URS

Via Email and Hand Delivery
(dharvey@waterboards.ca.gov)

April 2, 2010

W. Dale Harvey, PE
California Regional Water Quality Control Board
Central Valley Region
1685 E Street
Fresno, CA 93706

Subject: Comments on Tentative Waste Discharge Requirements
NPDES Permit No. CA 0082511
AAF-McQuay, Inc. et al.
Groundwater Remediation System, Tulare County

Dear Mr. Harvey:

On behalf of AAF McQuay, URS Corporation wishes to comment on the February 26, 2010 Tentative Waste Discharge Requirements (TWDRs), as a follow-up to our March 18 meeting. The enclosed permit text has been annotated with our comments and requests for changes. We kindly request your consideration of our comments and proposed changes.

Please contact me if you have any questions or comments.

Sincerely,
URS Corporation

Ralph T. Boyajian, PE, GE
Vice President / Branch Manager

Enclosure

c: AAF-McQuay, Attention Paul M. Heim, Esq.

Comments on Tentative WDRs by URS Corporation on behalf of AAF-McQuay
April 2, 2010

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL VALLEY REGION

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ORDER NO. R5-2010-XXXX
NPDES NO. CA0082511

WASTE DISCHARGE REQUIREMENTS FOR THE AAF-McQUAY, INC., ET AL. GROUNDWATER REMEDIATION SYSTEM TULARE COUNTY

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

Table 1. Discharger Information

Discharger	AAF-McQuay, Inc., et al.
Name of Facility	Groundwater Remediation System
Facility Address	Goshen Avenue and Shirk Road
	Visalia, CA 93291
	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 AAF-McQuay, Inc., et al., from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Treated Groundwater	36° 20' 4.236" N 36° 20' 1.84"	119° 22' 52.0674" W 119° 22' 19.70"	Mill Creek Ditch
002	Treated Groundwater	--	--	Groundwater underlying agricultural fields
003	Treated Groundwater	36° 20' 1.8594" N 36° 20' 4.19"	119° 22' 19.56" W 119° 22' 52.11"	Mill Creek Ditch

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	**26/27/28 May 2010**
This Order shall become effective on:	**26/27/28 May 2010**
This Order shall expire on:	**25 May 2015**
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	**26 November 2014**

THEREFORE, IT IS HEREBY ORDERED, that Order No. R5-2005-0059 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.

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 26/27/28 May 2010.

_____

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	AAF-McQuay, Inc., et al.
Name of Facility	Groundwater Remediation System
Facility Address	Goshen Avenue and Shirk Road
	Visalia, CA 93291
	Tulare County
Facility Contact, Title, and Phone	Paul M. Heim, Division Counsel and Assistant Secretary (763) 551-5671
Mailing Address	13600 Industrial Park Boulevard Minneapolis, MN 55441
Type of Facility	Groundwater extraction and cleanup facility
Facility Design Flow	1.44 million gallons per day (mgd) from Granular Activated Carbon (GAC) Unit No. ~~28B5/~~28G1 1.44 mgd from GAC Unit No. 28E3

II. FINDINGS

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

A. Background. AAF-McQuay, Inc., (hereinafter Discharger) is currently discharging pursuant to Order No. R5-2005-0059, National Pollutant Discharge Elimination System (NPDES) Permit No. CA0082511. The Discharger submitted a Report of Waste Discharge, dated 28 October 2009 and applied for a NPDES permit renewal to discharge up to 2.8 million gallons per day of treated groundwater from the Groundwater Remediation System, hereinafter Facility. The application was deemed complete on 18 February 2010.

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

B. Facility Description. The Discharger owns and operates the groundwater remediation system. The groundwater remediation system consists of two dual-vessel granular activated carbon (GAC) treatment systems. Treated groundwater is discharged from Discharge Points 001 and 003 (see table on cover page) to the Mill Creek Ditch, a water of the United States, and a tributary to Cross Creek, within the South Valley Floor Hydrologic Unit, Kaweah Delta Hydrologic Area No. 558.10. Order No. R5-2005-0059 identifies the receiving water as North Branch Mill Creek Ditch. The receiving water remains the same, but the name Mill Creek Ditch is used in this Order to correspond with the name listed in the United States Geological Survey Geographic Names Information System (GNIS). Treated groundwater is also diverted and discharged from both of the treatment systems to nine agricultural fields. Attachment B provides a map

of the area around the Facility. Attachment C provides a flow schematic of the Facility and a map of the parcels that are irrigated with treated groundwater.

C. Legal Authorities. This Order is issued pursuant to section 402 of the Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the California Water Code (CWC; 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 G are also incorporated into this Order.

E. California Environmental Quality Act (CEQA). Under CWC section 13389, this action to adopt a 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, 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, Second Edition (Revised January 2004), for the Tulare Lake Basin* (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 Mill Creek Ditch, but does identify present and potential uses for Valley Floor Waters. Cross Creek is a Valley Floor Water. Discharges to Mill Creek Ditch must be protective of the beneficial uses of Cross Creek.

The beneficial uses of the groundwaters of the Kaweah Basin are municipal and domestic (MUN), agricultural supply (AGR), industrial service supply (IND), industrial process supply (PRO), water contact recreation (REC-1), and non-contact water recreation (REC-2).

Thus, as discussed in detail in the Fact Sheet, beneficial uses applicable to Mill Creek Ditch and groundwater are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 003	Mill Creek Ditch Cross Creek, Valley Floor Waters	AGR, IND, PRO, REC-1, REC-2, WARM, WILD, RARE, GWR
002	Groundwater	MUN, AGR, IND, PRO

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. Not applicable

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 volatile organic compounds and flow. The WQBELs consist of restrictions on pH and acute toxicity. The Order also contains performance based effluent limitations required by the Basin Plan for EC, chloride, and boron. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements.

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 402(o)(2) and 303(d)(4) 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 where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in Order No. R5-2005-0059.

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 of this Order (Attachment F).

S. Provisions and Requirements Implementing State Law. The provisions/requirements in sections V.B, and portions of 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 (Attachment F).

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 of this Order (Attachment F).

III. DISCHARGE PROHIBITIONS

A. Discharge of material other than treated groundwater from the investigation and cleanup of groundwater pollution, discharge of treated groundwater from the investigation of groundwater where other pollutants exist in the groundwater, at a location or in a manner different from that described in the Findings, or discharge of untreated groundwater to agricultural fields different from that described in Provision VI.C.3.b. is prohibited.

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

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

D. Discharge of waste classified as ‘hazardous’ as defined in Section 2521(a) of Title 23, 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 Points 001, 002 and 003

1. Final Effluent Limitations – Discharge Points 001, 002 and 003

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Points 001, 002 and 003, with compliance measured at Monitoring Locations EFF-001 and EFF-003, as described in the Monitoring and Reporting Program:

Table 6. Effluent Limitations

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	Standard Units	--	--	6.5	8.3
Electrical Conductivity @ 25°C	µmhos/cm	--	500/1000[1]	--	--
Boron	mg/L	1.0	--	--	--
Chloride	mg/L	175	--	--	--
Chloromethane	µg/L	--	<0.5	--	--
Chloroform	µg/L	--	<0.5	--	--
1,1-Dichloroethane	µg/L	--	<0.5	--	--
1,1-Dichloroethylene	µg/L	--	<0.5	--	--
cis-1,2-Dichloroethylene	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	--	--

[1] Maximum effluent EC concentration must be less than 1000 µmhos/cm or 500 µmhos/cm greater than source water EC, whichever is lower.

b. The maximum daily flow from GAC Unit No. ~~28B5/~~28G1 shall not exceed 1.44 mgd.

c. The maximum daily flow from GAC Unit No. 28E3 shall not exceed 1.44 mgd.

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

i. 70%, for any one bioassay; and
ii. 90%, for the median of any three or more consecutive bioassays.

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 Mill Creek Ditch:

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. [Note: AAF-McQuay does not discharge water with fecal coliform content. Sampling for fecal coliform is not warranted]

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, or 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; and

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

11. **Radioactivity.** 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.

12. **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.

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

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

15. **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.

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

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

18. **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 NTUs 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

The discharge, in combination with other sources, shall not cause underlying groundwater 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 applicable 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. The discharge of any radiological, chemical or biological warfare agent or high-level, radiological waste is prohibited.

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

j. Safeguard to electric power failure:

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

ii. Upon written request by the 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 Facility 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.

k. 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.j. 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.

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

m. 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, 13385, 13386, and 13387.

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

o. 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.

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

b. 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.

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

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 a pattern of toxicity exceeding the numeric toxicity monitoring trigger during accelerated monitoring established in this Provision, 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. **Initial Investigative TRE Work Plan.** By **26 August 2010**, the Discharger shall submit to the Central Valley Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer. This should be a one to two page document including, at a minimum:

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

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

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

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

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

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 a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.

(b) If the source(s) of the toxicity is easily identified (e.g., temporary facility 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 **sixty (60) days** of notification by the laboratory of any test results exceeding the monitoring trigger during accelerated monitoring, 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 include an implementation schedule and must be developed in accordance with USEPA guidance[1].

3. Best Management Practices and Pollution Prevention

a. Application of treated groundwater to the agricultural fields shall be at reasonable rates considering the crop, soil, climate, and irrigation management system.

b. The discharge of any untreated water from well development, redevelopment, or tests of well pump repairs to the agricultural fields shall 1) be only for a maximum of 10 days per calendar year, 2) be limited to 100,000 gallons per five days, and 3) shall not exceed a duration of five days per event.

4. Construction, Operation and Maintenance Specifications

a. The Discharger is currently operating under the *Operation and Maintenance Plan* (O&M Plan), dated 30 August 2005. The Discharger must maintain the O&M

[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 Workplan.

Plan, and, in accordance with the Monitoring and Reporting Program, submit annually any changes to the O&M Plan.

b. 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 4, Title 27; Chapter 15, Division 4, Title 23; and Division 4.5, Title 22 of the CCR and approved by the Executive Officer.

c. 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.

5. Special Provisions for Municipal Facilities (POTWs Only)

Not applicable

6. Other Special Provisions

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

b. 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. Boron Average Monthly Effluent Limitation. Compliance with the average monthly effluent limitation for boron shall be determined by averaging the boron results in effluent samples collected over a calendar month. If only a single sample is taken and analyzed for boron during a calendar ~~month~~quarter, the single result will be considered as the average monthly boron concentration for all months in that quarter. [The proposed WDRs require quarterly sampling for boron.]

B. Chloride Average Monthly Effluent Limitation. Compliance with the average monthly effluent limitation for chloride shall be determined by averaging the chloride results in effluent samples collected over a calendar month. If only a single sample is taken and analyzed for chloride during a calendar ~~month~~quarter, the single result will be considered as the average monthly chloride concentration for all months in that quarter. [The proposed WDRs require quarterly sampling for chloride.]~~.~~

C. Electrical Conductivity @ 25°C (EC). The maximum daily effluent limitation for EC of 500 µmhos/cm plus source water shall be determined using the influent EC for the same day the effluent EC sample is taken, for each treatment system. The lower of that number and 1,000 µmhos/cm shall be used to determine compliance with the EC effluent limitation. If only a single sample is taken and analyzed for EC during a calendar quarter, the single result will be considered as the maximum daily EC for all days in that quarter. [The proposed WDRs require quarterly sampling for EC.] analyses.].

~~D.~~**pH Effluent Limitations.** Compliance with the effluent limitations for pH shall be ascertained by grab samples. Sample hold times for pH must meet the holding time specified in 40 CFR 136. If only a single sample is taken and analyzed for pH during a calendar month, the single result will be used to determine pH compliance for all days in that month. [The proposed WDRs require monthly sampling for pH.]

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 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".

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.

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

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

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.

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

No Observed Effect Concentration (NOEC) – add definition

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;

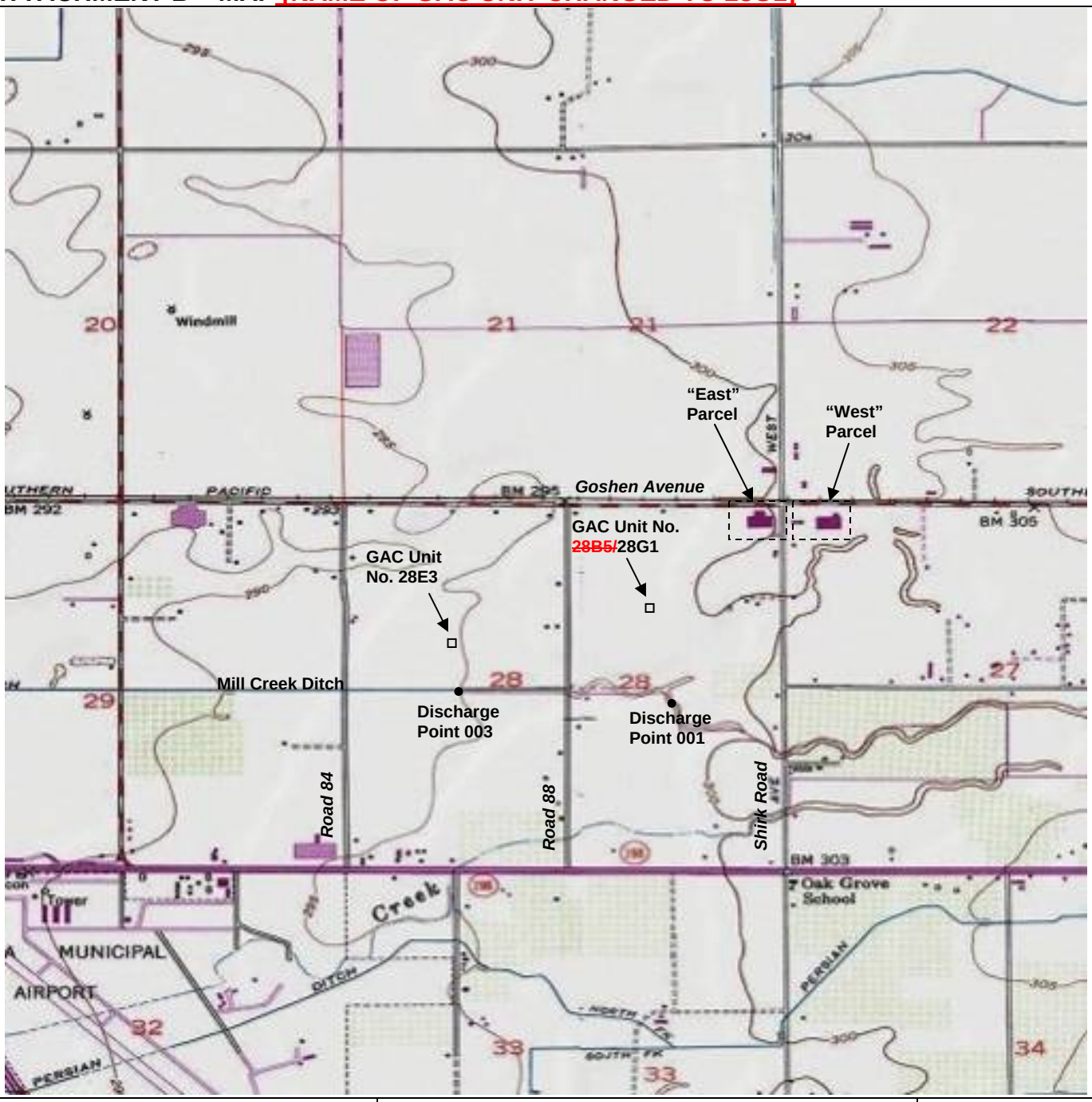
μ is the arithmetic mean of the observed values; and

n is the number of samples.

Toxicity Reduction Evaluation (TRE)

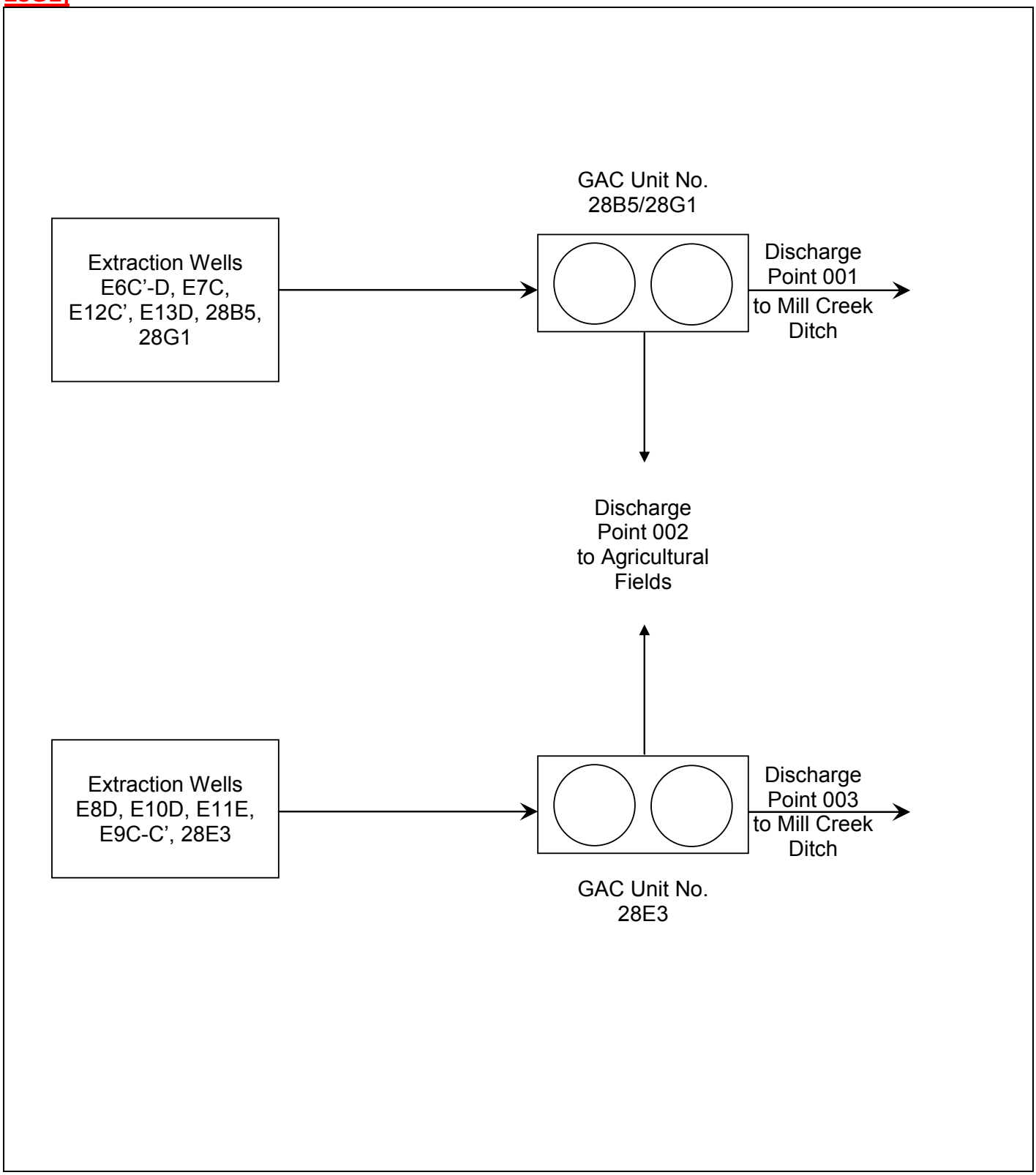
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection 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 [NAME OF GAC UNIT CHANGED TO 28G1]

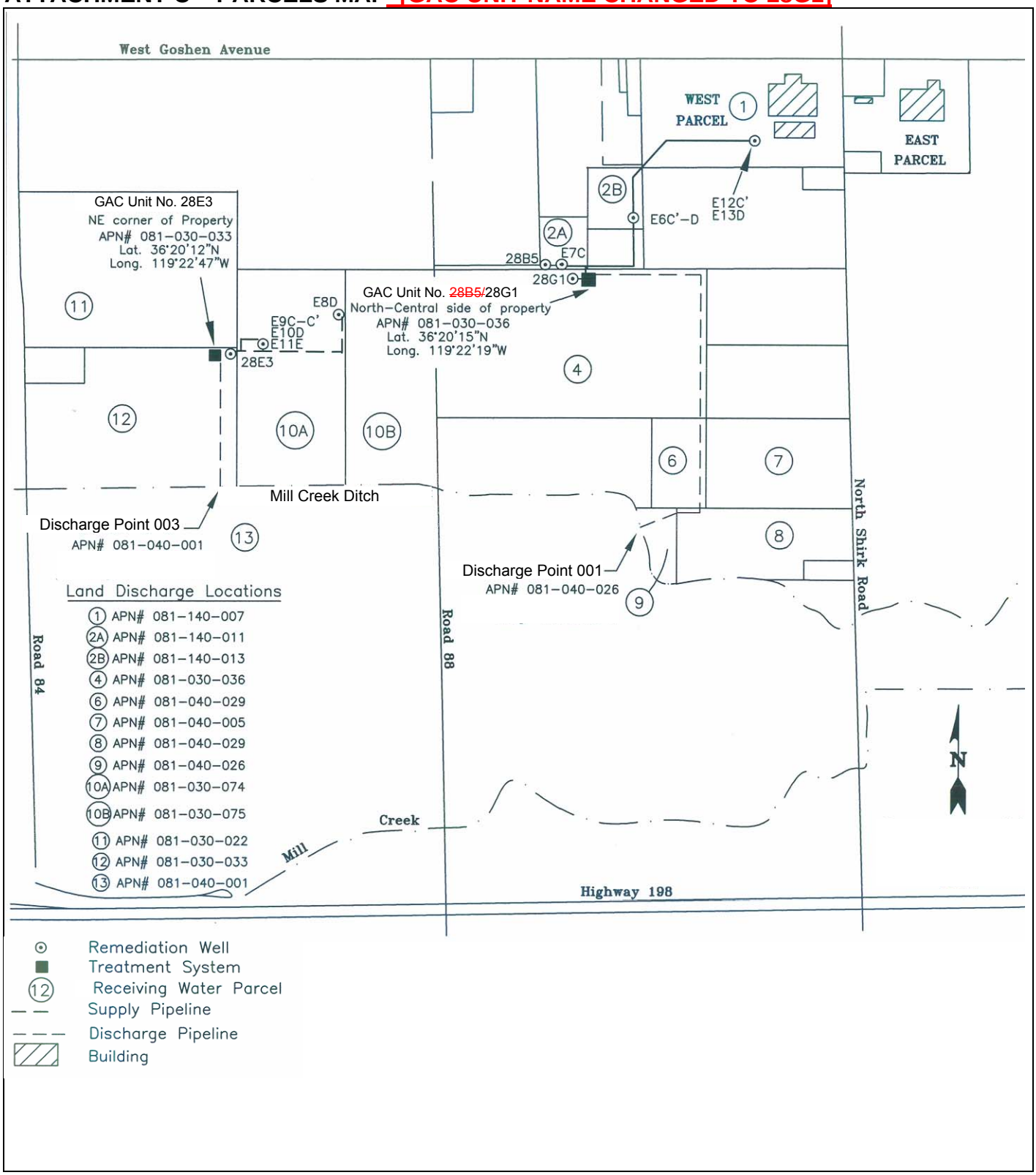


Drawing Reference: GOSHEN AND VISALIA U.S.G.S. TOPOGRAPHIC MAPS 7.5 MINUTE QUADRANGLES *Photorevised 1969* *No scale*	SITE LOCATION MAP AAF-MCQUAY, INC., ET AL. GROUNDWATER REMEDIATION SYSTEM TULARE COUNTY	N W E S

ATTACHMENT C – FLOW SCHEMATIC [PLEASE CHANGE NAME OF GAC UNIT TO 28G1]



ATTACHMENT C – PARCELS MAP [GAC UNIT NAME CHANGED TO 28G1]



ATTACHMENT D – STANDARD PROVISIONS [SECTION NUMBERING OF ATTACHMENT D STARTED WITH II. CHANGE NUMBERING TO START WITH I TO MATCH REFERENCES ELSEWHERE IN THIS ORDER]

~~II.~~ 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

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

d. “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).)

~~III.~~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.)

~~IV.~~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).)

~~V.~~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).)

~~VI.~~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).) [This does not apply to the subject outfalls]

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).) [this does not apply to the subject outfalls]

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).)

~~VII.~~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

~~VIII.~~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).)

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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 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 this Central Valley Water Board.

B. Effluent samples shall be taken downstream of the last addition of waste to the treatment system 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.

D. The Discharger shall institute a Quality Assurance-Quality Control Program for any onsite field measurements such as pH. A manual containing the steps followed in this program must be kept ~~onsite~~ in AAF-McQuay's Consultant's office and shall be available for inspection by Central Valley Water Board staff. The Discharger must demonstrate sufficient capability (qualified and trained employees, properly calibrated and maintained field instruments, etc.) to adequately perform these field measurements. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Central Valley Water Board.

E. 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. [Note: the sum of the maximum well yields per system does not exceed 80% of the permitted flow rate. Therefore, costly flowmeter calibration is unwarranted.

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

G. The results of all monitoring required by this Order shall be reported to the Central Valley Water Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows, as calculated from periodic totalizer readings made during monitoring visits. Continuous flow data logging is not required.

H. After one year of monitoring at the frequencies prescribed herein and upon request by the Discharger, a reduction of monitoring frequencies may be considered for approval by the Executive Officer.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	A location representative of the influent into GAC Unit No. ~~28B5/~~28G1
	INF-003	A location representative of the influent into GAC Unit No. 28E3
001, 002	EFF-001	A location representative of the final effluent from GAC Unit No. ~~28B5/~~28G1
002, 003	EFF-003	A location representative of the final effluent from GAC Unit No. 28E3
--	RSW-001	100 feet upstream of Discharge Point 001 in Mill Creek Ditch
--	RSW-002	100 feet downstream of Discharge Point 001 in Mill Creek Ditch
--	RSW-003	100 feet downstream of Discharge Point 003 in Mill Creek Ditch
--	MDT-001	A location representative of the discharge from the lead vessel of GAC Unit No. ~~28B5/~~28G1
--	MDT-003	A location representative of the discharge from the lead vessel of GAC Unit No. 28E3

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Locations INF-001 and INF-003

1. The Discharger shall monitor the influent to each treatment system at INF-001 and INF-003 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/~~Month~~Quarter	[6]
Chloromethane	µg/L	Grab	1/Quarter	[1]
Chloroform	µg/L	Grab	1/Quarter	[1]
1,1-Dichloroethane	µg/L	Grab	1/Quarter	[1]
1,1-Dichloroethylene	µg/L	Grab	1/Quarter	[1]
cis-1,2-Dichloroethylene	µg/L	Grab	1/Quarter	[2]
trans-1,2-Dichloroethylene	µg/L	Grab	1/Quarter	[1]
Tetrachloroethylene	µg/L	Grab	1/Quarter	[1]
1,1,1-Trichloroethane	µg/L	Grab	1/Quarter	[1]
1,1,2-Trichloroethane	µg/L	Grab	1/Quarter	[1]
Trichloroethylene	µg/L	Grab	1/Quarter	[1]
Vinyl Chloride	µg/L	Grab	1/Quarter	[1]
1,2-Dichloroethane	µg/L	Grab	1/Quarter	[1]
Other VOCs[3,4,5]	µg/L	Grab	1/Quarter	[1]

[1] Test method used shall be USEPA Method 601, Standard Method (20th edition) 6200C, USEPA Method 8260, or an equivalent method with a practical quantitation limit (PQL) no greater than 0.5 µg/L or no greater than the

lowest MLs in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP).

[2] Test method used shall be Standard Method (20th edition) 6200B, USEPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.

[3] All typical volatile organic constituents listed in Appendix 4 of the SIP.

[4] VOCs = Volatile Organic Compounds

[5] Monitoring for acrolein, acrylonitrile, and dichloromethane shall achieve MLs at least as low as the following: 100 µg/L for acrolein, 5 µg/L for acrylonitrile, and 5 µg/L for dichloromethane.

[6] Pollutants shall be analyzed using the analytical methods described in Title 40, Code of Federal Regulations, Part 136.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Locations EFF-001 and EFF-003

1. Records of the volume of discharge to the irrigation fields (Discharge Point 002) shall be maintained on a weekly basis and copies submitted with the quarterly monitoring reports.

2. The Discharger shall monitor treated groundwater from each treatment system at EFF-001 and EFF-003 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	Measured	~~1/Week~~ 2/Month	
pH	standard units	Grab	1/Month	[7]
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Quarter	[7]
Dissolved Oxygen	mg/L	Grab	1/Month	[7]
Hardness as $CaCO_3$	mg/L	Grab	1/Quarter	[7]
Boron	mg/L	Grab	1/Quarter	[7]
Chloride	mg/L	Grab	1/Quarter	[7]
Copper, Total	µg/L	Grab	1/Quarter	[7]
Chloromethane	µg/L	Grab	1/Month	[1]
Chloroform	µg/L	Grab	1/Month	[1]
1,1-Dichloroethane	µg/L	Grab	1/Month	[1]
1,1-Dichloroethylene	µg/L	Grab	1/Month	[1]
cis-1,2-Dichloroethylene	µg/L	Grab	1/Month	[2]
trans-1,2-Dichloroethylene	µg/L	Grab	1/Month	[1]
Tetrachloroethylene	µg/L	Grab	1/Month	[1]
1,1,1-Trichloroethane	µg/L	Grab	1/Month	[1]
1,1,2-Trichloroethane	µg/L	Grab	1/Month	[1]
Trichloroethylene	µg/L	Grab	1/Month	[1]
Vinyl Chloride	µg/L	Grab	1/Month	[1]
1,2-Dichloroethane	µg/L	Grab	1/Month	[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Other VOCs[3,4,5]	µg/L	Grab	1/Quarter	[1]
Priority Pollutants metals[6,8]	vary	Grab	1/Year	[7,9]
Priority Pollutants VOCs, sVOCs, Pesticides	Vary	Grab	2/Five Years	[7,]

[1] Test method used shall be USEPA Method 601, Standard Method (20th edition) 6200C, USEPA Method 8260, or an equivalent method with a practical quantitation limit (PQL) no greater than 0.5 µg/L or no greater than the lowest MLs in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP).
[2] Test method used shall be Standard Method (20th edition) 6200B, USEPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.
[3] All typical volatile organic constituents listed in Appendix 4 of the SIP.
[4] VOCs = Volatile Organic Compounds
[5] Monitoring for acrolein, acrylonitrile, and dichloromethane shall achieve MLs at least as low as the following: 100 µg/L for acrolein, 5 µg/L for acrylonitrile, and 5 µg/L for dichloromethane.
[6] Concurrent with receiving surface water sampling.
[7] Pollutants shall be analyzed using the analytical methods described in Title 40, Code of Federal Regulations, Part 136.
[8] 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.
[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, for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by USEPA method 1630/1631 (Revision E) with a method detection limit of 0.2 ng/L for total mercury.

V. WHOLE EFFLUENT TOXICITY (WET) TESTING REQUIREMENTS

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

1. *Monitoring Frequency* – The Discharger shall perform **annual** acute toxicity testing.

2. *Sample Types* – For static non-renewal and static renewal testing, the samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring locations EFF-001 and EFF-003.

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

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

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

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

1. *Monitoring Frequency* – The Discharger shall perform **annual** three species chronic toxicity testing. [Note: Over the past permit life, only the 28G1 system had a result of reduced growth rate. None of the other samples exhibited statistically significant toxicity. AAF-McQuay requests that the 28E3 system be sampled at the same frequency as the current permit. Reduction of 28G1 testing frequency may be requested at a later time, in accordance with the general conditions.]

2. *Sample Types* – Effluent samples shall be grab samples and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring locations EFF-001 and EFF-003. The receiving water control shall be a grab sample obtained from the RSW-001 sampling location, as identified in this Monitoring and Reporting Program. In the absence of receiving water, laboratory water may be used as a control.

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:

   ~~1.~~• The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);

   ~~2.~~• The fathead minnow, *Pimephales promelas* (larval survival and growth test); and

   ~~3.~~• The green alga, *Selenastrum capricornutum* (growth test).

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

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

7. *Dilutions* – The chronic toxicity testing shall be performed using the dilution series identified in the table, below. The receiving water control shall be used as the diluent (unless the receiving water is toxic).

Table E-4. Chronic Toxicity Testing Dilution Series

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

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

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

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

c. The results expressed in TUc, measured as 100/NOEC, and also measured as 100/LC50, 100/EC25, 100/IC25, and 100/IC50, as appropriate.

d. The statistical methods used to calculate endpoints;

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

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

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

Additionally, the quarterly 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** and reported as percent survival.

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

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 Locations RSW-001, RSW-002, and RSW-003

1. Receiving water monitoring shall not be required when the discharge comprises the entire flow in the receiving water.

2. The Discharger shall monitor Mill Creek Ditch at RSW-001, RSW-002, and RSW-003 as follows:

Table E-5. Receiving Water Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Estimated Flow	cfs	Estimation	1/Month	--
pH	standard units	Grab	1/Month	--
Electrical Conductivity @ 25°C	µmhos/cm	Grab	1/Month	--
Dissolved Oxygen	mg/L	Grab	1/Month	--
Hardness	mg/L	Grab	1/Month	--
Copper	µg/L	Grab	1/Month	--
Chloromethane	µg/L	Grab	1/Month	1
Chloroform	µg/L	Grab	1/Month	1
1,1-Dichloroethane	µg/L	Grab	1/Month	1
1,1-Dichloroethylene	µg/L	Grab	1/Month	1
cis-1,2-Dichloroethylene	µg/L	Grab	1/Month	2
trans-1,2-Dichloroethylene	µg/L	Grab	1/Month	1
Tetrachloroethylene	µg/L	Grab	1/Month	1
1,1,1-Trichloroethane	µg/L	Grab	1/Month	1
1,1,2-Trichloroethane	µg/L	Grab	1/Month	1
Trichloroethylene	µg/L	Grab	1/Month	1
Vinyl Chloride	µg/L	Grab	1/Month	1
1,2-Dichloroethane	µg/L	Grab	1/Month	1
Other VOCs[3,4,5]	µg/L	Grab	1/Quarter	1
Priority Pollutants[6]	Vary	Grab	1/Year	7,8
Priority Pollutants VOC, sVOC, Pesticides	Vary	Grab	2/Five Years	7

~~VIII.~~1 Test method used shall be USEPA Method 601, Standard Method (20th edition) 6200C, USEPA Method 8260, or an equivalent method with a practical quantitation limit (PQL) no greater than 0.5 µg/L or no greater than the lowest MLs in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP).

~~IX.~~2 Test method used shall be Standard Method (20th edition) 6200B, USEPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.

~~X.~~3 All typical volatile organic constituents listed in Appendix 4 of the SIP.

~~XI.~~4 VOCs = Volatile Organic Compounds

~~XII.~~5 Monitoring for acrolein, acrylonitrile, and dichloromethane shall achieve MLs at least as low as the following: 100 µg/L for acrolein, 5 µg/L for acrylonitrile, and 5 µg/L for dichloromethane.

~~XIII.~~6 Concurrent with effluent sampling

~~XIV.~~7 Pollutants shall be analyzed using the analytical methods described in Title 40, Code of Federal Regulations, Part 136.

~~XV.~~8 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, for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by USEPA method 1630/1631 (Revision E) with a method detection limit of 0.2 ng/L for total mercury.

IX. OTHER MONITORING REQUIREMENTS

A. Mid-Treatment Monitoring

1. Monitoring Locations MDT-001 and MDT-003

The Discharger shall monitor the mid-treatment of each GAC treatment system at MDT-001 and MDT-003 as follows.

Table E-6. Mid-Treatment Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Chloromethane	µg/L	Grab	1/Quarter	[1]
Chloroform	µg/L	Grab	1/Quarter	[1]
1,1-Dichloroethane	µg/L	Grab	1/Quarter	[1]
1,1-Dichloroethylene	µg/L	Grab	1/Quarter	[1]
cis-1,2-Dichloroethylene	µg/L	Grab	1/Quarter	[2]
trans-1,2-Dichloroethylene	µg/L	Grab	1/Quarter	[1]
Tetrachloroethylene	µg/L	Grab	1/Quarter	[1]
1,1,1-Trichloroethane	µg/L	Grab	1/Quarter	[1]
1,1,2-Trichloroethane	µg/L	Grab	1/Quarter	[1]
Trichloroethylene	µg/L	Grab	1/Quarter	[1]
Vinyl Chloride	µg/L	Grab	1/Quarter	[1]
1,2-Dichloroethane	µg/L	Grab	1/Quarter	[1]
Other VOCs[3,4,5]	µg/L	Grab	1/Quarter	[1]

~~E.~~1 Test method used shall be USEPA Method 601, Standard Method (20th edition) 6200C, USEPA Method 8260, or an equivalent method with a practical quantitation limit (PQL) no greater than 0.5 µg/L or no greater than the lowest MLs in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP).

~~F.~~2 Test method used shall be Standard Method (20th edition) 6200B, USEPA Method 8260, or an equivalent method with a PQL no greater than 0.5 µg/L.

~~G.~~3 All typical volatile organic constituents listed in Appendix 4 of the SIP.

~~H.~~4 VOCs = Volatile Organic Compounds

~~I.~~5 Monitoring for acrolein, acrylonitrile, and dichloromethane shall achieve MLs at least as low as the following: 100 µg/L for acrolein, 5 µg/L for acrylonitrile, and 5 µg/L for dichloromethane.

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 from 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. The Discharger shall report to the Central Valley Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "*Emergency Planning and Community Right to Know Act*" of 1986.

B. Self Monitoring Reports (SMRs)

1. The Discharger is required to submit self-monitoring reports (SMRs) electronically using the State Water Board's California Integrated Water Quality System (CIWQS) website (http://ciwqs.waterboards.ca.gov/). The Discharger shall submit both paper SMRs and electronic SMRs concurrently until notification is given that paper SMRs

are no longer required. In the event there will be service interruption for electronic submittal, the CIWQS website will provide additional directions for self-monitoring report 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 quarterly SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

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

Table E-7. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
1/Week	First Sunday of the calendar month following the permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	Submit with quarterly SMR
1/Month	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	First day of calendar month through last day of calendar month	Submit with quarterly SMR
1/Quarter	Closest of 1 January, 1 April, 1 July, or 1 October following (or on) permit effective date	1 January through 30 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	1 May 1 August 1 November 1 February
1/Year	1 January following (or on) permit effective date	1 January through 31 December	Submit with quarterly SMR

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

5. Multiple Sample Data. When determining compliance with an average monthly effluent limitation or maximum daily effluent limitation 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.

6. 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 report all effluent limitations violations through the CIWQS website.

c. Paper SMRs, when required, must be submitted to the Central Valley Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

Regional Water Quality Control Board

Central Valley Region
1685 E Street
Fresno, CA 93706

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 general responsibilities of all persons employed at the Facility.

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

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

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

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	5D542001002
Discharger	AAF-McQuay, Inc., et al.
Name of Facility	Groundwater Remediation System
Facility Address	Goshen Avenue and Shirk Road Visalia, CA 93291 Tulare County
Facility Contact, Title and Phone	Paul M. Heim, Division Counsel and Assistant Secretary (763) 551-5671
Authorized Person to Sign and Submit Reports	Paul M. Heim, Division Counsel and Assistant Secretary (763) 551-5671
Mailing Address	13600 Industrial Park Boulevard Minneapolis, MN 55441
Billing Address	SAME
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	1.44 million gallons per day (mgd) from granular activated carbon (GAC) Unit No. ~~28B5/~~28G1 1.44 mgd from GAC Unit No. 28E3
Facility Design Flow	1.44 mgd from GAC Unit No. ~~28B5/~~28G1 1.44 mgd from GAC Unit No. 28E3
Watershed	South Valley Floor Hydrologic Unit, Kaweah Delta Hydrologic Area (No. 558.10)
Receiving Water	Mill Creek Ditch
Receiving Water Type	Canal/Ditch

A. AAF-McQuay, Inc., is the owner and operator of the Groundwater Remediation System, hereinafter Facility. G&H Enterprises, LLC; Danny S. Freitas and Jeannette Freitas;

Fewer Ranch; Clifton G. Harris III & Charmaine L. Harris; Robert and Sabrina Shahan; Bernard te Velde Trust; and Manuel Martin Costa Jr., Eunice L. Costa & Manuel Martin Costa III, as property owners where groundwater is extracted or discharged, or owners and lease holders who accept treated groundwater for irrigation, are secondary dischargers (collectively all are hereafter referred to as Discharger).

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

B. The Facility discharges wastewater to Mill Creek Ditch, a water of the United States, and is currently regulated by Order No. R5-2005-0059, which was adopted on 29 April 2005. The terms and conditions of the current Order have been administratively extended and remain in effect until new Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.

C. The Discharger filed a report of waste discharge and submitted an application for renewal of its WDRs and NPDES permit on 28 October 2009. Supplemental information was requested on 29 December 2009 and received on 18 February 2010. A site visit was conducted on 22 December 2009, to observe operations and collect additional data to develop permit limitations and conditions.

II. FACILITY DESCRIPTION

The Facility is in the City of Visalia [Portions of the facility are located outside the City limits, especially the 28G1 treatment unit and several wells. Revision of this description is requested.]in Section 28, Township 18 South, Range 24 East, Mount Diablo Base and Meridian, as shown in Attachment B, a part of this Order. From 1966 to 1982, the Bostitch Division of Textron, Inc., manufactured nail and staple products and fastening devices at 6941 West Goshen Avenue, the "west" parcel. In 1986, The Stanley Works purchased the property and, as Stanley Bostitch, Inc., a Rhode Island corporation, started manufacturing coiled nail products and discharged rinse waters containing residual solution from acid and alkaline baths into dry wells. Stanley Bostitch, Inc., discontinued operation of the facility in 2001.

From 1961 to 1974, McQuay Perfex Corporation manufactured heating, ventilation, and air conditioning equipment at 6707 West Goshen Avenue, the "east" parcel. From 1976 to 1982, SSP Agricultural Equipment, Inc., manufactured wind machine parts at the plant. SnyderGeneral Corporation assumed the assets and liabilities of McQuay Perfex Corporation in 1984. In 1994, the O.Y.L. Group acquired SnyderGeneral Corporation in a stock purchase. The acquisition resulted in a name change from SnyderGeneral to AAF-McQuay, Inc. From 1982 to 1996, SunStar Plastics Engineering Corporation and Pepco Water Conservation Products, Inc., used the plant to manufacture extruded plastic products.

The Facility includes two dual-vessel GAC treatment systems, up to 11 extraction wells, and three discharge points.

A. Description of Wastewater Treatment or Controls

The groundwater remediation systems consist of two dual-vessel GAC treatment units. GAC Unit No~~. 28B5/~~28G1 treats groundwater extracted from extraction wells 28B5, 28G1, E13D, ~~E13C'~~E12C', E6C'-D, and E7C. The treatment system is on property owned by Fewer Ranch. Treated groundwater is pumped at a maximum design flow of 1.44 mgd and discharged into Mill Creek Ditch at Discharge Point 001.

GAC Unit No. 28E3 treats groundwater extracted from extraction wells E8D, E10D, E11E, E9C-C', and 28E3. The treatment system is on property owned by Bernard te Velde Trust. Treated groundwater is pumped at a maximum design flow of 1.44 mgd and discharged into Mill Creek Ditch at Discharge Point 003. Discharge from both treatment systems can also be diverted and used for irrigation in nearby agricultural fields.

B. Discharge Points and Receiving Waters

1. Discharge to Mill Creek Ditch from GAC Unit No. ~~28B5/~~28G1 (Discharge Point 001) is in Section 28, T18S, R24E, MDB&M, at a point Latitude 36° 20' 1.84"~~36° 20' 4.236~~" N and Longitude~~ 119° 22' 52.0674~~" 119° 22' 19.70 W. Discharge to Mill Creek Ditch from GAC Unit No. 28E3 (Discharge Point 003) is in Section 28, T18S, R24E, MDB&M, at a point Latitude 36° 20' ~~1.8594~~ 4.19" N and Longitude 119° 22' ~~19.56~~ 52.11" W. Discharges to agricultural fields from GAC Unit No. ~~28B5/~~28G1 occur at Tulare County Assessor's Parcel Numbers 081-030-036, 081-040-029, 081-040-005, 081-040-029, and 081-040-023. Discharges to agricultural fields from GAC Unit No. 28E3 occur at Tulare County Assessor's Parcel Numbers 081-030-071, 081-030-075, 081-030-022, and 081-030-033.

2. The RWD describes the discharge from GAC Unit Nos. ~~28B5/~~28G1 and 28E3 as having average flows of 0.95 mgd and 0.65 mgd, respectively.

3. Mill Creek Ditch is a water of the United States that flows into to Cross Creek, within the South Valley Floor Hydrologic Unit, Kaweah Delta Hydrologic Area (No. 558.10). The beneficial uses of Cross Creek, which are applicable to Mill Creek Ditch, are provided in Section III.C.1. below.

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

Effluent limitations contained in Order No. R5-2005-0059 for discharges from GAC Unit No. ~~28B5/~~28G1 and GAC Unit No. 28E3, and representative monitoring data from the term of Order No. R5-2005-0059 are as follows:

Table F-2. GAC Unit No. ~~28B5/~~28G1 Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation		Monitoring Data (From 1 January 2006 To 30 June 2009)	
		Average Monthly	Maximum Daily	Highest Average Monthly Discharge	Highest Daily Discharge
Flow	mgd	--	1.44	--	0.88
Electrical Conductivity @ 25°C	µmhos/cm	--	500/1000[1]	440	--
Boron	mg/L	1.0	--	<0.05	--
Chloride	mg/L	175	--	15.7	--
Chloromethane	µg/L	--	<0.5	<0.5	--
Chloroform	µg/L	--	<0.5	<0.5	--
1,1-Dichloroethane	µg/L	--	<0.5	<0.5	--
1,1-Dichloroethylene	µg/L	--	<0.5	<0.5	--
cis-1,2-Dichloroethylene	µg/L	--	<0.5	<0.5	--
Tetrachloroethylene	µg/L	--	<0.5	<0.5	--
1,1,1-Trichloroethane	µg/L	--	<0.5	<0.5	--
1,1,2-Trichloroethane	µg/L	--	<0.5	<0.5	--
Trichloroethylene	µg/L	--	<0.5	<0.5	--

~~a.~~[1] Maximum effluent EC concentration must be less than 1000 µmhos/cm or 500 µmhos/cm greater than source water EC, whichever is lower.

Table F-3. GAC Unit No. 28E3 Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation		Monitoring Data (From 1 January 2006 To 30 June 2009)	
		Average Monthly	Maximum Daily	Highest Average Monthly Discharge	Highest Daily Discharge
Flow	mgd	--	1.44		0.56
Electrical Conductivity @ 25°C	µmhos/cm	--	500/1000[1]	625	--
Boron	mg/L	1.0	--	0.297	--
Chloride	mg/L	175	--	18.9	--
Chloromethane	µg/L	--	<0.5	<0.5	--
Chloroform	µg/L	--	<0.5	<0.5	--
1,1-Dichloroethane	µg/L	--	<0.5	<0.5	--
1,1-Dichloroethylene	µg/L	--	<0.5	6.15	--
cis-1,2-Dichloroethylene	µg/L	--	<0.5	<0.5	--
Tetrachloroethylene	µg/L	--	<0.5	<0.5	--
1,1,1-Trichloroethane	µg/L	--	<0.5	<0.5	--
1,1,2-Trichloroethane	µg/L	--	<0.5	<0.5	--
Trichloroethylene	µg/L	--	<0.5	6.45	--

~~A.~~[1] Maximum effluent EC concentration must be less than 1000 µmhos/cm or 500 µmhos/cm greater than source water EC, whichever is lower.

D. Compliance Summary

Order No. R5-2005-0059 contains effluent limitations for 1,1-Dichloroethylene (1,1-DCE) and Trichloroethylene (TCE). Review of effluent monitoring data from GAC Unit No. 28E3 from January 2006 through June 2009 indicates there were six instances where the 1,1-DCE effluent limitation was exceeded and four instances where the TCE effluent limitation was exceeded. According to the Discharger, the first 1,1-DCE exceedance occurred due to possible vandalism. The first quarter 2007 self-monitoring report states the mid-treatment sample taken on the same day as the effluent sample in question, from GAC Unit No. 28E3, did not contain reportable VOC concentrations. The report also states one of the system's valves was found in the open position, allowing groundwater to bypass the polish vessel. The Discharger noted the gate of the system's security fence was found open. The Discharger replaced the padlocked closure mechanisms with chains and padlock, and stated it would check the valve positions as part of all future sampling and inspection visits.

According to a letter from the Discharger dated 1 July 2008, the other five exceedances of 1,1-DCE and the TCE exceedances were most likely caused due to the Discharger's practice of collecting effluent samples at the point where the treated groundwater is discharged to land or surface water, rather than at the end of the treatment system. Following three effluent samples with reportable concentrations of VOCs, the Discharger exchanged the carbon on the treatment system. However, subsequent samples still contained reportable concentrations of VOCs. According to the Discharger, upon further review of the farming operations, the Discharger learned the property owner's irrigation well, 28F2, which has been operated in the past and is known to produce water with detectable concentrations of VOCs, had been used since March 2009 as a supplemental water source to meet irrigation demands. The Discharger subsequently began taking effluent samples from the end of the of the treatment system.

No other effluent limitation exceedances were documented from either treatment system.

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.** The Central Valley Water Board adopted a *Water Quality Control Plan, Second Edition (Revised January 2004), for the Tulare Lake Basin* (Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Board Resolution No. 88-63 requires that, with certain exceptions, the Central Valley Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan.

   The Basin Plan 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. 40 CFR 131.2 and 131.10, require that 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 be considered when setting water quality standards. 40 CFR 131.3(e), defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. 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.

   Mill Creek Ditch is an effluent dominated water body that discharges to Cross Creek, which flows into a series of canals that ultimately drain into the Tulare Lakebed. The Basin Plan does not specifically identify beneficial uses for Cross Creek, but lists beneficial uses for Valley Floor Waters as follows: agricultural supply (AGR); industrial service supply (IND); industrial process supply (PRO); water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); wildlife habitat (WILD); support of rare, threatened, or endangered species (RARE); and groundwater recharge (GWR). Cross Creek is a Valley Floor Water.

Discharges to Mill Creek Ditch must be protective of the beneficial uses of Cross Creek.

The quality of water in Mill Creek Ditch must be protective of the designated beneficial uses of Cross Creek. Further, Mill Creek Ditch is a water of the United States, and the water therein must be maintained to be "fishable and swimable".

The beneficial uses of the groundwaters of the Kaweah Basin, as identified in the Basin Plan, are municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), industrial process supply (PRO), water contact recreation (REC-1), and non-contact water recreation (REC-2).

2. **Thermal Plan.** Not applicable

3. **Bay-Delta Plan.** Not applicable

4. **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.

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

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

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

8. **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).

9. **Emergency Planning and Community Right to Know Act.** Not applicable

10. **Storm Water Requirements.** Not applicable

11. **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*." Mill Creek Ditch and Cross Creek are not listed as impaired.

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 Mill Creek Ditch and Cross Creek.

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, that are applicable to the discharge are discussed herein.

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 "*Policy for Application of Water Quality Objectives*") (40 CFR 122.44(d)(1)(vi)(A), (B) or (C)), or (3) an indicator parameter.

The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, discoloration, radionuclides, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life*." (Basin Plan at III-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 minimum, "…*water designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs)*" in Title 22 of CCR. The Basin Plan further states that, to protect all beneficial uses, the Central Valley Water Board may apply limits more stringent than MCLs. The narrative tastes and odors objective states: *"Water shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses*."

A. Discharge Prohibitions

1. Prohibition A concerns a change in manner or location of the discharge, or a change in its character, from what was provided in the Report of Waste Discharge and evaluated for compliance with the CWC and CWA, and from what is allowed in the Findings and Provision VI.C.3.b.

2. Prohibition 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 to surface waters.

3. Prohibition C is based on Basin Plan water quality objectives, which generally prohibit conditions that create a nuisance.

4. Prohibition D concerns two categories of waste that are subject to full containment as prescribed by Title 23 and Title 27 of the CCR and, if discharged have high potential for creating a condition that would violate Prohibition 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 treatment control technology (BPT) represents the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.

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

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

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

The CWA requires USEPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. CWA section 402(a)(1) and 40 CFR 125.3 authorize the use of best professional judgment (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. As described above, the 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 effluent limitations for VOCs in groundwater extracted for cleanup, technology-based 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 best available technology economically achievable (BAT) for all toxic pollutants. For VOCs in groundwater, BAT is consistent with BPTC. With respect to the specific discharges permitted herein, the following have been considered, as required by 40 CFR 125 for establishing best available technology economically achievable (BAT) based upon BPJ:

- **Appropriate technology for category or class of discharges, process employed, engineering aspects of various control techniques** – GAC treatment systems are commonly used to remove VOCs from extracted groundwater at cleanup sites. The systems are designed to remove VOCs to non-detectable concentrations. Properly operated and maintained systems perform reliably and ensure essentially complete removal of VOCs. The Discharger employs GAC systems.

- **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.

- **Age of equipment –** The GAC units were installed in 1993 and have not been substantially upgraded.

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

- **Influent, effluent, and receiving water data** – The monitoring data provided by the Discharger indicates the GAC treatment systems have the ability to 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. R5-2005-0059.

  GAC treatment systems are appropriate technologies for VOC removal from extracted groundwater. Based on the monitoring data provided by the

Discharger, the GAC treatment systems in the Facility consistently meet the effluent limitations set by Order No. R5-2005-0059. 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.a. of this Order. With continued proper operation and maintenance of the Facility, the Discharger will continue to achieve these effluent limitations.

b. Flow. The GAC treatment systems were designed to provide groundwater treatment for up to 1.44 mgd each. Order No. R5-2005-0059 established effluent flow limitations based on the design flow of the GAC treatment systems. This Order carries over the maximum daily effluent limitations established by Order No. R5-2005-0059.

Summary of Technology-based Effluent Limitations
Discharge Points 001, 002, and 003

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

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chloromethane	µg/L	--	--	<0.5	--	--
Chloroform	µg/L	--	--	<0.5	--	--
cis-1,2-Dichloroethylene	µg/L	--	--	<0.5	--	--
1,1-Dichloroethylene	µg/L	--	--	<0.5	--	--
1,1-Dichloroethane	µg/L	--	--	<0.5	--	--
1,1,1-Trichloroethane	µg/L	--	--	<0.5	--	--
1,1,1-Trichloroethane	µg/L	--	--	<0.5	--	--
Tetrachloroethylene	µg/L	--	--	<0.5	--	--
Trichloroethylene	µg/L	--	--	<0.5	--	--

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

As described previously, 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.

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.

a. Receiving Water and Beneficial Uses. The applicable beneficial uses, described in Section III.C. of this Fact Sheet, are summarized below.

Table F-5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 003	Mill Creek Ditch Cross Creek, Valley Floor Waters	AGR, IND, PRO, REC-1, REC-2, WARM, WILD, RARE, GWR
002	Groundwater	MUN, AGR, IND, PRO, REC-1, REC-2.

b. Effluent and Ambient Background Data. The reasonable potential analysis (RPA), as described below in section IV.C.3 of this Fact Sheet, was based on data from January 2006 through June 2009, which includes effluent and ambient background data submitted in self-monitoring reports and the Report of Waste Discharge.

c. Priority Pollutant Metals

i. Hardness. While no effluent limitation for hardness is necessary in this Order, hardness is critical to the assessment of the need for, and the development of, effluent limitations for certain metals. The CTR and the NTR 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 having hardness-dependent criteria include cadmium, copper, chromium III, lead, nickel, silver, and zinc. The equation describing the regulatory criterion, as established in the CTR, is as follows:

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

Where:

H = Hardness
m = metal- and criterion-specific constant
b = metal- and criterion-specific constant

The constants “m” and “b” are specific to both the metal under consideration, and the type of CTR 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 relationship between hardness and the resulting criterion in Equation 1 can exhibit either a downward-facing (i.e., concave downward) or an upward-facing (i.e., concave upward) curve depending on the values of the criterion-specific constants. The curve shapes for acute and chronic criteria for the metals are as follows:

Concave Downward: cadmium (chronic), chromium (III), copper, nickel, and zinc
Concave Upward: cadmium (acute), lead, and silver (acute)

Effluent limitations for the discharge must be set to protect the beneficial uses of the receiving water for all discharge conditions. In the absence of the option of including condition-dependent, "floating" effluent limitations that are reflective of actual hardness conditions at the time of discharge, effluent limitations must be set using a reasonable worst-case condition in order to protect beneficial uses for all discharge conditions. Recent studies indicate that using the lowest recorded receiving water hardness for establishing water quality criteria is not protective of the receiving water under various mixing conditions and could be overly protective for some mixing conditions. The Central Valley Water Board has evaluated these studies and concurs that for some parameters the beneficial uses of the receiving water are fully protected using the lowest hardness value of the effluent. For some parameters, the use of the lowest hardness value of the effluent and either lowest or highest hardness value of the receiving water is protective. However, to use this approach the effluent hardness dataset must be sufficient to ensure adequate protection of the beneficial uses.

For those contaminants where the regulatory criteria exhibit a concave downward relationship as a function of hardness, use of the lowest recorded effluent hardness for establishment of water quality objectives is fully protective of all beneficial uses regardless of whether the effluent or receiving water hardness is higher. Use of the lowest recorded effluent hardness is also protective under all possible mixing conditions between the effluent and the receiving water (i.e., from high dilution to no dilution). Therefore, for cadmium (chronic), chromium (III), copper, nickel, and zinc water quality criteria were calculated for each treatment system using Equation 1 and a reported minimum effluent hardness of 103 and 108 mg/L as $CaCO_3$, for GAC Unit No. ~~28B5/~~28G1 and GAC Unit No. 28E3, respectively, based on ten samples taken from each treatment system between January 2006 and June 2009.

For those metals where the regulatory criteria exhibit a concave upward relationship as a function of hardness, a water quality objective based on either the effluent hardness or the receiving water hardness would not be protective under all mixing scenarios. Instead, a water quality objective that accounts for both the hardness of the receiving water and the effluent is

required. The following equation provides fully protective water quality criteria for those metals that exhibit a concave upward relationship.

$$\text{CTR Criterion} = \left[\frac{m}{H_{rw}} \cdot \left(H_{eff} - H_{rw} \right) + 1 \right] \cdot e^{m \cdot \ln(H_{rw}) + b} \qquad \text{(Equation 2)}$$

Where:

H_{eff} = lowest recorded effluent hardness
Hr_w = lowest recorded receiving water hardness
m = metal- and criterion-specific constant
b = metal- and criterion-specific constant

Order No. R5-2005-0059 did not require the Discharger to collect samples for hardness at the upstream receiving water monitoring location, except for twice during the life of the permit, when the Discharger was required to collect priority pollutant samples. Hardness data for Mill Creek upstream of the City of Visalia Water Conservation Plant was used to calculate the criteria for the concave upward constituents.

Because the lowest receiving water hardness is less than the lowest effluent hardness, using the lowest recorded receiving water hardness increases the difference between the hardness of the two waters and leads to the development of more restrictive water quality criteria. Therefore, for cadmium (acute), lead, and silver (acute) water quality criteria were calculated using Equation 2 with a lowest reported effluent hardness of 103 and 108 mg/L as $CaCO_3$, for GAC Unit Nos. ~~28B5/~~28G1 and 28E3, respectively and a lowest reported receiving water hardness of 18 mg/L as $CaCO_3$, based on ten samples taken at Mill Creek upstream of the City of Visalia Water Conservation Plant between October 2006 and June 2009.

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.** Since Mill Creek Ditch 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 (RP) 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. A summary of the RPA for detected constituents is provided in Attachment G.

b. Constituents with Limited Data. Reasonable potential cannot be determined for the following constituents because effluent data are limited or ambient background concentrations are not available. The Discharger is required to continue to monitor for these constituents in the effluent using analytical methods that provide the best feasible detection limits. When additional data become available, further analysis will be conducted to determine whether to add numeric effluent limitations or to continue monitoring.

i. Mercury. The CTR contains a human health criterion of 0.051 µg/L for waters from which aquatic organisms are consumed. The maximum observed effluent mercury concentration was 0.06 µg/L and 0.11 µg/L from GAC Unit Nos. ~~28B5/~~28G1 and 28E3, respectively. Both results were given as estimated concentrations. The laboratory's quality control data shows total recoverable mercury was detected between a minimum level of 0.20 µg/L and a method detection limit of 0.016 µg/L in the method blank analysis. The estimated concentration given in the laboratory sheet is 0.060000 µg/L. Assuming a sample bias equivalent to the estimated concentration of total recoverable mercury in the method blank, the maximum observed effluent mercury concentrations are equivalent to 0.00 µg/L and 0.05 µg/L from GAC Unit Nos. ~~28B5/~~28G1 and 28E3, respectively. Additional data is needed to determine if mercury is truly present in the effluent. This Order requires the Discharger to conduct priority pollutant monitoring for metals once per year, and for VOCs, sVOCs and pesticides twice during the lifetime of this permit.

c. 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. The following summarizes the RPA analysis for constituents that were detected, but do not exhibit RP.

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

i. **Antimony.** The CTR contains a human health criterion for waters from which aquatic organisms are consumed of 4300 µg/L. The California Primary Maximum Contaminant Level (MCL) is 6 µg/L. The maximum observed concentration of antimony in the effluent from GAC Unit No. ~~28B5/~~28G1 was 0.43 µg/L. The result was reported as an estimated concentration. The effluent from GAC Unit No. 28E3 did not show reportable concentrations of antimony. The reported concentration of antimony is below the most stringent criteria, and, therefore, shows no RP.

ii. **Arsenic.** The CTR contains acute and chronic criteria for freshwater aquatic life of 340 and 150 µg/L, respectively. The California Primary MCL for arsenic is 10 µg/L. The maximum observed concentration in the effluent from GAC Unit No. 28E3 was 1.3 µg/L, reported as an estimated value. The effluent from GAC Unit No. ~~28B5/~~28G1 did not contain reportable concentrations of arsenic. The reported concentration of arsenic is below the most stringent criteria, and, therefore, shows no RP.

iii. **Chromium.** The Primary MCL for chromium is 50 µg/L. The maximum observed effluent concentration of chromium was 3.6 µg/L and an estimated 2.4 µg/L from GAC Unit Nos. ~~28B5/~~28G1 and 28E3, respectively. The reported concentrations are below the most stringent criteria, and, therefore, chromium shows no RP.

iv. **Hexavalent Chromium.** The CTR contains acute and chronic criteria for freshwater aquatic life of 16.3 and 11.4 µg/L, respectively. The maximum observed effluent concentration was 3.2 and 1.8 µg/L from GAC Unit Nos. ~~28B5/~~28G1 and 28E3, respectively. The reported concentrations are below the most stringent criteria, and, therefore, hexavalent chromium shows no RP.

v. **Lead.** The CTR contains acute and chronic criteria for freshwater aquatic life that is hardness dependent. The maximum observed effluent concentration from GAC Unit No. ~~28B5/~~28G1 was 0.48 µg/L, reported as an estimated value. The effluent from GAC Unit No. 28E3 did not contain reportable concentrations of lead. Using the lowest receiving water hardness and the lowest effluent hardness for GAC Unit No. ~~28B5/~~28G1, the acute and chronic criteria for lead were calculated as 65 and 2.5 µg/L, respectively. The maximum observed concentration of lead in the effluent is below the most stringent criteria, and, therefore, lead shows no RP.

vi. **Nickel.** The CTR contains a human health criterion for waters from which aquatic organisms are consumed of 4600 µg/L. The CTR also contains acute and chronic freshwater aquatic life criteria that are hardness dependent. The California Primary MCL for nickel is 100 µg/L. The maximum observed effluent concentration was 0.98 and 0.42 µg/L from GAC Unit Nos. ~~28B5/~~28G1 and 28E3, respectively. Both concentrations were reported as estimated values. Using the lowest receiving water hardness and the lowest effluent hardness from each GAC unit, the acute and chronic criteria were

calculated as 481 and 53 µg/L for GAC Unit No. ~~28B5/~~28G1, and 501 and 56 µg/L for GAC Unit No. 28E3. The maximum observed concentrations are below the most stringent criteria, and, therefore, nickel shows no RP.

vii. **Zinc.** The CTR contains acute and chronic criteria for freshwater aquatic life that are hardness dependent. The California Primary MCL for zinc is 5000 µg/L. The maximum observed effluent concentration was 6.0 µg/L from GAC Unit No. ~~28B5/~~28G1. The effluent from GAC Unit No. 28E3 showed no reportable concentrations of zinc. Using the lowest effluent hardness from GAC Unit No. 28B/28G1, the acute and chronic criteria for zinc were calculated as 123 µg/L each. The maximum observed effluent concentration for zinc is below the most stringent criteria, and, therefore, zinc shows no RP.

viii. **1,1-Dichloroethane.** The Primary MCL for 1,1-dichloroethane is 5 µg/L. Order No. R5-2005-0059 contains, and this Order carries over, an effluent limitation of less than 0.5 µg/L. The maximum observed effluent concentration was 0.13 µg/L, reported as an estimated value, from GAC Unit No. 28E3. This Order contains effluent monitoring for 1,1-dichloroethane, as well as a technology-based effluent limitation.

d. **Constituents with Reasonable Potential.** The discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard for pH and potentially toxicity. WQBELs for these constituents are included in this Order. A discussion of the constituents with reasonable potential is provided below.

i. **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 from GAC Unit No. 28E3 was 6.09 standard units. The discharge of treated groundwater has a reasonable potential to cause or contribute to an excursion above or below 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 an instantaneous maximum are included in this Order based on protection of the Basin Plan objectives for pH.

(d) **Plant Performance and Attainability.** The effluent pH from GAC Unit No. 28E3 was below the instantaneous minimum twice in eighteen samples taken between January 2006 and June 2009. While the discharger shows reasonable potential, monitoring data shows the Discharger can also generally comply with the pH effluent limitations.

4. WQBEL Calculations

Not applicable

Summary of Water Quality-Based Effluent Limitations
Discharge Points 001, 002, and 003

Table F-6. Summary of Water Quality-Based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	Standard Units	--	--	--	6.5	8.3

5. Whole Effluent Toxicity (WET)

Order No. R5-2005-0059 required limited acute toxicity monitoring and chronic toxicity monitoring only once during the life of the permit. To comply with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct whole effluent toxicity testing for acute and chronic toxicity, at least annually as specified in the Monitoring and Reporting Program (Attachment E section V.). This Order also contains effluent limitations for acute toxicity and requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate both acute and chronic effluent toxicity if observed.

b. Acute Aquatic Toxicity. 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%

Acute toxicity testing results generally show the discharge meets the acute toxicity effluent limitations. The Discharger conducted two acute toxicity tests as part of Order R5-2005-0059. The first acute toxicity test conducted had survival

of 100% for both GAC Units. The second acute toxicity test showed results of 85% and 95% for GAC Unit Nos. ~~28B5/~~28G1 and 28E3, respectively.

c. **Chronic Aquatic Toxicity.** The Discharger conducted the one chronic toxicity test during the life or Order No. R5-2005-0059. The data shows the effluent caused toxicity in the reproduction of the *Ceriodaphnia dubia* species, with a result of 16.0 chronic toxic units (TUc). The results of the chronic toxicity testing are presented in the table below. The single result is not enough to show a pattern of chronic toxicity in the effluent.

Table F-7. Summary of Chronic Toxicity Testing

Test	Results (TUc)	
	GAC Unit No. ~~28B5/~~28G1	GAC Unit No. 28E3
Pimephales promelas – Survival	1.0	1.0
Pimephales promelas – Growth	1.0	1.0
Ceriodaphnia dubia – Survival	1.0	1.0
Ceriodaphnia dubia – Reproduction	1.0	16.0
Selenastrum capricornutum – Growth	1.0	1.0

The Monitoring and Reporting Program of this Order requires annual chronic WET monitoring to demonstrate of compliance with the narrative toxicity objective. In addition to WET monitoring, the Special Provision in section VI.C.2.a.i. of the Order requires the Discharger to submit to the Central Valley Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation if a pattern of toxicity is demonstrated.

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*

[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)

regulatory setting, in order to allow for full public discussion and deliberation. We intend to modify the SIP to specifically address the issue. We anticipate that review will occur within the next year. We therefore decline to make a determination here regarding the propriety of the final numeric effluent limitations for chronic toxicity contained in these permits." The process to revise the SIP is currently underway. Proposed changes include clarifying the appropriate form of effluent toxicity limits in NPDES permits and general expansion and standardization of toxicity control implementation related to the NPDES permitting process. Since the toxicity control provisions in the SIP are under revision it is infeasible to develop numeric effluent limitations for chronic toxicity. Therefore, this Order requires that the Discharger meet best management practices for compliance with the Basin Plan's narrative toxicity objective, as allowed under 40 CFR 122.44(k).

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 a pattern of effluent toxicity has been demonstrated.

D. Performance-Based Effluent Limitations

1. Scope and Authority

The Basin Plan authorizes discharges to surface waters in the Tulare Lake Basin, and establishes minimum treatment levels that must be provided for these discharges. The Basin Plan establishes maximum effluent limitations for EC, chloride, and boron in surface water discharges as follows: "*The maximum electrical conductivity (EC) of a discharge shall not exceed the quality of the source water plus 500 micromhos per centimeter or 1,000 micromhos per centimeter, whichever is more stringent. When the water is from more than one source, the EC shall be a weighted average of all sources. Discharges shall not exceed…a chloride content of 175 mg / l, or a boron content of 1.0 mg / l.*"

2. Applicable Performance-Based Effluent Limitations

Minimum requirements established in the Basin Plan that are applicable to this discharge include effluent limitations for EC, chloride, and boron, among others.

i. Salinity

(a) Order No. R5-2005-0059 contains effluent limits based on those in the Basin Plan for EC, chloride, and boron.

(b) Other. There are no USEPA water quality criteria for the protection of aquatic organisms for electrical conductivity, chloride, and boron. The Basin Plan contains a chemical constituent objective that incorporates state MCLs, and contains a narrative objective. As described above, the

Basin Plan also includes specific effluent limits for electrical conductivity, chloride, and boron.

(c) Effluent Data. Effluent data is summarized in the following paragraphs and Table F-8 below.

(1) Electrical Conductivity. A review of the Discharger's monitoring reports from January 2006 to June 2009 shows an average effluent EC of 375 µmhos/cm, with a range from 302 µmhos/cm to 440 µmhos/cm from GAC Unit No. ~~28B5/~~28G1. The effluent from GAC Unit No. 28E3 shows an average EC of 384 µmhos/cm, with a range from 226 µmhos/cm to 625 µmhos/cm. These levels comply with the Basin Plan limits. The background receiving water EC averaged 85.3 µmhos/cm.

(2) Chloride. Chloride concentrations in the effluent from GAC Unit No. ~~28B5/~~28G1 ranged from 13.6 mg/L to 15.7 mg/L, with an average of 14.7 mg/L. Chloride concentrations in the effluent from GAC Unit No. 28E3 ranged from 13.8 mg/L to 18.9 mg/L, with an average of 16.0 mg/L. These levels comply with the Basin Plan limits.

(3) Boron. Boron was not detected in the effluent from GAC Unit No. ~~28B5/~~28G1. Boron concentrations in the effluent from GAC Unit No. 28E3 ranged from 0.0973 mg/L to 0.297 mg/L, with an average of 0.197 mg/L. These levels comply with the Basin Plan limits.

Table F-8. Effluent Salinity

Parameter	Effluent			
	Average		Maximum	
	GAC Unit No. ~~28B5/~~28G1	GAC Unit No. 28E3	GAC Unit No. ~~28B5/~~28G1	GAC Unit No. 28E3
EC (µmhos/cm)	375	384	440	625
Chloride (mg/L)	14.7	16.0	15.7	18.9
Boron (mg/L)	ND	0.197	ND	0.297

(d) Effluent Limitations. Order R5-2005-0059 established effluent limitations for EC, chloride, and boron based on the Basin Plan requirements. This Order carries over the EC, chloride, and boron effluent limitations.

E. Final Effluent Limitations

The final effluent limitations consist of applicable technology, water quality, and performance-based limits, described above.

1. Mass-based Effluent Limitations

Not applicable

2. Averaging Periods for Effluent Limitations

Not applicable

3. Satisfaction of Anti-Backsliding Requirements

The CWA allows revision of effluent limitations only if such revision is subject to and consistent with a State's antidegradation policy. The anti-backsliding requirements also prohibit the reissued permits to contain effluent limitations which are less stringent than the current effluent limitation guidelines for that pollutant, or which would cause the receiving water to violate the applicable state water quality standard under Section 303 of the CWA. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

4. Satisfaction of Antidegradation Policy

This Order does not allow for an increase in flow or mass of pollutants to Mill Creek Ditch, or to groundwater over that previously approved under Order No. R5-2005-0059. The Order requires compliance with applicable federal technology-based standards, performance-based effluent limitations contained in the Basin Plan, 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.

5. Stringency of Requirements for Individual Pollutants

This Order contains technology-based effluent limitations, performance-based effluent limitations, and WQBELs for individual pollutants. The technology-based effluent limitations consist of restrictions on volatile organic compounds and flow. The WQBELs consist of restrictions on pH and acute toxicity. The Order also implements performance-based effluent limitations required by the Basin Plan for EC, chloride, and boron. This Order's pollutant restrictions implement the minimum, applicable federal requirements.

Summary of Final Effluent Limitations
Discharge Points 001, 002, and 003

Table F-9. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	Standard Units	--	--	6.5	8.3
Electrical Conductivity @ 25°C	µmhos/cm	--	500/1000[1]	--	--
Boron	mg/L	1.0	--	--	--
Chloride	mg/L	175	--	--	--
Chloromethane	µg/L	--	<0.5	--	--

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Chloroform	µg/L	--	<0.5	--	--
1,1-Dichloroethane	µg/L	--	<0.5	--	--
1,1-Dichloroethylene	µg/L	--	<0.5	--	--
cis-1,2-Dichloroethylene	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	--	--

[1] Maximum effluent EC concentration must be less than 1,000 µmhos/cm or 500 µmhos/cm greater than source water EC, whichever is lower.

a. The maximum daily flow from GAC Unit No. ~~28B5/~~28G1 shall not exceed 1.44 mgd.

b. The maximum daily flow from GAC Unit No. 28E3 shall not exceed 1.44 mgd.

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

   i. 70%, for any one bioassay; and
   ii. 90% for the median of any three or more consecutive bioassays.

F. Interim Effluent Limitations

Not applicable

G. Land Discharge Specifications

Not applicable

H. 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.

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

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

A. Influent Monitoring

1. Influent monitoring is required to collect data on the characteristics of the contaminated groundwater being treated. The monitoring frequencies for EC (monthly), and chloromethane, chloroform, 1,1-dichloroethane, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, vinyl chloride, 1,2-dichloroethane, and other VOCs (quarterly) have been retained from Order No. R5-2005-0059.

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. Effluent monitoring frequencies and sample types for the following parameters and constituents were retained from Order No. R5-2005-0059 to determine compliance with effluent limitations: flow (weekly); pH, chloromethane, chloroform, 1,1-dichloroethane, 1,1-dichloroethylene, cis-1,2-dichloroethylene, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene (monthly); and for EC, boron, and chloride (quarterly) have, and acute toxicity (annually.

2. Other effluent monitoring frequencies for dissolved oxygen, trans-1,2-dichloroethylene, vinyl chloride, and 1,2-dichloroethane (monthly); copper and other VOCs (quarterly); and acute toxicity (annually) have been retained from Order No. R5-2005-0059. Effluent monitoring for hardness (quarterly) is included in this Order.

3. Order No. R5-2005-0059 required chronic toxicity testing once during the life of the permit, and priority pollutant sampling twice during the life of the permit. The

monitoring frequency for both chronic toxicity testing and priority pollutant sampling has been established at once per year. [Needs revision after decision has been made on requested sampling reduction]

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

b. Monitoring for priority pollutants is required annually to collect necessary data to determine reasonable potential as required in section 1.2 of the SIP. The pH and hardness (as $CaCO_3$) of the receiving water shall also be monitored concurrently with the priority pollutants to ensure the water quality criteria are correctly adjusted for the receiving water when determining reasonable potential as specified in section 1.3 of the SIP.

2. Groundwater

The Discharger is required to monitor groundwater under California Environmental Protection Agency, Department of Toxic Substances Control's (DTSC) Imminent and Substantial Endangerment Determination and Order No. I&S 90/91-001. The Discharger provides copies of its groundwater monitoring activities to the Central Valley Water Board.

E. Other Monitoring Requirements

1. Mid-Treatment Monitoring

GAC treatment units have a typical breakthrough time of six to seven months. Mid-treatment monitoring is required to ensure the GAC units are changed out prior to discharges that would violate effluent limitations.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits

in accordance with 40 CFR 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42.

40 CFR 122.41(a)(1) and (b) through (n) establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR 123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR 122.41(j)(5) and (k)(2) because the enforcement authority under the 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.) Adequate WET data is not available to determine if the discharge has reasonable potential to cause or contribute to an in-stream excursion above the Basin Plan's narrative toxicity objective.

The Monitoring and Reporting Program of this Order requires annual chronic WET monitoring for demonstration of compliance with the narrative toxicity objective. In addition to WET monitoring, Provision VI.C.2.a.i. requires the Discharger to submit to the Central Valley Water Board an Initial Investigative TRE Work Plan for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered in the future. The provision also includes a numeric toxicity monitoring trigger, requirements for accelerated monitoring, and requirements for TRE initiation if a pattern of toxicity is demonstrated.

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

Accelerated Monitoring. The provision requires accelerated WET testing when a regular WET test result exceeds the monitoring trigger. The purpose of accelerated monitoring is to determine, in an expedient manner, whether there is a pattern of toxicity before requiring the implementation of a TRE. Due to possible seasonality of the toxicity, the accelerated monitoring should be performed in a timely manner, preferably taking no more than 2 to 3 months to complete.

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

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

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

- *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*, EPA/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.

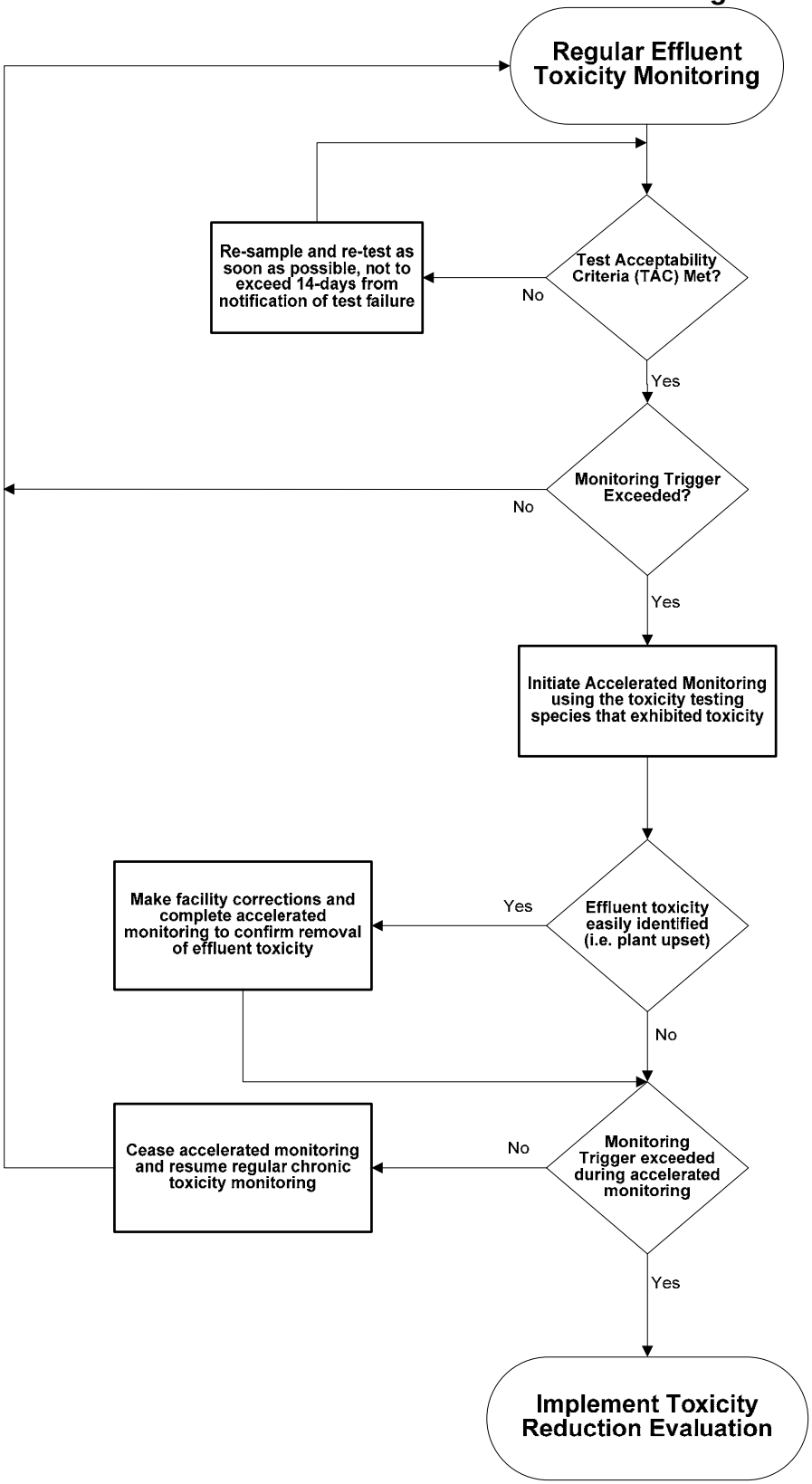
- *Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition*, EPA 600/R-92/081, September 1993.

- *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

a. The Discharger is required to keep records of the amount of treated groundwater that is used on the agricultural fields. This ensures the treated groundwater is applied at reasonable rates.

b. The Discharger occasionally conducts short-term pumping tests at the monitoring or extraction wells. Pumped water is diverted to any one of the treatment units for treatment prior to discharge. The Discharger occasionally discharges untreated wastewater in small volumes to the agricultural fields during well development, redevelopment, or tests of well pump repairs. The discharge of untreated wastewater is limited to 100,000 gallons per 5-day discharge event and such events would not occur over more than 10 days per year, i.e., the total annual discharge would be limited to 200,000 gallons. The discharges are deminimus: the worst-case scenario, discharge to the smallest field, field 9 of two acres, would result in a hydraulic loading of only 270 gallons per acre per day.

4. Construction, Operation, and Maintenance Specifications

a. The operation and maintenance specifications for the groundwater remediation system are necessary to protect the beneficial uses applicable to Mill Creek Ditch and the underlying groundwater. The specifications included in this Order are retained from R5-2005-0059.

5. Special Provisions for Municipal Facilities (POTWs Only)

Not applicable

6. Other Special Provisions

a. The Discharger must notify the Division of Water Rights at the State Water Resources Control Board of any changes in the quantity of treated groundwater it discharges to Mill Creek Ditch in case a user has rights to the water downstream from the discharge points.

b. The Discharger must ensure it complies with local policies and regulations pertaining to its groundwater treatment and disposal. The Discharger must obtain permission from the Kaweah Delta Water Conservation District, which owns Mill Creek Ditch, to discharge treated groundwater into Mill Creek Ditch.

7. Compliance Schedules

Not applicable

VIII. PUBLIC PARTICIPATION

The Central Valley Water Board is considering the issuance of WDRs that will serve as a 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 by posting notices of public hearing at the fence of each treatment system, the Visalia City Hall, and the Central Valley Water Board's website at the following address:
http://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/index.shtml.

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 **5 April 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:	26/27/28 May 2010
Time:	8:30 a.m.
Location:	Regional Water Quality Control Board, Central Valley Region 11020 Sun Center Dr., Suite #200 Rancho Cordova, CA 95670

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

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

D. Waste Discharge Requirements Petitions

Any aggrieved person may petition the State Water Board to review the decision of the Central Valley Water Board regarding the final WDRs. The petition must be 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 Fresno address above 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) 445-6083.

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

I. GAC UNIT NO. ~~28B5/~~28G1 – REASONABLE POTENTIAL ANALYSIS FOR PRIORITY POLLUTANTS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
Antimony	µg/L	0.43[2]	NA	6	--	--	--	4300	6	No
Chromium (VI)	µg/L	3.2	NA	11.4	16.3	11.4	--	--	--	No
Lead	µg/L	0.48[2]	NA	2.5	65	2.5	--	--	15	No
Mercury	µg/L	0.00[1,2]	NA	0.051	--	--	--	0.051	2	No
Nickel	µg/L	0.98[2]	NA	53	481	53	--	4600	100	No
Zinc	µg/L	6.0	NA	123	123	123	--	--	5000	No

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level
NA = Not Available
ND = Non-detect
Footnotes:
(1) See Section IV.C.3.b.i. of the Fact Sheet (Attachment F) for further explanation
(2) Estimated concentration

II. GAC UNIT NO. 28E3 – REASONABLE POTENTIAL ANALYSIS FOR PRIORITY POLLUTANTS

Constituent	Units	MEC	B	C	CMC	CCC	Water & Org	Org. Only	MCL	Reasonable Potential
Arsenic	µg/L	1.3[2]	NA	10	340	150	--	--	10	No
Chromium (VI)	µg/L	1.8	NA	11.4	16.3	11.4	--	--	--	No
Mercury	µg/L	0.05[1,2]	NA	0.051	--	--	--	0.051	2	No
Nickel	µg/L	0.42[2]	NA	53	501	56	--	4600	100	No
1,1-Dichloroethane	µg/L	0.13[2]	<0.5	5	--	--	--	--	5	No

General Note: All inorganic concentrations are given as a total recoverable.
MEC = Maximum Effluent Concentration
B = Maximum Receiving Water Concentration or lowest detection level, if non-detect
C = Criterion used for Reasonable Potential Analysis
CMC = Criterion Maximum Concentration (CTR or NTR)
CCC = Criterion Continuous Concentration (CTR or NTR)
Water & Org = Human Health Criterion for Consumption of Water & Organisms (CTR or NTR)
Org. Only = Human Health Criterion for Consumption of Organisms Only (CTR or NTR)
Basin Plan = Numeric Site-specific Basin Plan Water Quality Objective
MCL = Drinking Water Standards Maximum Contaminant Level
NA = Not Available
ND = Non-detect
Footnotes:
(1) See Section IV.C.3.b.i. of the Fact Sheet (Attachment F) for further explanation
(2) Estimated concentration