

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2002-0212

NPDES NO. CA0083992

WASTE DISCHARGE REQUIREMENTS
FOR
UNITED STATES DEPARTMENT OF THE AIR FORCE
AIRCRAFT CONTROL AND WARNING SITE
GROUNDWATER TREATMENT SYSTEM
FORMER MATHER AIR FORCE BASE
SACRAMENTO COUNTY

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

1. The United States Department of the Air Force (hereafter Discharger) has submitted various documents containing the information necessary to prepare a permit renewal to discharge treated groundwater under the National Pollutant Discharge Elimination System (NPDES) from the Aircraft Control and Warning (AC&W) Site Ground Water Treatment System (GWTS). These documents include: The Quarterly Basewide Groundwater Monitoring Reports, the AC&W Site Record Of Decision, December 1993 (ROD), and the Final Explanation of Significant Difference to the AC&W Operable Unit (OU) Record of Decision, June 1997 (ESD). The GWTS is located in the northwest $\frac{1}{4}$ of Section 13, T8N, R6E, MDB&M, as shown on Attachment A, which is a part of this Order.
2. Historical records indicate that, from 1958 to 1966, waste solvents were disposed of at the AC&W Site. Later remedial investigations at the AC&W Site identified trichloroethylene (TCE) in shallow groundwater. The previous practice of subsurface disposal is assumed to be the cause of TCE contamination in the groundwater. Other releases that have occurred at the AC&W Site include fuel that leaked from underground storage tanks at Installation Restoration Program Sites 25, 30, and 47; however analyses of soil samples collected during past investigations indicated that no contamination remains at these sites.
3. The TCE plume originates in the area near the Federal Aviation Radar Dome and extends into the north-east section of the former Mather Air Force Base housing area. Groundwater flows generally to the southwest at the AC&W Site.
4. The Discharger owns and operates a treatment and disposal system designed to extract groundwater contaminated with volatile organic compounds (VOC's), remove the contaminants, and discharge the treated water from Outfall 001 to the southern lobe of Mather Lake, immediately adjacent to the outlet of the lake, as shown on Attachment B, hereby made part of this Order. Mather Lake is a public recreation area within the former Mather Air Force Base boundaries. During the wet season, Mather Lake fills and overflows to Morrison Creek, which is tributary to the Sacramento – San Joaquin Delta, a water of the United States. During the dry season, the

discharge helps maintain water levels in the Lake. Treated groundwater may also be used for irrigation of landscaping at various places within the former Air Force Base boundaries.

5. The discharge of treated groundwater to Mather Lake was previously regulated by Waste Discharge Requirements (WDR) Order No. 96-258, NPDES Permit No. CA0083992, which was adopted by the Regional Board on 20 September 1996.
6. The groundwater extraction and treatment system operated by the Discharger consists of eight six-inch-diameter extraction wells and a single column, reverse flow, air stripping tower. Water enters the top of the tower falling down over the packing material. Two pumps distribute the treated water from an effluent tank via a six-inch pipeline to the discharge point at Mather Lake.
7. The ROD and ESD describe the engineering features of the pump and treatment system conceptually, stating that detailed specifications would be developed during the design phase. The design of the pump and treat system determined that a treatment rate of approximately 270 gallons per minute pumped from eight extraction wells would be used to hydraulically capture the groundwater contaminant concentrations above 5 micrograms per liter ($\mu\text{g/L}$, ppb) of TCE as specified by the ROD. The Final Preliminary Engineering Report for AC&W Pump and Treat System described the Ground Water Treatment Plant design as follows:

Groundwater Design Flow:	0.49 million gallons per day (mgd)
Monthly Average Flow:	0.39 mgd

The AC&W Ground Water Treatment Plant has been operating since 1995 and has consistently met the effluent limit of 0.5 $\mu\text{g/L}$ (ppb) of total volatile organic compounds (VOC's) with the exception of two separate sampling events (1.9 $\mu\text{g/L}$ (ppb) of TCE in May 1996 and 1.4 $\mu\text{g/L}$ (ppb) of TCE in March of 1999). The Discharger has submitted limited groundwater and background surface water data. The following is a summary of the influent and effluent groundwater characteristics as reported in the Third Quarter 2001 Basewide Groundwater Monitoring Report:

<u>Constituent</u>	<u>Influent Concentration:</u>	<u>Effluent Concentration:</u>
Trichloroethylene	23 – 46 $\mu\text{g/L}$ (ppb)	ND (<0.5 $\mu\text{g/L}$, ppb)
Specific Conductivity	104 – 144 $\mu\text{mhos/cm}$	111- 177 $\mu\text{mhos/cm}$
pH	7.04 – 8.06 pH Units	6.90 – 8.67 pH Units

ND = Not Detected

8. The U.S. Environmental Protection Agency (USEPA) and the Regional Board have classified this discharge as a minor discharge.

9. The Regional Board adopted the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basin. These requirements implement the Basin Plan.
10. Outfall 001 discharges to Mather Lake. Mather Lake is a public recreation area within the former Mather Air Force Base boundaries. During the wet season, Mather Lake fills and overflows to Morrison Creek. From Mather Lake, Morrison Creek flows west-southwest to the Bufferlands area of the Sacramento- San Joaquin Delta south of Freeport.
11. The Basin Plan at page II-2.00 states that: “Existing and potential beneficial uses that currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. The beneficial uses of any specifically identified water body generally apply to its tributary streams.” The Basin Plan does not specifically identify beneficial uses for Mather Lake or Morrison Creek, but the Basin Plan does identify present and potential uses for the Sacramento – San Joaquin Delta, to which Mather Lake and Morrison Creek are tributary.

The Basin Plan identifies the following existing **beneficial uses** of the Sacramento – San Joaquin Delta: municipal and domestic supply, agricultural supply including both irrigation and stock watering; industrial process water supply; industrial service supply; body contact recreation, other non-body contact recreation; warm freshwater habitat; cold freshwater habitat, warm and cold migration of aquatic organisms, warm habitat spawning, reproduction, and/or early development; wildlife habitat; and navigation. In addition, State Board Resolution No. 88-63, incorporated into the Basin Plan pursuant to Regional Board Resolution No. 89-056, requires the Regional Board to assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in Table II-1.

The Basin Plan on page II-1.00 states: “Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning...” and with respect to disposal of wastewaters states that “... disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.”

In reviewing whether the existing and/or potential beneficial uses of the Sacramento – San Joaquin Delta apply to Mather Lake and Morrison Creek, the Board has considered the following facts:

- a. *Domestic Supply and Agricultural Supply*

The Regional Board is required to apply the beneficial uses of municipal and domestic supply to the Mather Lake and Morrison Creek based on State Board Resolution No. 88-63 which was incorporated into the Basin Plan pursuant to Regional Board Resolution 89-056. In addition, the State Water Resources Control Board (SWRCB) has issued water rights to existing water users along Morrison Creek and the Sacramento – San Joaquin Delta downstream of the discharge for domestic and irrigation uses. In addition to the existing

water uses, growth in the area, downstream of the discharge is expected to continue, which presents a potential for increased domestic and agricultural uses of the water in Morrison Creek and the Sacramento – San Joaquin Delta.

b. *Water Contact and Non-Contact Recreation and Esthetic Enjoyment*

The Board finds that the discharge flows through residential areas, and there is ready public access to Mather Lake and Morrison Creek. Exclusion of the public is unrealistic and contact recreational activities currently exist in and along Mather Lake and Morrison Creek and these uses are likely to increase as the population in the area grows. Prior to flowing into the Sacramento – San Joaquin Delta, Morrison Creek flows through areas of general public access, meadows, residential areas, and commercial areas.

c. *Groundwater Recharge*

Since water is maintained in Mather Lake year-round, it is reasonable to assume that water in the Lake is lost by evaporation, flow downstream, and percolation to groundwater which may provide a source of municipal and irrigation water supply.

d. *Cold and Warm Freshwater Aquatic Habitat*

The Basin Plan (Table II-1) designates the Sacramento – San Joaquin Delta as a cold and warm freshwater habitat. The California Department of Fish and Game has found several warm water species of aquatic life in Morrison Creek during field surveys. They also reported that a study conducted by the Sacramento Regional County Sanitation District found Chinook salmon, a cold water species, in the Bufferlands area, which includes Upper and Lower Beach Lakes. As noted previously, Mather Lake seasonally flows to Morrison Creek, which seasonally flows into the Bufferlands area, which is within the legal boundary of the Sacramento – San Joaquin Delta. Therefore, pursuant to the Basin Plan (Table II-1, Footnote (2)), the cold designation applies to Morrison Creek and Mather Lake. The cold-water habitat designation necessitates that the receiving water dissolved oxygen concentration be maintained at, or above, 7.0 milligrams per Liter (mg/L, ppm). This approach recognizes that, if the naturally occurring receiving water dissolved oxygen concentration is below 7.0 mg/L (ppm), the Discharger is not required to improve the naturally occurring level.

Upon review of the flow conditions, habitat values, existing and potential beneficial uses of Mather Lake and Morrison Creek, and the facts described above, the Regional Board finds that the beneficial uses identified in the Basin Plan for the Sacramento – San Joaquin Delta are applicable to Mather Lake and Morrison Creek.

The Regional Board also finds that based on the available information and on the Discharger's application, that Morrison Creek, absent the discharge, is at times a seasonal and/or ephemeral

waterbody. The Board also finds that at times, the discharge from Outfall 001 represents the only source of recharge to Mather Lake. Since; flows in Morrision Creek are of a seasonal and/or ephemeral nature, and, at times the discharge from Outfall 001 represents the sole source of recharge to Mather Lake, and, treated groundwater is used for irrigating landscaping at various places within the former Mather Air Force Base, the designated beneficial uses must be protected, but no year-round credit for receiving water dilution is available. Although the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. At other times, flows to Mather Lake and Morrision Creek help support the cold-water aquatic life. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water quality goals and aquatic life. Significant dilution may occur during the irrigation season, and immediately following high rainfall events.

12. USEPA adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000. These Rules contain water quality standards applicable to this discharge. The State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP), which contains guidance on implementation of the NTR and the CTR.
13. Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numeric water quality standard. The absence of a limitation for a constituent indicates either a lack of information is available for evaluation, or the constituent does not have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numeric water quality standard. As a means of collecting additional information necessary to conduct a complete reasonable potential analysis, this Order contains provisions that:
 - a. Require the Discharger to conduct a study and provide information as to whether the levels of NTR, CTR, or other pollutants in the discharge have the reasonable potential to cause or contribute to an in-stream excursion above a numeric or narrative water quality standard, including Basin Plan numeric or narrative objectives and NTR and CTR pollutants;
 - b. If pollutants in the discharge have a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard, requires the Discharger to submit information to calculate effluent limitations for those pollutants; and
 - c. Allow the Regional Board to reopen this Order and include effluent limitations for those pollutants.

On 10 September 2001, the Executive Officer issued a letter, in conformance with Section 13267 of the California Water Code, requiring the Discharger to prepare a technical report assessing effluent and receiving water quality. A copy of that letter, including its Attachments I through IV,

are incorporated into this Order as Attachment C. This Order includes a Provision which is intended to be consistent with the requirements of Attachment C in requiring sampling and reporting of NTR, CTR, and additional constituents to determine if the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standards.

14. Previous Order No. 96-258 included effluent limitations for total VOC's based upon best practicable treatment of contaminated groundwater. The former Mather Air Force Base AC&W Site GWTS is designed, constructed, and operated to meet the effluent limitations prescribed in the previous Order. These effluent limitations for Total VOC's are retained in this new Order. The effluent limitations consider the historical performance of the on-site best available treatment technology economically achievable (BAT) for removal of VOCs and are less than or equal to California Primary Maximum Contaminant Levels, California Toxics Rule and National Toxics Rule criteria, and limits which implement applicable water quality objectives.
15. As noted above, groundwater is extracted from wells on the eastern perimeter of the former Mather Air Force Base, treated, and then subsequently discharged to nearby Mather Lake. Monitoring of the influent from the groundwater wells to the treatment plant indicates the combined Total Dissolved Solids (TDS) concentrations are typically less than 150 mg/L (ppm). The treatment process does not result in a significant change in the mineral or nutrient concentrations of the groundwater. Therefore the discharge of the treated groundwater to Mather Lake poses minimal threat to groundwater quality beneath the Lake.
16. Previous Order No. 96-258 provided that treated groundwater may be used for landscape irrigation. This new Order includes Limitations for the use of reclaimed water to ensure protection of surface waters, groundwater, and potable drinking water supplies.
17. The beneficial uses of the underlying groundwater are municipal and domestic, industrial, and agricultural supply.
18. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and SWRCB Resolution 68-16. Compliance with these requirements will result in the use of best practicable treatment or control of the discharge. The impact on existing water quality will be insignificant.
19. Effluent limitations, and toxic and pretreatment effluent standards established pursuant to Sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act (CWA) and amendments thereto are applicable to the discharge.
20. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA) (Public Relations Code Section 21000, et. Seq.), in accordance with Section 13389 of the California Water Code.

21. The Regional Board has considered the information in the attached Information Sheet in developing the Findings of this Order. The attached Information Sheet is part of this Order. Attachments A, B, and C are also a part of this Order.
22. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
23. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge.
24. This Order shall serve as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect 50 days following permit adoption (effective 7 December 2002), provided USEPA has no objections.
25. Any person adversely affected by this action of the Regional Board may petition the SWRCB to review the action. The petition must be received by the State Board Office of the Chief Counsel, P.O. Box 100, Sacramento, CA 95812-0100, within 30 days of the date the action was taken. Copies of the law and regulations applicable to filing petitions will be provided upon request.

IT IS HEREBY ORDERED that Order No. 96-258 is rescinded, and that the United States Department of the Air Force, Aircraft Control and Warning Site, former Mather Air Force Base, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions:

1. Discharge of wastewater to surface water at a location or in a manner different from that described in the Findings 3 and 4 is prohibited. This prohibition includes flows of partially treated or untreated ground water from the ground water collection and treatment system, and from any monitoring or extraction wells.
2. Neither the discharge nor its treatment shall create a nuisance as defined in Section 13050 of the California Water Code.
3. Discharge of any pollutant not previously disclosed and considered for inclusion in the Effluent or Reclaimed Groundwater Limitations portions of this permit, is prohibited.
4. Bypass or overflow of untreated or partially treated wastes is prohibited.

5. The Discharger shall not cause the degradation of any water supply.
6. The bypass or overflow of wastes to surface waters is prohibited, except as allowed by Standard Provision A.13. [See attached “Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)].

B. Effluent Limitations (Discharge from Outfall 001 to Mather Lake, or for landscape irrigation use):

1. Effluent shall not exceed the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Monthly Average</u>	<u>Daily Maximum</u>
Total Volatile Organic Compounds	µg/L, ppb lbs/day	0.5 0.0021 ¹	1.0 0.0041 ¹

¹ Based upon maximum daily discharge of 0.49 mgd.

2. The discharge shall not have a pH less than 6.5 nor greater than 8.5.
3. The maximum daily discharge flow shall not exceed 0.49 million gallons per day (mgd).
4. Survival of aquatic organisms in 96-hour bioassays on undiluted waste shall be no less than:

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

C. Reclaimed Groundwater Limitations (Landscape Irrigation):

1. The discharge of treated groundwater to surface waters, other than through Outfall 001, is prohibited.
2. Bypass or overflow of untreated or partially treated groundwater from the GWTS, any intermediate unit processes, or the reclamation distribution system to the point of use is prohibited. The Discharger shall not allow the reclaimed groundwater distribution system to leak or fail from lack of an ongoing maintenance and operations program.
3. Excessive irrigation with reclaimed groundwater that results in excessive runoff of reclaimed water, or continued irrigation with reclaimed groundwater during periods of rain is prohibited. Overspray or runoff associated with normal sprinkler use shall be minimized.
4. The use of reclaimed groundwater shall not cause the degradation of groundwater.

5. All reclamation equipment, pumps, piping, valves, and outlets shall be appropriately marked to differentiate them from potable facilities.
6. Reclaimed groundwater shall not be allowed to escape from the authorized use areas by airborne spray or by surface flow except in minor amounts such as that associated with good irrigation practices.
7. There shall be no cross-connection between potable water supply and piping containing reclaimed groundwater. Supplementing reclaimed water with potable water shall not be allowed except through an air-gap separation, or if approved by the Department, a reduced pressure principle backflow device.
8. The reclaimed groundwater piping system shall not include any hose bibs, except at the treatment plant, on hose bibs with appropriate signage.

D. Sludge Disposal:

1. Sludge is not produced by this treatment process. Spent carbon shall be sent for regeneration at an approved facility. Spent carbon and any collected screenings or other solids removed from liquid wastes shall be disposed of in a manner approved by the Executive Officer, and consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq.
2. Any proposed change in disposal practice from a previously approved practice shall be reported to the Executive Officer and EPA Regional Administrator at least **90 days** in advance of the change.

8. E. Receiving Water Limitations:

Receiving Water Limitations are based upon water quality objectives contained in the Basin Plan. As such, they are a required part of this permit. A receiving water condition not in conformance with the limitation is not necessarily a violation of this Order. The Regional Board may require an investigation to determine cause and culpability prior to asserting a violation has occurred.

The discharge shall not cause the following in the receiving water:

1. Concentrations of dissolved oxygen to fall below 7.0 mg/L (ppm). The monthly median of the mean daily dissolved oxygen concentration at this location shall not fall below 85 percent of saturation in the main water mass, and the 95th percentile concentration shall not fall below 75 percent of saturation.
2. Any individual pesticide or combination of pesticides to be present in concentrations that adversely affect beneficial uses, and total identifiable persistent chlorinated hydrocarbon

pesticides to be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the Environmental Protection Agency or the Executive Officer.

3. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.
4. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.
5. Aesthetically undesirable discoloration.
6. Fungi, slimes, or other objectionable growths.
7. The turbidity to increase as follows:
 - a. More than 1 Nephelometric Turbidity Units (NTUs) 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.
 - d. More than 10 percent where natural turbidity is greater than 100 NTUs.
8. The normal ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 pH units.
9. Deposition of material that causes nuisance or adversely affects beneficial uses.
10. The normal ambient temperature to increase more than 5°F.
11. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, Title 22; that harm human, plant, animal or aquatic life; or 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. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
13. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human

health.

14. Violations of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Water Resources Control Board pursuant to the CWA and regulations adopted thereunder.
15. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.

F. Provisions:

1. The Discharger shall comply with Monitoring and Reporting program No. _____, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.
2. The discharge may contain constituents that have reasonable potential to cause or contribute to an exceedance of NTR, CTR water quality criteria, or other constituents that could exceed narrative or numeric water quality objectives in the Basin Plan. The specific constituents of concern are listed in the *Requirement to Submit Monitoring Data* letter issued by the Executive Officer on 10 September 2001. A copy of that letter, including its Attachments I through IV, is incorporated into this Order as Attachment C. The Discharger shall comply with the following time schedule in conducting this effluent and receiving water study and submitting reports:

<u>Task</u>	<u>Compliance Date</u>
Submit Study Report	1 March 2003
Submit Interim Status Report	1 November 2003
Submit Study Report for Dioxins	1 November 2004

This Provision is intended to be consistent with the requirements of the 10 September 2001 technical report request described in Finding 13. The Discharger shall submit to the Regional Board on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Board by letter when it returns to compliance with the time schedule.

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

3. **Chronic Toxicity Testing:** The Discharger shall conduct the chronic toxicity testing specified in the Monitoring and Reporting Program. If the testing indicates that the discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the water quality objective for toxicity, the Discharger shall initiate a Toxicity Identification Evaluation (TIE) to identify the causes of toxicity. Upon completion of the TIE, the Discharger shall submit a workplan to conduct a Toxicity Reduction Evaluation (TRE) and, after Regional Board evaluation, conduct the TRE. This Order will be reopened and a chronic toxicity limitation included and/or a limitation for the specific toxicant identified in the TRE included. Additionally, if a chronic toxicity water quality objective is adopted by the SWRCB, this Order may be reopened and a limitation based on that objective included.
4. **Reopeners:** This Order may be reopened and effluent and/or receiving water limitations modified based on information supplied as required above.
5. The Discharger shall comply with all the items of the “Standard Provisions and Reporting Requirements for Waste Discharge Requirements (NPDES)”, dated 1 March 1991, which are part of this Order. This attachment and its individual paragraphs are referred to as “Standard Provisions.”
6. Semi-annual reports are necessary to evaluate the efficiency and adequacy of the remedial action. The current groundwater monitoring program shall follow the Performance Monitoring Plan for the Remedial Well field as proposed in February 1991. A comprehensive, site wide groundwater monitoring plan is to be evaluated annually for validity of analyses, frequency of sampling, and selection of key monitoring wells for sampling. Any proposed revised groundwater monitoring plan must be submitted to regional Board staff for review.
7. This Order expires on **1 December 2007** and the Discharger must file a Report of Waste Discharge in accordance with Title 23, CCR, not later than 180 days in advance of such date in application for renewal of waste discharge requirements if it wishes to continue the discharge.
8. Prior to making any change in the discharge point, place of use, or purpose of use of the wastewater, the Discharger shall obtain approval of or clearance from the SWRCB (Division of Water Rights).
9. In the event of any change in control or ownership of land or waste discharge facilities recently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to this office.

10. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, address and telephone number of the persons responsible for contact with the Regional Board and a statement. The statement shall comply with the signatory paragraph of Standard Provision D.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer shall be approved or disapproved in writing by the Executive Officer.

I, THOMAS R. PINKOS, Acting Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 6 December 2002.

THOMAS R. PINKOS, Executive Officer

KAB/JME/Tentative/10/9/02

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2002-0212

NPDES NO. CA0083992
FOR
DEPARTMENT OF THE AIR FORCE
AIRCRAFT CONTROL AND WARNING SITE (AC&W)
GROUND WATER TREATMENT SYSTEM
FORMER MATHER AIR FORCE BASE
SACRAMENTO COUNTY

The Discharger shall not implement any changes to this Program unless and until the Regional Board or Executive Officer issues a revised Monitoring and Reporting Program. For purposes of evaluating compliance with the limitations of Order No. R5-2002-XXXX0212, the Discharger shall conduct monitoring and submit reports as specified below. To evaluate compliance with the limitations of this Order, monitoring should occur within a brief enough period to be able to evaluate the effect of the effluent on the ambient water quality.

INFLUENT MONITORING

Influent groundwater samples shall be collected at approximately the same time as effluent samples and should be representative of the influent. Influent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Total Volatile Organics ¹	µg/L, ppb	Grab	Monthly
Trichloroethylene ²	µg/L, ppb	Grab	Monthly
Flow	mgd	Cumulative/Meter	Daily Total

¹ EPA Method 601 or equivalent

² At a minimum the Discharger shall comply with the Monitoring Requirements for this constituent as outlined in Section 2.3 and 2.4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP), adopted 2 March 2000 by the State Water Resources Control Board. For each priority pollutant use an analytical method from the SIP, Appendix 4 with a Minimum Level (ML) below all applicable pollutant criteria. In accordance with Section 2.4.2 of the SIP, the Discharger is to instruct the laboratory analyzing samples for priority pollutants to establish calibration standards so that the ML 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. Report all peaks identified by the EPA test methods.

EFFLUENT MONITORING

Effluent samples shall be collected downstream from the last connection through which wastes can be admitted into the outfall. Effluent samples shall be representative of the volume and quality of the

discharge, including batch releases from the treatment process. Time of collection of samples shall be recorded. The Effluent monitoring shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Flow	mgd	Cumulative/Meter	Daily Total
Total Volatile Organics ¹	µg/L, ppb	Grab	Twice Monthly
Trichloroethylene ²	µg/L, ppb	Grab	Twice Monthly
pH ³	pH units	Grab	Twice Monthly
Electrical Conductivity @25°C ³	µmhos/cm	Grab	Twice Monthly
Temperature ³	°F	Grab	Twice Monthly
Dissolved Oxygen ³	mg/L, ppm	Grab	Twice Monthly
Hardness (as CaCO ₃)	mg/L, ppm	Grab	Monthly
Total Suspended Solids	mg/L, ppm	Grab	Monthly
Turbidity	NTU	Grab	Monthly
Acute Toxicity ⁴	% Survival	Grab	Quarterly

¹ Test method to be by EPA Methods 601 and 602, or 8010 and 8020, or 8260, or 500 series with a practical quantitation level no greater than 0.5 µg/l. All concentrations between the detection level and practical quantitation level shall be reported as trace. EPA Method 601 or equivalent.

² At a minimum the Discharger shall comply with the Monitoring Requirements for this constituent as outlined in Section 2.3 and 2.4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP), adopted 2 March 2000 by the State Water Resources Control Board. For each priority pollutant use an analytical method from the SIP, Appendix 4 with a Minimum Level (ML) below all applicable pollutant criteria. In accordance with Section 2.4.2 of the SIP, the Discharger is to instruct the laboratory analyzing samples for priority pollutants to establish calibration standards so that the ML 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. Report all peaks identified by the EPA test methods.

³ Field measurements.

⁴ The acute bioassays samples shall be analyzed using EPA/600/4-90/027F, Fourth Edition, or later amendment with Board staff approval. Temperature and pH shall be recorded at the time of bioassay sample collection. Test species shall be fathead minnows (*Pimephales promelas*).

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule.

RECEIVING WATER MONITORING

All receiving water samples shall be grab samples. Receiving water monitoring shall include at least the following:

<u>Station</u>	<u>Description</u>
R-1	700 east of the Mather Lake Dam, along the southern Mather Lake shoreline
R-2	Eastern edge of the Mather Lake dam. At the spillway during overflow

<u>Constituents</u>	<u>Units</u>	<u>Station</u>	<u>Sampling Frequency</u>
Total Volatile Organics ¹	µg/L, ppb	Grab	Monthly
pH ²	pH Units	R-1, R-2	Twice Monthly
Electrical Conductivity @25°C ²	µmhos/cm	R-1, R-2	Twice Monthly
Dissolved Oxygen ²	mg/L, ppm	R-1, R-2	Twice Monthly
Temperature ²	°F	R-1, R-2	Twice Monthly
Hardness (as CaCO ₃)	mg/L, ppm	R-1, R-2	Quarterly
Total Suspended Solids	mg/L, ppm	R-1, R-2	Quarterly
Turbidity	NTU	R-1, R-2	Quarterly

¹ Test method to be by EPA Methods 601 and 602, or 8010 and 8020, or 8260, or 500 series with a practical quantitation level no greater than 0.5 µg/l. All concentrations between the detection level and practical quantitation level shall be reported as trace. EPA Method 601 or equivalent.

² Field measurements.

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by Stations R-1 and R-2. Attention shall be given to the presence of:

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

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

THREE SPECIES CHRONIC TOXICITY MONITORING

Chronic toxicity monitoring shall be conducted to determine whether the effluent is contributing toxicity to Mather Lake or Morrison Creek. The testing shall be conducted as specified in EPA 600/4-91/002. Chronic toxicity samples shall be collected from final effluent prior to its entering Mather Lake. Grab samples shall be representative of the volume and quality of the discharge. Time of collection samples shall be recorded. The effluent tests must be conducted with concurrent reference toxicant tests. Both the reference toxicant and effluent test must meet all test acceptability criteria as specified in the chronic manual. If the test acceptability criteria are not achieved, then the Discharger must re-sample and re-test within 14 days. Chronic toxicity monitoring shall include the following:

Species: *Pimephales promelas, Ceriodaphnia dubia, and Selenastrum capricornutum*
 Frequency: **Annually**

The Discharger shall conduct the chronic toxicity test using 100% effluent and 2 controls. If no toxicity is found in any of the tests during the first year of quarterly testing, the frequency of testing shall be reduced to annually. If toxicity is found in any of the effluent tests, the Discharger must immediately retest using the full sampling protocol of 5 dilutions listed below, and quarterly testing must be conducted for the duration of the permit.

Dilution Series:	<u>Dilutions (%)</u>					<u>Controls</u>	
	<u>100</u>	<u>50</u>	<u>25</u>	<u>12.5</u>	<u>6.25</u>	Mather Lake <u>Water</u>	Lab <u>Water</u>
% GWTP Effluent	100	50	25	12.5	6.25	0	0
% Dilution Water*	0	50	75	87.5	93.75	100	0
% Lab Water	0	0	0	0	0	0	100

* Dilution water shall be receiving water from Mather Lake taken within 100 feet of the largest natural inlet to the lake.

LANDSCAPE IRRIGATION

If treated groundwater is used for landscape irrigation, samples shall be collected after treatment and prior to use for landscape irrigation. Results of final effluent monitoring may be used for purposes of monitoring the quality of groundwater used for irrigation, but shall include at least the following:

<u>Constituents</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Flow	mgd	Cumulative/Meter	Daily Total
Total Volatile Organics ¹	µg/L, ppb	Grab	Twice Monthly
Trichloroethylene ²	µg/L, ppb	Grab	Twice Monthly
pH ³	pH units	Grab	Twice Monthly
Electrical Conductivity @25°C ³	µmhos/cm	Grab	Twice Monthly

¹ EPA Method 601 or equivalent

² At a minimum the Discharger shall comply with the Monitoring Requirements for this constituent as outlined in Section 2.3 and 2.4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP), adopted 2 March 2000 by the State Water Resources Control Board. For each priority pollutant use an analytical method from the SIP, Appendix 4 with a Minimum Level (ML) below all applicable pollutant criteria. In accordance with Section 2.4.2 of the SIP, the Discharger is to instruct the laboratory analyzing samples for priority pollutants to establish calibration standards so that the ML 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. Report all peaks identified by the EPA test methods.

³ Field measurements.

When conducted, the location, time, and date of landscape irrigation using reclaimed groundwater shall be included in the monthly monitoring report. If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed above, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge. In no event shall the Discharger be required to monitor and record data more often than twice the frequencies listed in the schedule

REPORTING

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

In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, and should be determined and recorded.

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

By **30 January** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

- a. *The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.*
- b. A statement certifying when the flow meter and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration (Standard Provision C.6).
- c. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the groundwater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for accuracy.

The Discharger may also be requested to submit an annual report to the Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

All reports submitted in response to this Order shall comply with the signatory requirements of Standard Provision D.6.

The Discharger shall implement the above monitoring program on the first day of the month following effective date of this Order.

The Discharger shall implement the above monitoring program as of the date of this Order.

MONITORING AND REPORTING PROGRAM NO. R5-2002-0212
UNITED STATES DEPARTMENT OF THE AIR FORCE
AIRCRAFT CONTROL AND WARNING SITE
GROUNDWATER TREATMENT SYSTEM
FORMER MATHER AIR FORCE BASE
SACRAMENTO COUNTY

20

Ordered By: _____ THOMAS R. PINKOS, Executive Officer

_____ 6 December 2002

(Date)

INFORMATION SHEET

WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2002-0212
DEPARTMENT OF THE AIR FORCE
AIRCRAFT CONTROL AND WARNING SITE
GROUNDWATER TREATMENT SYSTEM
FORMER MATHER AIR FORCE BASE
SACRAMENTO COUNTY

Site Description and Background

The United States Department of the Air Force (hereafter Discharger) owns and operates a treatment and disposal system designed to extract groundwater contaminated with volatile organic compounds (VOC's), remove the contaminants, and discharge the treated water to Mather Lake. The Discharger has submitted various documents containing the information necessary to prepare a permit renewal to discharge treated groundwater under the National Pollutant Discharge Elimination System (NPDES) from the former Mather Air Force Base Aircraft Control and Warning (AC&W) Ground Water Treatment System (GWTS). These documents include: The Quarterly Basewide Groundwater Monitoring Reports, the AC&W Site Record Of Decision (ROD, December 1993), and the Final Explanation of Significant Difference to the AC&W Operable Unit (OU) Record of Decision (ESD, June 1997).

Historical records indicate that, from 1958 to 1966, waste solvents were disposed of at the AC&W Site. Later remedial investigations at the AC&W Site identified trichloroethylene (TCE) in shallow groundwater. The previous practice of subsurface disposal is assumed to be the cause of TCE contamination in the groundwater. Other releases that have occurred at the AC&W Site include fuel that leaked from underground storage tanks at Installation Restoration Program Sites 25, 30, and 47; however analyses of soil samples collected during past investigations indicated that no contamination remains at these sites.

The TCE plume originates in the area near the Federal Aviation Radar Dome and extends into the north-east section of the former Mather Air Force Base housing area. Groundwater flows generally to the southwest at the AC&W Site.

The GWTS discharges treated water to the southern lobe of Mather Lake via Outfall 001. Outfall 001 is immediately adjacent to the outlet of the lake, as shown on Attachment B. Mather Lake is a public recreation area within the former Mather Air Force Base boundaries. During the wet season, Mather Lake fills and overflows to Morrison Creek, which is tributary to the Sacramento – San Joaquin Delta, a water of the United States. Treated groundwater may also be used for irrigation of landscaping at various places within the former Mather Air Force Base boundaries.

The discharge of treated groundwater to Mather Lake was previously regulated by Waste Discharge Requirements (WDR) Order No. 96-258, NPDES Permit No. CA0083992, which was adopted by the Regional Board on 20 September 1996.

Groundwater Extraction and Treatment

The groundwater extraction and treatment system operated by the Discharger consists of eight six-inch-diameter extraction wells and a single column, reverse flow, air stripping tower. Water enters the top of the tower falling down over the packing material. Two pumps distribute the treated water from an effluent tank via a six-inch pipeline to the discharge point at Mather Lake.

The ROD and ESD describe the engineering features of the pump and treatment system conceptually, stating that detailed specifications would be developed during the design phase. The design of the pump and treat system determined that a treatment rate of approximately 270 gallons per minute pumped from eight extraction wells would be used to hydraulically capture the groundwater contaminant concentrations above 5 micrograms per liter ($\mu\text{g/L}$, ppb) of TCE as specified by the ROD. The Final Preliminary Engineering Report for AC&W Pump and Treat System described the Ground Water Treatment Plant design as follows:

Groundwater Design Flow:	0.49 million gallons per day (mgd)
Monthly Average Flow:	0.39 mgd

The AC&W Ground Water Treatment Plant has been operating since 1995 and has consistently met the effluent limit of $0.5 \mu\text{g/L}$ (ppb) of total volatile organic compounds (VOC's) with the exception of two separate sampling events ($1.9 \mu\text{g/L}$ (ppb) of TCE in May 1996 and $1.4 \mu\text{g/L}$ (ppb) of TCE in March of 1999). The Discharger has submitted limited groundwater and background surface water data. The following is a summary of the influent and effluent groundwater characteristics as reported in the Third Quarter 2001 Basewide Groundwater Monitoring Report:

<u>Constituent</u>	<u>Influent Concentration:</u>	<u>Effluent Concentration:</u>
Trichloroethylene	23 – 46 $\mu\text{g/L}$ (ppb)	ND ($<0.5 \mu\text{g/L}$, ppb)
Specific Conductivity	104 – 144 $\mu\text{mhos/cm}$	111- 177 $\mu\text{mhos/cm}$
pH	7.04 – 8.06 pH Units	6.90 – 8.67 pH Units

ND = Not Detected

Receiving Waters

Outfall 001 discharges to Mather Lake. Mather Lake is a public recreation area within the former Mather Air Force Base boundaries. During the wet season, Mather Lake fills and overflows to Morrison Creek. From Mather Lake, Morrison Creek flows west-southwest to the Bufferlands area of the Sacramento- San Joaquin Delta south of Freeport.

Beneficial Uses

The Basin Plan at page II-2.00 states that: “Existing and potential beneficial uses that currently apply to surface waters of the basins are presented in Figure II-1 and Table II-1. The beneficial uses of any

specifically identified water body generally apply to its tributary streams.” The Basin Plan does not specifically identify beneficial uses for Mather Lake or Morrison Creek, but the Basin Plan does identify present and potential uses for the Sacramento – San Joaquin Delta, to which Mather Lake and Morrison Creek are tributary.

The Basin Plan identifies the following existing **beneficial uses** of the Sacramento – San Joaquin Delta: municipal and domestic supply, agricultural supply including both irrigation and stock watering; industrial process water supply; industrial service supply; body contact recreation, other non-body contact recreation; warm freshwater habitat; cold freshwater habitat, warm and cold migration of aquatic organisms, warm habitat spawning, reproduction, and/or early development; wildlife habitat; and navigation. In addition, State Board Resolution No. 88-63, incorporated into the Basin Plan pursuant to Regional Board Resolution No. 89-056, requires the Regional Board to assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in Table II-1.

The Basin Plan on page II-1.00 states: “Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning...” and with respect to disposal of wastewaters states that “... disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.”

In reviewing whether the existing and/or potential beneficial uses of the Sacramento – San Joaquin Delta apply to Mather Lake and Morrison Creek, the Board has considered the following facts:

a. *Domestic Supply and Agricultural Supply*

The Regional Board is required to apply the beneficial uses of municipal and domestic supply to the Mather Lake and Morrison Creek based on State Board Resolution No. 88-63 which was incorporated into the Basin Plan pursuant to Regional Board Resolution 89-056. In addition, the State Water Resources Control Board (SWRCB) has issued water rights to existing water users along Morrison Creek and the Sacramento – San Joaquin Delta downstream of the discharge for domestic and irrigation uses. In addition to the existing water uses, growth in the area, downstream of the discharge is expected to continue, which presents a potential for increased domestic and agricultural uses of the water in Morrison Creek and the Sacramento – San Joaquin Delta.

b. *Water Contact and Non-Contact Recreation and Esthetic Enjoyment*

The Board finds that the discharge flows through residential areas, and there is ready public access to Mather Lake and Morrison Creek. Exclusion of the public is unrealistic and contact recreational activities currently exist in and along Mather Lake and Morrison Creek and these uses are likely to increase as the population in the area grows. Prior to flowing into the Sacramento – San Joaquin Delta, Morrison Creek flows through areas of general public access, meadows, residential areas, and commercial areas.

c. *Groundwater Recharge*

Since water is maintained in Mather Lake year-round, it is reasonable to assume that water in the Lake is lost by evaporation, flow downstream, and percolation to groundwater which may provide a source of municipal and irrigation water supply.

d. *Cold and Warm Freshwater Aquatic Habitat*

The Basin Plan (Table II-1) designates the Sacramento – San Joaquin Delta as a cold and warm freshwater habitat. The California Department of Fish and Game has found several warm water species of aquatic life in Morrison Creek during field surveys. They also reported that a study conducted by the Sacramento Regional County Sanitation District found Chinook salmon, a cold water species, in the Bufferlands area, which includes Upper and Lower Beach Lakes. As noted previously, Mather Lake seasonally flows to Morrison Creek, which seasonally flows into the Bufferlands area, which is within the legal boundary of the Sacramento – San Joaquin Delta. Therefore, pursuant to the Basin Plan (Table II-1, Footnote (2)), the cold designation applies to Morrison Creek and Mather Lake. The cold-water habitat designation necessitates that the receiving water dissolved oxygen concentration be maintained at, or above, 7.0 milligrams per Liter (mg/L, ppm). This approach recognizes that, if the naturally occurring receiving water dissolved oxygen concentration is below 7.0 mg/L (ppm), the Discharger is not required to improve the naturally occurring level.

Upon review of the flow conditions, habitat values, existing and potential beneficial uses of Mather Lake and Morrison Creek, and the facts described above, the Regional Board finds that the beneficial uses identified in the Basin Plan for the Sacramento – San Joaquin Delta are applicable to Mather Lake and Morrison Creek.

The Regional Board also finds that based on the available information and on the Discharger's application, that Morrison Creek, absent the discharge, is at times a seasonal and/or ephemeral waterbody. The Board also finds that at times, the discharge from Outfall 001 represents the only source of recharge to Mather Lake. Since; flows in Morrison Creek are of a seasonal and/or ephemeral nature, and, at times the discharge from Outfall 001 represents the sole source of recharge to Mather Lake, and, treated groundwater is used for irrigating landscaping at various places within the former Mather Air Force Base, the designated beneficial uses must be protected, but no year-round credit for receiving water dilution is available. Although the discharge, at times, maintains the aquatic habitat, constituents may not be discharged that may cause harm to aquatic life. At other times, flows to Mather Lake and Morrison Creek help support the cold-water aquatic life. The lack of dilution results in more stringent effluent limitations to protect contact recreational uses, drinking water standards, agricultural water quality goals and aquatic life. Significant dilution may occur during the irrigation season, and immediately following high rainfall events.

CTR, NTR, and SIP

USEPA adopted the *National Toxics Rule* (NTR) on 5 February 1993 and the *California Toxics Rule* (CTR) on 18 May 2000. These Rules contain water quality standards applicable to this discharge. The State Water Resources Control Board (SWRCB) adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (known as the State Implementation Policy or SIP), which contains guidance on implementation of the NTR and the CTR.

Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numeric water quality standard. The absence of a limitation for a constituent indicates either a lack of information is available for evaluation, or the constituent does not have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numeric water quality standard. As a means of collecting additional information necessary to conduct a complete reasonable potential analysis, this Order contains provisions that:

- d. Require the Discharger to conduct a study and provide information as to whether the levels of NTR, CTR, or other pollutants in the discharge have the reasonable potential to cause or contribute to an in-stream excursion above a numeric or narrative water quality standard, including Basin Plan numeric or narrative objectives and NTR and CTR pollutants;
- e. If pollutants in the discharge have a reasonable potential to cause or contribute to an in-stream excursion above a water quality standard, requires the Discharger to submit information to calculate effluent limitations for those pollutants; and
- f. Allow the Regional Board to reopen this Order and include effluent limitations for those pollutants.

On 10 September 2001, the Executive Officer issued a letter, in conformance with Section 13267 of the California Water Code, requiring the Discharger to prepare a technical report assessing effluent and receiving water quality. A copy of that letter, including its Attachments I through IV, are incorporated into this Order as Attachment C. This Order includes a Provision which is intended to be consistent with the requirements of Attachment C in requiring sampling and reporting of NTR, CTR, and additional constituents to determine if the discharge has a reasonable potential to cause or contribute to an in-stream excursion above a water quality standards.

Previous Permit Effluent Limitations

Previous Order No. 96-258 included effluent limitations for total VOC's based upon best practicable treatment of contaminated groundwater. The former Mather Air Force Base AC&W Site GWTS is designed, constructed, and operated to meet the effluent limitations prescribed in the previous Order. These effluent limitations for Total VOC's are retained in this new Order.

Groundwater

Groundwater is extracted from wells on the eastern perimeter of the former Mather Air Force Base, treated, and then subsequently discharged to nearby Mather Lake. Monitoring of the influent from the groundwater wells to the treatment plant indicates the combined Total Dissolved Solids (TDS) concentrations are typically less than 150 mg/L (ppm). The treatment process does not result in a significant change in the mineral or nutrient concentrations of the groundwater. Therefore the discharge of the treated groundwater to Mather Lake poses minimal threat to groundwater quality beneath the Lake.

Landscape Irrigation, Use of Reclaimed Groundwater

Previous Order No. 96-258 provided that treated groundwater may be used for landscape irrigation. This new Order includes Limitations for the use of reclaimed water to ensure protection of surface waters, groundwater, and potable drinking water supplies