed upstream receiving water lead concentration calculated using Equation 1 for chronic criterion at a hardness of 66 mg/L (as $CaCO_3$).

2 ECA calculated using Equation 4 for chronic criteria.

3 Mixed downstream ambient hardness is the mixture of the receiving water and effluent hardness at the applicable effluent fraction.

4 Mixed downstream ambient criteria are the chronic criteria calculated using Equation 1 at the mixed hardness.

5 Mixed downstream ambient lead concentration is the mixture of the receiving water and effluent lead concentrations at the applicable effluent fraction.

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

d. Assimilative Capacity/Mixing Zone

During periods of low demand for irrigation water, flow in the Pioneer Ditch Pipeline may be dominated by treated groundwater from Discharge Point 001. Since at times Pioneer Ditch Pipeline is effluent dominated downstream of the discharge from the Facility, there is no assimilative capacity and no dilution credits have been granted for this discharge. Hence, all effluent limitations must be met at the point of the discharge into the receiving water.

3. Determining the Need for WQBELs

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

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

i. Order No. R5-2005-0092 stated that given the limited data for arsenic, barium, chromium III, chromium VI, and zinc, the Central Valley Water Board could not determine reasonable potential. Order No. R5-2005-0092 required the Discharger to monitor the effluent for these constituents once every other month. Monitoring data collected between July 2005 through December 2009 show these constituents were detected below their respective most stringent water quality criteria; therefore, effluent monitoring for these constituents is not carried over in this Order except as required when conducting priority pollutant monitoring.

ii. 1,2-Dichloroethane. Order No. R5-2005-0092 contained a water quality-based effluent limitation for 1,2-dichloroethane of 0.38 µg/L as a monthly average. Monitoring data collected between July 2005 through December 2009 show 1,2-dichloroethane was not detected above the method detection limit in the effluent of the treatment system. Based on this new information, there is no reasonable potential to cause an exceedance of a water quality criteria for 1,2-dichloroethane. Satisfaction of anti-backsliding and antidegradation policies is discussed in sections IV.D.3 and IV.D.4 of this Fact Sheet.

c. Constituents with Reasonable Potential. The Central Valley Water Board finds that the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for ammonia, 1,1-dichloroethylene, pH, mercury, and selenium. WQBELs for these constituents are included in this Order. A summary of the RPA is provided in Attachment G, and a detailed discussion of the RPA for each constituent is provided below.

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

i. Ammonia

(a) WQO.

(1) Total Ammonia (as N). USEPA developed the National Recommended Ambient Water Quality Criteria (NAWQC) for the protection of freshwater aquatic life for total ammonia, and recommends acute (1-hour average; criteria maximum concentration or CMC) standards based on pH and chronic (30-day average; criteria continuous concentration or CCC) standards based on pH and temperature. USEPA also recommends that no 4-day average concentration should exceed 2.5 times the 30-day CCC. USEPA found that as pH increased, both the acute and chronic toxicity of ammonia increased. Salmonids were more sensitive to acute toxicity effects than other species. However, while the acute toxicity of ammonia was not influenced by temperature, it was found that invertebrates and young fish experienced increasing chronic toxicity effects with increasing temperature. While WARM is not a known beneficial use of the Pioneer Ditch Pipeline, discharges to the pipeline must be protective of downstream receiving waters which are designated WARM. Thus, the recommended criteria for waters where salmonids and early life stages not present were used.

The maximum permitted effluent pH is 8.3, as the Basin Plan objective for pH in the receiving stream is the range of 6.5 to 8.3. In order to protect against the worst-case short-term exposure of an organism, a pH value of 8.3 was used to derive the acute criterion. The resulting acute criterion is 4.71 mg/L.

The CCC is based on a 30-day averaging period. Order No. R5-2005-0092 required the Discharger to monitor effluent temperature once every other month. Using the highest recorded instantaneous effluent temperature (29.1°C on 12 June 2008) is not likely representative of the 30-day average temperature in the Pioneer Ditch Pipeline. During the hottest months, the discharge is mixed with the cooler Lake Success water in the Pioneer Ditch Pipeline, thereby resulting in a less stringent chronic ammonia criterion. No downstream receiving water data exist, as Order No. R5-2005-0092 did not require receiving water monitoring. Insufficient data exist to develop a reasonable CCC for ammonia. This Order requires the Discharger to monitor the Pioneer Ditch Pipeline for pH, temperature, and total ammonia (as N) once every other month.

(2) Un-ionized Ammonia (as N). The Basin Plan includes an un-ionized ammonia (as N) objective for all surface waters in the Tulare Lake Basin of 0.025 mg/L.

(b) RPA Results.

(1) Total Ammonia (as N). The maximum effluent concentration for total ammonia (as N) was 0.8 mg/L on 7 December 2007, which is well below the CMC of 4.7 mg/L. The CCC will be calculated once the Discharger has collected sufficient information, at which time a RPA will be conducted.

(2) Un-ionized Ammonia (as N). Monitoring data show that un-ionized ammonia (as N) in the effluent exceeded the Basin Plan objective of 0.025 mg/L in three out of 27 samples. Thus, an effluent limitation based on this objective is necessary.

(c) WQBELs.

(1) Total Ammonia (as N). This Order does not include effluent limitations for total ammonia (as N).

(2) Un-ionized Ammonia (as N). This Order includes a daily maximum effluent limitation for un-ionized ammonia (as N) that is based on the Basin Plan objective.

(d) Plant Performance and Attainability.

(1) Total Ammonia (as N). Not applicable.

(2) Un-ionized Ammonia (as N). Analysis of the effluent data shows that the un-ionized ammonia (as N) MEC of 0.067 mg/L is greater than the applicable WQBEL. Based on the sample results for the effluent, the un-ionized ammonia (as N) limitation appears to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the un-ionized ammonia (as N) effluent limitation, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitation for un-ionized ammonia (as N) is a new regulatory requirement within this permit, which became applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, a compliance time schedule for compliance with the un-ionized ammonia (as N) effluent limitation is established in Time Schedule Order (TSO) No. R5-2011-**XXXX** in accordance with CWC section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

ii. 1,1-Dichloroethylene

(a) WQO. The CTR includes a criterion of 0.057 µg/L for 1,1-dichloroethylene for the protection of human health for waters from which both water and organisms are consumed.

(b) RPA Results. The MEC for 1,1-dichloroethylene was 7.1 µg/L. Therefore, 1,1-dichloroethylene in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

(c) WQBELs. Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for 1,1-dichloroethylene. This Order carries over the 1,1-dichloroethylene average monthly effluent limitation established by Order No. R5-2005-0092 and establishes a more stringent water quality-based maximum daily effluent limitation. The effluent limitations for 1,1-dichloroethylene include an AMEL and MDEL of 0.057 µg/L and 0.11 µg/L, respectively.

(d) Plant Performance and Attainability. Analysis of the effluent data from July 2005 through December 2009 shows that only two consecutive samples were greater than the applicable WQBELs; all other effluent samples are non-detect. According to the Discharger's SMR, the detections were most likely the result of the air stripper requiring maintenance. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

iii. Mercury

(a) WQO. The current NAWQC for protection of freshwater aquatic life, continuous concentration, for mercury is 0.77 µg/L (30-day average, chronic criteria). The CTR contains a human health criterion (based on a threshold dose level causing neurological effects in infants) of 0.050 µg/L for waters from which both water and aquatic organisms are consumed. Both values are controversial and subject to change. In 40 CFR 131, USEPA acknowledges that the human health criteria may not be protective of some aquatic or endangered species and that "…*more stringent mercury limits may be determined and implemented through use of the State's narrative criterion.*" In the CTR, USEPA reserved the mercury criteria for freshwater and aquatic life and may adopt new criteria at a later date.

(b) RPA Results. Based on 29 samples, the maximum observed effluent mercury concentration was 0.43 µg/L on 12 June 2008. Therefore, mercury in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the CTR criterion for the protection of human health.

(c) WQBELs. Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for mercury. This Order contains a final AMEL and MDEL for mercury of 0.05 µg/L and 0.13 µg/L, respectively, based on the CTR criterion for the protection of human health. These limits are new limits that were not included in Order No. R5-2005-0092.

If USEPA develops new water quality standards for mercury, this permit may be reopened and the effluent limitations adjusted.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 0.43 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the effluent limitations for mercury are a new regulatory requirement within this permit, which became applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, a compliance time schedule for compliance with the mercury effluent limitations is established in TSO No. R5-2011-**XXXX** in accordance with CWC section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

iv. Selenium

(a) WQO. The NTR includes a 4-day average criterion of 5 µg/L for total recoverable selenium for the protection of freshwater aquatic life.

(b) RPA Results. Based on 29 samples, the MEC for selenium was 64.6 µg/L (as total recoverable). Therefore, selenium in the discharge has a reasonable potential to cause or contribute to an in-stream excursion above the NTR criterion for the protection of freshwater aquatic life.

(c) WQBELs. Due to no assimilative capacity, dilution credits are not allowed for development of the WQBELs for selenium. This Order contains a final AMEL and MDEL for selenium of 2.9 µg/L and 8.9 µg/L, respectively, based on the NTR criterion for the protection of freshwater aquatic life. These limits are new limits that were not included in Order No. R5-2005-0092.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MEC of 64.6 µg/L is greater than applicable WQBELs. Based on the sample results for the effluent, the limitations appear to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the effluent limitations, and the new or modified control measures cannot be designed, installed and put into operation within 30 calendar days. Furthermore, the

effluent limitations for selenium are a new regulatory requirement within this permit, which became applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, a compliance time schedule for compliance with the selenium effluent limitations is established in TSO No. R5-2011-**XXXX** in accordance with CWC section 13300, that requires preparation and implementation of a pollution prevention plan in compliance with CWC section 13263.3.

v. pH

(a) WQO. The Basin Plan includes a water quality objective for surface waters that the "*…pH of water shall not be depressed below 6.5, raised above 8.3, or changed at any time more than 0.3 units from normal ambient pH.*"

(b) RPA Results. The lowest observed pH value in the effluent was 7.31 and highest observed pH value was 8.48. The discharge of treated groundwater from the Facility has a reasonable potential to cause or contribute to an excursion above the Basin Plan's numeric objectives for pH.

(c) WQBELs. Effluent limitations for pH of 6.5 as an instantaneous minimum and 8.3 as instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH. These limits are new limits that were not included in Order No. R5-2005-0092.

(d) Plant Performance and Attainability. Analysis of effluent data shows that the maximum effluent pH of 8.48 is greater than the applicable WQBEL, and that the discharge exceeded a pH of 8.3 in 9 out of 29 samples. Based on the sample results for the effluent, the new instantaneous pH effluent limitation appears to put the Discharger in immediate non-compliance. New or modified control measures may be necessary in order to comply with the instantaneous maximum pH effluent limitation, and the new or modified control measures cannot be designed, installed, and put into operation within 30 calendar days. Furthermore, the instantaneous maximum effluent limitation for pH is a new regulatory requirement within this permit, which became applicable to the waste discharge with the adoption of this Order, which was adopted after 1 July 2000. Therefore, a compliance time schedule for compliance with the instantaneous maximum effluent limitation for pH is established in TSO No. R5-2011-**XXXX** in accordance with CWC section 13300.

vi. Salinity

(a) WQO. There are no USEPA water quality criteria for the protection of aquatic organisms for electrical conductivity @ 25 ºC (EC), total dissolved solids (TDS), sulfate, boron, and chloride. The Basin Plan contains a chemical constituent objective that incorporates state MCLs, contains a

narrative objective, and contains numeric water quality objectives for EC, TDS, boron, and chloride.

Table F-8. Salinity Water Quality Criteria/Objectives

Parameter	Basin Plan[1]	Secondary MCL[3]	Effluent	
			Average	Maximum
Boron (mg/L)	1.0	--	**0.09**	**0.112**
Chloride (mg/L)	175	250, 500, 600	**46.2**	**52.7**
EC (µmhos/cm)	1000[2]	900, 1600, 2200	**757**	**834**
TDS (mg/L)	--	500, 1000, 1500	**469**	**516**

1 Basin Plan, Page IV-9, Discharges to Navigable Waters.

2 The maximum EC of a discharge shall not exceed the quality of the source water plus 500 µmhos/cm or 1,000 µmhos/cm, whichever is more stringent.

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

(1) Boron. For discharges to navigable waters, the Basin Plan numeric water quality objective for boron is 1.0 mg/L.

(2) Chloride. The secondary MCL for chloride is 250 mg/L, as a recommended level, 500 mg/L as an upper level, and 600 mg/L as a short-term maximum. For discharges to navigable waters, the Basin Plan numeric water quality objective for chloride is 175 mg/L.

(3) Electrical Conductivity @ 25 ºC. The secondary MCL for EC is 900 µmhos/cm as a recommended level, 1600 µmhos/cm as an upper level, and 2200 µmhos/cm as a short-term maximum. For discharges to navigable waters, the Basin Plan numeric water quality objective for EC is 1000 µmhos/cm. Furthermore, the Basin Plan also requires the maximum EC of a discharge shall not exceed the quality of the source water plus 500 µmhos/cm or 1000 µmhos/cm, whichever is more stringent.

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

(b) RPA Results.

(1) Chloride. Chloride concentrations in the effluent ranged from 41.6 mg/L to 52.7 mg/L, with an average of 46.2 mg/L, for 28 samples collected by the Discharger from July 2005 through December 2009. These levels do not exceed the applicable water quality objectives.

(2) Boron. Boron concentrations in the effluent ranged from 0.02 mg/L to 0.112 mg/L, with an average of 0.09 mg/L, for 28 samples collected by

the Discharger from July 2005 through December 2009. These levels do not exceed the applicable water quality objective.

(3) Electrical Conductivity @ 25 ºC. Electrical conductivity concentrations in the effluent ranged from 610 µmhos/cm to 834 µmhos/cm, with an average of 757 µmhos/cm, for 28 samples collected by the Discharger from July 2005 through December 2009. These levels do not exceed the applicable water quality objectives.

(4) Total Dissolved Solids. TDS concentrations in the effluent ranged from 411 mg/L to 516 mg/L, with an average of 469 mg/L, for 28 samples collected by the Discharger from July 2005 through December 2009. The applicable water quality objective was exceeded one time out of the 28 samples.

(c) WQBELs. Salinity, TDS, and EC are measures of dissolved salts in water. Salinity is a measure of the mass fraction of salts (measured in parts per thousands), where as TDS is a measure of the concentration of salts (measured in mg/L). Since EC of the water generally changes proportionate to changes in dissolved salt concentrations, EC is a convenient surrogate measure for TDS.

This Order carries over the MDELs established by Order No. R5-2005-0092 for boron, chloride, and EC. The salinity effluent limitations included in this Order are based on protection of the Basin Plan objectives for boron, chloride, and EC. The boron, chloride, and EC effluent limitations are retained to ensure the effluent continues to meet the Basin Plan water quality objectives. While the Basin Plan EC effluent limits are not generally applied as a maximum daily, the limit will remain a maximum daily to satisfy anti-backsliding provisions of the CWA and given the Discharger is able to consistently meet the maximum daily limit, as shown in Table F.6.

(d) Plant Performance and Attainability. Analysis of the effluent data shows that the MECs for boron, chloride, and EC are less than the applicable WQBELs. The Central Valley Water Board concludes, therefore, that immediate compliance with these effluent limitations is feasible.

4. WQBEL Calculations

a. This Order includes WQBELs for 1,1-dichloroethylene, ammonia, mercury, selenium, boron, chloride, pH, and electrical conductivity @ 25 ºC. The general methodology for calculating WQBELs based on the different criteria/objectives is described in subsections IV.C.4.b through e, below. See Attachment H for the WQBEL calculations.

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

ECA = C + D(C – B) *where C>B, and*
ECA = C *where C≤B*

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

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

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

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

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

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

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

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

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

Table F-9. WQBEL Calculations for Mercury

	Human Health
Criteria, total (µg/L)	0.05
Dilution Credit	No Dilution
ECA	0.05
AMEL (µg/L)[1]	**0.05**
MDEL/AMEL Multiplier[2]	2.62
MDEL (µg/L)	**0.13**

1 AMEL = ECA per section 1.4.B, Step 6 of the SIP.
2 Assumes sampling frequency n ≤ 4. Uses MDEL/AMEL multiplier calculated from the AMEL $multiplier_{95}$ and MDEL $multiplier_{99}$ equations in section 1.4.B, Step 5 of the SIP.

Table F-10. WQBEL Calculations for Selenium

	Acute	Chronic
Criteria, total recoverable (µg/L)[1]	N/A	5
Dilution Credit	N/A	No Dilution
ECA, total recoverable[2]	N/A	5
ECA Multiplier[3]	N/A	0.22
LTA	N/A	1.10
AMEL Multiplier (95th%)[4,5]	N/A	2.67
AMEL (µg/L)	N/A	**2.9**
MDEL Multiplier (99th%)[6]	N/A	8.08
MDEL (µg/L)	N/A	**8.9**

1 CTR aquatic life criteria.
2 ECA calculated per section 1.4.B, Step 2 of the SIP.
3 Acute and Chronic ECA Multiplier calculated at 99th percentile per section 1.4.B, Step 3 of the SIP or per sections 5.4.1 and 5.5.4 of the TSD.
4 Assumes sampling frequency n≤4.
5 The probability basis for AMEL is 95th percentile per section 1.4.B, Step 5 of the SIP or section 5.5.4 of the TSD.
6 The probability basis for MDEL is 99th percentile per section 1.4.B, Step 5 of the SIP or section 5.5.4 of the TSD.

Table F-11. WQBEL Calculations for 1,1-Dichloroethylene

	Human Health
Criteria, total (µg/L)	0.057
Dilution Credit	No Dilution
ECA	0.057
AMEL (µg/L)[1]	**0.057**
MDEL/AMEL Multiplier[2]	2.01
MDEL (µg/L)	**0.11**

1 AMEL = ECA per section 1.4.B, Step 6 of the SIP.
2 Assumes sampling frequency n ≤ 4. Uses MDEL/AMEL multiplier calculated from the AMEL $multiplier_{95}$ and MDEL $multiplier_{99}$ equations in section 1.4.B, Step 5 of the SIP.

Summary of Water Quality-Based Effluent Limitations
Discharge Point 001

Table F-12. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
1,1-Dichloroethylene	µg/L	0.057	0.11	--	--
Ammonia, Un-ionized (as N)	mg/L	--	0.025	--	--
Mercury, Total Recoverable	µg/L	0.05	0.13	--	--
Selenium, Total Recoverable	µg/L	2.9	8.9	--	--
Boron	mg/L	--	1.0	--	--
Chloride	mg/L	--	175	--	--
EC	µmhos/cm	--	1000	--	--
pH	standard units	--	--	6.5	8.3

5. Whole Effluent Toxicity (WET)

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, as specified in the Monitoring and Reporting Program (Attachment E section V). This Order also contains effluent limitations for acute and chronic toxicity and requires the Discharger to implement best management practices to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity.

a. Acute Aquatic Toxicity. The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-6) The Basin Plan also states that, *"…effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate…*". USEPA Region 9 provided guidance for the development of acute toxicity effluent limitations in the absence of numeric water quality objectives for toxicity in its document titled "Guidance for NPDES Permit Issuance", dated February 1994. In section B.2. "Toxicity Requirements" (pgs. 14-15) it states that, "*In the absence of specific numeric water quality objectives for acute and chronic toxicity, the narrative criterion 'no toxics in toxic amounts' applies. Achievement of the narrative criterion, as applied herein, means that ambient waters shall not demonstrate for acute toxicity: 1) less than 90% survival, 50% of the time, based on the monthly median, or 2) less than 70% survival, 10% of the time, based on any monthly median. For chronic toxicity, ambient waters shall not demonstrate a test result of greater than 1 TUc.*" Accordingly, effluent limitations for acute toxicity have been included in this Order as follows:

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

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

b. **Chronic Aquatic Toxicity.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-6) Based on chronic WET testing performed by the Discharger from September 2005 through August 2009, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

No dilution has been granted in this Order for the chronic condition. Chronic toxicity testing results exceeding 1 chronic toxic unit (TUc) demonstrate that the discharge has a reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective. Therefore, this Order includes a narrative chronic toxicity effluent limitation.

Numeric chronic WET effluent limitations have not been included in this Order. The SIP contains implementation gaps regarding the appropriate form and implementation of chronic toxicity limits. This has resulted in the petitioning of a NPDES permit in the Los Angeles Region[1] that contained numeric chronic toxicity effluent limitations. To address the petition, the State Water Board adopted WQO 2003-012 directing its staff to revise the toxicity control provisions in the SIP. The State Water Board states the following in WQO 2003-012, "*In reviewing this petition and receiving comments from numerous interested persons on the propriety of including numeric effluent limitations for chronic toxicity in NPDES permits for publicly-owned treatment works that discharge to inland waters, we have determined that this issue should be considered in a regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits."* The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet best management

[1] In the Matter of the Review of Own Motion of Waste Discharge Requirements Order Nos. R4-2002-0121 [NPDES No. CA0054011] and R4-2002-0123 [NPDES NO. CA0055119] and Time Schedule Order Nos. R4-2002-0122 and R4-2002-0124 for Los Coyotes and Long Beach Wastewater Reclamation Plants Issued by the California Regional Water Quality Control Board, Los Angeles Region SWRCB/OCC FILES A-1496 and 1496(a).

practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 CFR 122.44(k).

To ensure compliance with the Basin Plan's narrative toxicity objective, the Discharger is required to conduct chronic WET testing, as specified in the Monitoring and Reporting Program (Attachment E, section V.). Furthermore, the Special Provision contained at VI.C.2.a. of this Order requires the Discharger to investigate the causes of, and identify and implement corrective actions to reduce or eliminate effluent toxicity. If there is adequate evidence of toxicity exceeding the numeric toxicity monitoring trigger, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE work plan. The numeric toxicity monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to perform accelerated chronic toxicity monitoring, as well as, the threshold to initiate a TRE if effluent toxicity has been demonstrated.

D. Final Effluent Limitations

1. Mass-based Effluent Limitations

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

2. Averaging Periods for Effluent Limitations

40 CFR 122.45 (d) requires maximum daily and average monthly discharge limitations for all dischargers other than publicly owned treatment works unless impracticable.

3. Satisfaction of Anti-Backsliding Requirements

The CWA specifies that a revised Order may not include effluent limitations that are less stringent than the previous Order unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA sections 303(d)(4) or 402(o), or, where applicable, 40 CFR 122.44(l).

The effluent limitations in this Order are at least as stringent as the effluent limitations in Order No. R5-2005-0092 with the exception of additive toxicity and the water quality based effluent limitation for 1,2-dichloroethane. The effluent limitations for these pollutants have not been retained from Order No. R5-2005-0092. Based on updated monitoring data that was not available at the time Order No. R5-2005-0092 was issued, these parameters do not exhibit reasonable potential to cause or

contribute to an exceedance of water quality objectives in the receiving water. Removal of the WQBELs in the previous Order is in accordance with CWA sections 303(d)(4) and 402(o), which allow for the removal of WQBELs for attainment waters where antidegradation requirements are satisfied. Removal of WQBELs is consistent with the antidegradation provisions of 40 CFR 131.12 and Sate Water Board Resolution No. 68-16. Therefore, the modifications to these effluent limitations do not violate anti-backsliding requirements.

Order No. R5-2005-0092 contained an effluent limitation for the additive toxicity of certain constituents to be less than 1.0. The equation for calculating additive toxicity is contained in the Basin Plan at page IV-22. This effluent limitation was included in Order No. R5-2005-0092 because the following constituents are considered to be carcinogens and may be present in the discharge: 1,1-dichloroethane, 1,2-dichloroethane, methylene chloride, chloroform, trichloroethylene, tetrachloroethylene, and 1,1,2-trichloroethane. According to the Basin Plan, for carcinogenic constituents, the additive toxicity of the sum of the constituents is determined by dividing the concentration of each carcinogen in the discharge by its toxicological limit. In this case, the toxicological limit was the lowest average monthly water quality based effluent limitation calculated for each constituent. This Order contains technology-based effluent limitations set at the lowest Minimum Level (ML) in the SIP for those constituents. As long as the Discharger complies with the technology-based effluent limitations for the constituents, there would be no way to quantify with a high degree of certainty an exceedance of the additive toxicity effluent limitation. Therefore, the additive toxicity effluent limitation was not retained because it does not provide for greater protection of beneficial uses.

Order No. R5-2005-0092 contained both technology based and water quality based effluent limitations for 1,2-dichloroethane. The water quality-based effluent limitation was based on criteria for human health protection promulgated by the USEPA in the National Toxics Rule that is lower than the technology-based effluent limitation. Effluent monitoring data collected from July 2005 through December 2009 represents new information that was not available at the time Order No. R5-2005-0092 was issued. This new information indicates that 1,2-dichloroethane was not detected in the effluent. This Order carries over the technology-based effluent limitation for 1,2-dichloroethane, but does not carry over the water quality-based effluent limitation because the discharge no longer has reasonable potential to cause an exceedance of water quality objectives for 1,2-dichloroethane.

Modification of the additive toxicity effluent limitation and water quality-based effluent limitation for 1,2-dichloroethane as described above is consistent with the antidegradation provision of 40 CFR 131.12 and Sate Water Board Resolution No. 68-16.

4. Satisfaction of Antidegradation Policy

The treatment system employed for VOC removal represents BPTC. The continued cleanup of polluted groundwater and the use of treated groundwater for irrigation via the Pioneer Ditch Pipeline both benefit the people of the State. This Order does not

allow for an increase in flow or mass of pollutants to the receiving water. Therefore, a complete antidegradation analysis is not necessary. The Order requires compliance with applicable federal technology-based standards and with WQBELs where the discharge could have the reasonable potential to cause or contribute to an exceedance of water quality standards. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.

5. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on volatile organic compounds. The WQBELs consist of restrictions on 1,1-dichloroethylene, un-ionized ammonia (as N), mercury, selenium, boron, chloride, pH, and electrical conductivity @ 25 ºC. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order includes new effluent limitations for un-ionized ammonia (as N), mercury, selenium, and pH to meet numeric objectives or protect beneficial uses.

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

The more stringent of the technology-based effluent limitations and WQBELs has been implemented as the effluent limitations for each constituent. The final effluent limitations for the discharge of treated groundwater effluent through Discharge Point 001 are summarized below:

Summary of Final Effluent Limitations
Discharge Point 001

Table F-13. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations				Basis[1]
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Flow	mgd	--	0.288	--	--	BPJ
Carbon Tetrachloride	µg/L	--	<0.5	--	--	Previous Order, BPJ
Chloroform	µg/L	--	<0.5	--	--	Previous Order, BPJ
1,1-Dichloroethane	µg/L	--	<0.5	--	--	Previous Order, BPJ
1,2-Dichloroethane	µg/L	--	<0.5	--	--	Previous Order, BPJ
1,1-Dichloroethylene	µg/L	0.057	0.11	--	--	Previous Order, CTR
Methylene Chloride	µg/L	--	<0.5	--	--	Previous Order, BPJ
Tetrachloroethylene	µg/L	--	<0.5	--	--	Previous Order, BPJ
1,1,1-Trichloroethane	µg/L	--	<0.5	--	--	Previous Order, BPJ
1,1,2-Trichloroethane	µg/L	--	<0.5	--	--	Previous Order, BPJ
Trichloroethylene	µg/L	--	<0.5	--	--	Previous Order, BPJ
Trichlorofluoromethane	µg/L	--	<0.5	--	--	Previous Order, BPJ
Other VOCs[2]	µg/L	--	<0.5	--	--	Previous Order, BPJ
Ammonia, un-ionized (as N)	mg/L	--	0.025	--	--	Basin Plan
Mercury, Total Recoverable	µg/L	0.05	0.13	--	--	CTR
Selenium, Total Recoverable	µg/L	2.9	8.9	--	--	CTR
pH	standard units	--	--	6.5	8.3	Basin Plan
Boron	mg/L	--	1.0	--	--	Previous Order, Basin Plan
Chloride	mg/L	--	175	--	--	Previous Order, Basin Plan
Electrical Conductivity @ 25 ºC	µmhos /cm	--	1000	--	--	Previous Order, Basin Plan

1 CTR – Based on water quality criteria contained in the California Toxics Rule and applied as specified in the SIP.
BPJ – Best professional judgment

2 Other Volatile Organic Compounds listed in Table 2a of Appendix 4 of the SIP.

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

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

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

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Reclamation Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

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

A. Surface Water

1. CWA section 303(a-c), requires states to adopt water quality standards, including criteria where they are necessary to protect beneficial uses. The Central Valley Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan states that "[t]*he numerical and narrative water quality objectives define the least stringent standards that the Regional Water Board will apply to regional waters in order to protect the beneficial uses.*" The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order contains receiving surface water limitations based on the Basin Plan numerical and narrative water quality objectives for ammonia, bacteria, biostimulatory substances, color, chemical constituents, dissolved oxygen, floating material, oil and grease, pH, pesticides, radioactivity, salinity, suspended sediment, settleable substances, suspended material, tastes and odors, temperature, toxicity, and turbidity.

2. Chapter 3, Table III-2 of the Basin Plan establishes maximum EC levels for water bodies within the Tulare Lake Basin. Table III-2 establishes a maximum EC value of 450 µmhos/cm in the Tule River during irrigation season for releases to reaches below Lake Success. The irrigation season is defined as typically extending 9 to 10 months out of the year. To ensure compliance with the Basin Plan objective, this Order carries over the numeric Receiving Water Limitations for EC based on the Basin Plan objectives for EC. This Order defines the irrigation season as occurring between March and 1 December.

B. Groundwater

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

2. Given that the discharge consists of groundwater that is pumped and treated to remove primary constituents of concern, the discharge is not expected to degrade groundwater.

3. Groundwater limitations are required to protect the beneficial uses of the underlying groundwater.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Federal regulations, 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. California Water Code sections 13267 and 13383 authorize the Central Valley Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (Attachment E) of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for the Facility.

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the groundwater. The bi-monthly monitoring for volatile organic compounds has been retained from Order No. R5-2005-0092. This Order does not carry over the boron, chloride, electrical conductivity @ 25°C (EC), and hardness influent monitoring requirements.

B. Effluent Monitoring

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

2. Effluent monitoring frequencies and sample types for flow, carbon tetrachloride, chloroform, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, methylene chloride, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, trichlorofluoromethane, other VOCs, un-ionized ammonia (as N), mercury, selenium, boron, chloride, and electrical conductivity @ 25 ºC (bi-monthly) have been retained from Order No. R5-2005-0092 to determine compliance with effluent limitations for these parameters.

3. Order No. R5-2005-0092 stated nitrate had reasonable potential to cause or contribute to an exceedance of a water quality objective but did not include effluent monitoring for nitrate. This Order establishes effluent monitoring for nitrate to determine the potential for nitrate to impact beneficial uses.

4. The Facility does not have a recording flow meter. Daily flow rates would entail daily visits to the Facility that would be impractical. The combined flow capacity of the extraction wells cannot physically exceed the effluent flow limitation of 0.288 mgd (200 gpm). This Order requires the Discharger to monitor the flow once every other month and report the flow as an average daily flow.

5. Monitoring data collected over the existing permit term for arsenic, barium, chromium (trivalent), chromium (hexavalent), and zinc did not demonstrate reasonable potential to exceed water quality objectives/criteria. Thus, specific monitoring requirements for these parameters have not been retained from Order No. R5-2005-0092.

6. Priority pollutant data for the effluent has been provided by the Discharger over the term of Order No. R5-2005-0092, and was used to conduct a meaningful reasonable potential analysis. However, in accordance with Section 1.3 of the SIP, periodic monitoring is required for priority pollutants for which criteria or objectives apply and for which no effluent limitations have been established. The monitoring frequency for priority pollutants has been established at once between 15 April 2011 through 31 October 2011 and once between 1 November 2012 through 14 April 2013. Should this monitoring show the need for additional sampling, it will be required by a CWC section 13267 request.

C. Whole Effluent Toxicity Testing Requirements

1. **Acute Toxicity.** Annual 96-hour bioassay testing is required to demonstrate compliance with the effluent limitation for acute toxicity.

2. **Chronic Toxicity.** Annual chronic whole effluent toxicity testing is required in order to demonstrate compliance with the Basin Plan's narrative toxicity objective.

D. Receiving Water Monitoring

1. Surface Water

a. The Pioneer Ditch Pipeline is an underground pressurized pipeline. The nearest monitoring locations to the discharge point are far enough away that samples collected would not be representative of the quality of the receiving water immediately upstream and downstream of the discharge point. However, this Order specifies monitoring requirements for pH, temperature, hardness, and total ammonia once every other month at the terminus of the Pioneer Ditch Pipeline. Collection of pH and temperature data that are representative of the conditions in the Pipeline will allow for calculation of more appropriate total ammonia (as N) criteria that are protective of beneficial uses. This Order does not specify monitoring requirements at a location upstream of the discharge point in the Pioneer Ditch Pipeline.

2. Groundwater

a. The Discharger is required to monitor groundwater in accordance with the *Interim Remedial Measures Work Plan* approved by the Central Valley Water Board on 4 December 2000 and the *Request to Reduce Groundwater Monitoring Frequency* letter dated 3 December 2009 from the Central Valley Water Board.

E. Other Monitoring Requirements – Not Applicable

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42.

Federal regulations, 40 CFR 122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 122.41(j)(5) and (k)(2) because the enforcement authority under the CWC is more stringent. In lieu of these conditions, this Order incorporates by reference CWC section 13387(e).

B. Special Provisions

1. Reopener Provisions

a. **Whole Effluent Toxicity.** This Order requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate effluent toxicity through a Toxicity Reduction Evaluation (TRE). This Order may be reopened to include a numeric chronic toxicity limitation, a new acute toxicity limitation, and/or a limitation for a specific toxicant identified in the TRE. Additionally, if a numeric chronic toxicity water quality objective is adopted by the State Water Board, this Order may be reopened to include a numeric chronic toxicity limitation based on that objective.

2. Special Studies and Additional Monitoring Requirements

a. **Chronic Whole Effluent Toxicity Requirements.** The Basin Plan contains a narrative toxicity objective that states, "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" (Basin Plan at page III-6) Based on whole effluent chronic toxicity testing performed by the Discharger from July 2005 through December 2009, the discharge has reasonable potential to cause or contribute to an in-stream excursion above of the Basin Plan's narrative toxicity objective.

This provision requires the Discharger to develop a TRE work plan in accordance with USEPA guidance. In addition, the provision provides a numeric toxicity monitoring trigger and requirements for accelerated monitoring, as well as, requirements for TRE initiation if there is adequate evidence of toxicity.

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

Accelerated Monitoring. The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether toxicity is repeatedly or periodically present before requiring the implementation of a TRE.

The provision requires accelerated monitoring consisting of four chronic toxicity tests in a six-week period (i.e., one test every two weeks) using the species that exhibited toxicity. Due to the possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete. Guidance regarding accelerated monitoring and TRE initiation is provided in the *Technical Support Document for Water Quality-based Toxics Control,* EPA/505/2-90-001, March 1991 (TSD). The TSD at page 118 states, "*EPA recommends if toxicity is repeatedly or periodically present at*

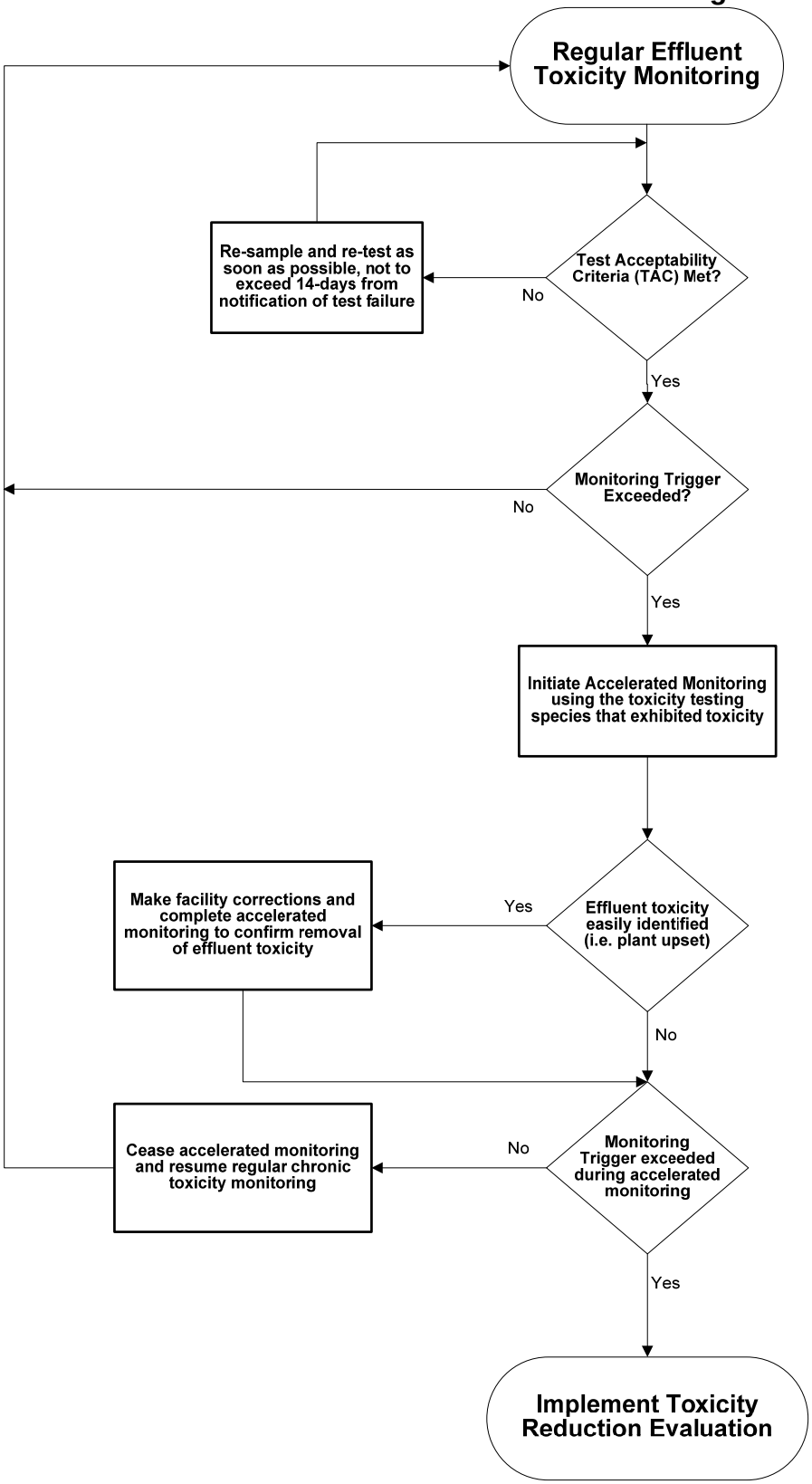
levels above effluent limits more than 20 percent of the time, a TRE should be required." Therefore, four accelerated monitoring tests are required in this provision. If no toxicity is demonstrated in the four accelerated tests, then it demonstrates that toxicity is not present at levels above the monitoring trigger more than 20 percent of the time (only 1 of 5 tests are toxic, including the initial test). However, notwithstanding the accelerated monitoring results, if there is adequate evidence of effluent toxicity (i.e., toxicity present exceeding the monitoring trigger more than 20 percent of the time), the Executive Officer may require that the Discharger initiate a TRE.

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

TRE Guidance. The Discharger is required to prepare a detailed TRE Work Plan in accordance with USEPA guidance, per the requirements of this provision. Numerous guidance documents are available, as identified below:

- Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, EPA/833-B-99/002, August 1999.
- Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), EPA/600/2-88/070, April 1989.
- Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition, EPA 600/6-91/003, February 1991.
- Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I, EPA/600/6-91/005F, May 1992.
- Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA/600/R-92/080, September 1993.
- Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA 600/R-92/081, September 1993.
- Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002.
- Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA-821-R-02-013, October 2002.
- Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991.

Figure F-1
WET Accelerated Monitoring Flow Chart



3. Best Management Practices and Pollution Prevention – Not Applicable

4. Construction, Operation, and Maintenance Specifications

a. The Discharger submitted the Operation and Maintenance Plan (O&M Plan) on 26 September 2005. The O&M Plan was approved by the Executive Officer. Section X.C.1.c. in Attachment E of this Order requires the Discharger to submit with the annual operations report a statement certifying whether the O&M Plan is current and when it was last revised.

b. As the Discharger conducts required groundwater monitoring, it generates purged well water. Typically, groundwater monitoring generated approximately 1,000 gallons of purged well water each quarter. On 24 August 2005, the Discharger submitted the *Work Plan for the Treatment of Purge Water* (Work Plan). The Executive Officer approved the Work Plan. The Discharger treats all purged well water in a portable GAC adsorber. Treated purge water is disposed of on the ground surface near each wellhead or transported to the Facility for subsequent treatment and disposal.

c. In the past, effluent limitations were exceeded frequently during startup of the Facility after it had been out of service for repair or other purposes. This Order contains a more stringent monitoring program for startup of the system after shutdown. If the system has a shutdown that may result in discharge of untreated or partially treated wastewater, the Discharger shall increase effluent sampling frequency as described in the MRP. Samples shall be analyzed immediately upon startup and daily thereafter until continuous steady-state operation is achieved. The Discharger shall ensure that there is sufficient time between sample collections to avoid sample clustering. Untreated and partially treated wastewater shall be handled as described in the approved O&M Plan.

d. Spent carbon and other residual solids removed from liquid wastes or used to treat liquid wastes shall be recycled or disposed of in a manner that is consistent with Division 3, Title 27; Chapter 15, Division 3, Title 23; and Division 4.5, Title 22 of the CCR and approved by the Executive Officer.

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

f. The Discharger shall notify the Central Valley Water Board **within 48 hours** of any changes to the O&M Plan and the process of treating purged well water.

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

6. Other Special Provisions

a. This Order does not pre-empt or supersede the authority of local agencies to prohibit, restrict, or control the discharge of treated groundwater subject to their

control. Discharges allowed by this Order to local irrigation or storm water collection and conveyance facilities must obtain approval from the agency responsible for operation and maintenance of the facilities.

7. Compliance Schedules – Not Applicable

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board is considering the issuance of WDRs that will serve as an NPDES permit for the Facility. As a step in the WDR adoption process, the Central Valley Water Board staff has developed tentative WDRs. The Central Valley Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Notification was provided through physical posting (posting at the Facility and nearest city hall) and Internet posting.

B. Written Comments

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

To be fully responded to by staff and considered by the Central Valley Water Board, written comments must be received at the Central Valley Water Board offices by 5:00 p.m. on **31 December 2010**.

C. Public Hearing

The Central Valley Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: 2/3/4 February 2011
Time: 9:00 a.m.
Location: Regional Water Quality Control Board, Central Valley Region
11020 Sun Center Dr., Suite #200
Rancho Cordova, CA 95670

Interested persons are invited to attend. At the public hearing, the Central Valley Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our Web address is http://www.waterboards.ca.gov/centralvalley where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Central Valley Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Central Valley 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, related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address below at any time between 8:00 a.m. and 4:00 p.m., Monday through Friday. Copying of documents may be arranged through the Central Valley Water Board by calling (559) 445-5116. Our office is at 1685 E Street, Fresno, CA 93706.

F. Register of Interested Persons

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

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Aide Ortiz at (559) 445-6083.

ATTACHMENT G – SUMMARY OF REASONABLE POTENTIAL ANALYSIS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	Basin Plan	MCL	Reasonable Potential
Arsenic	µg/L	7.5	--	10	340	150	--	--	--	10	N
Chromium III	µg/L	<0.5	--	500	4200	500	--	--	--	--	N
Chromium VI	µg/L	2.3	--	11	16	11	--	--	--	--	N
Copper	µg/L	0.75	--	24	39	24	1300	--	--	1000	N
1,1-Dichloroethylene	µg/L	7.1	--	0.057	--	--	0.057	3.2	--	6	**Y**, MEC>C
Mercury	µg/L	0.43	--	0.050	--	--	0.050	0.051	--	2	**Y**, MEC>C
Selenium	µg/L	64.6	--	5	--	5	--	--	--	20	**Y**, MEC>C
Thallium	µg/L	0.21	--	1.7	--	--	1.7	6.3	--	2	N
Zinc	µg/L	41.5	--	300	300	300	--	--	--	5000	N
Ammonia, un-ionized (as N)	mg/L	0.067	--	0.025	--	--	--	--	0.025	--	**Y**, MEC>C
Barium	µg/L	283	--	1000	--	--	--	--	--	1000	N
Chromium	µg/L	4.5	--	50	--	--	--	--	--	50	N
Iron	mg/L	0.183	--	0.3	--	--	--	--	--	0.3	N
Manganese	mg/L	0.0044	--	0.05	--	--	--	--	--	0.05	N
Sulfate	mg/L	27.3	--	250	--	--	--	--	--	250	N
Boron	mg/L	0.112	--	1	--	--	--	--	1	--	N
Chloride	mg/L	52.7	--	175	--	--	--	--	175	250	N
Electrical Conductivity @ 25 ºC	µmhos/cm	834	--	900	--	--	--	--	1000	900	N

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level

ATTACHMENT H – CALCULATION OF WQBELS

Parameter	Units	Most Stringent Criteria			Dilution Factors			HH Calculations			Aquatic Life Calculations									Final Effluent Limitations	
		HH	CMC	CCC	HH	CMC	CCC	ECA_{HH} = $AMEL_{HH}$	AMEL/MDEL $Multiplier_{HH}$	$MDEL_{HH}$	ECA $Multiplier_{acute}$	LTA_{acute}	ECA $Multiplier_{chronic}$	$LTA_{chronic}$	Lowest LTA	AMEL $Multiplier_{95}$	$AMEL_{AL}$	MDEL $Multiplier_{99}$	$MDEL_{AL}$	Lowest AMEL	Lowest MDEL
1,1-Dichloroethylene	µg/L	0.057	--	--	--	--	--	0.057	2.01	0.11	--	--	--	--	--	--	--	--	--	0.057	0.11
Mercury, Total Recoverable	µg/L	0.05	1.4	0.77	--	--	--	0.05	2.62	0.13	0.19	0.26	0.34	0.27	0.26	2.04	0.54	5.34	1.40	0.05	0.13
Selenium, Total Recoverable	µg/L	20	--	5	--	--	--	20	3.03	60.54	0.12	--	0.22	1.10	1.10	2.67	2.93	8.08	8.88	2.9	8.9