CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

STATEMENT OF BASIS
FOR
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
AND
GENERAL WASTE DISCHARGE REQUIREMENTS
FOR
DISCHARGES OF EXTRACTED AND TREATED GROUNDWATER
RESULTING FROM THE CLEANUP OF GROUNDWATER
POLLUTED BY VOLATILE ORGANIC CONSTITUENTS
INTO SURFACE WATERS

Public Notice No. 7-02-10
Application NPDES No. CAG917001
Board Order No. R7-2002-1000

1. Need for General Waste Discharge Requirements (WDRs)

There are currently over 230 cases of soil and/or groundwater pollution in the Colorado River Basin Region (CRBR) resulting from leaks at fuel storage and dispensing facilities and unauthorized discharges of volatile organic compounds (VOCs), including purgeable halocarbons and aromatic compounds, into State waters. More cases are expected. Remedial activities at many of these sites are expected to necessitate discharge of treated groundwater to surface waters within the CRBR. It is anticipated that their number will exceed the capacity of available staff to develop and bring individual tentative WDRs to the Board for adoption. The adoption of a general National Pollutant Discharge Elimination System (NPDES) permit and/or general WDRs will significantly alleviate this problem, and enable the Board to better utilize limited staff resources.

2. Description of General NPDES Permit

Title 40 CFR 122.28 provides for the issuance of general permits to regulate discharges of waste which result from similar operations, are the same types of waste, require the same effluent limitations, require similar monitoring, and are more appropriately regulated under a general permit rather than individual permits. The United States Environmental Protection Agency (EPA), Region IX, has granted authorization for the State to issue general permits.

A general permit for existing and proposed discharges of extracted and treated groundwater polluted by VOCs into surface waters of the CRBR meets the requirements of 40 CFR 122.28. To qualify for this general permit, proposed discharges must:

a. Result from substantially similar operations;

b. Be the same types of waste;

c. Require the same effluent limitations for the protection of the beneficial uses of surface waters in the CRBR;

d. Require similar monitoring; and

e. Be more appropriately regulated under a general permit rather than individual permits.

3. Status of Permit

On June 11, 1998, the Regional Board adopted General WDRs Order No. 98-400 (NPDES Permit No. CAG917001) in accordance with 40 CFR 122.28 to regulate discharges of extracted and treated

groundwater resulting from the cleanup of groundwater polluted by volatile organic compounds (VOCs) into surface waters. Pollution of these sites is typically caused by leaky containment vessels for fuel, solvents, and other wastes at service stations and similar operations. Recent developments in treatment technology, laboratory detection methods, and State water quality criteria for these constituents have made it necessary to revise Order No. 98-400.

This general permit updates Order No. 98-400 and establishes WDRs for discharges resulting from the cleanup of VOC polluted groundwater. Cleanup of these sites involve similar treatment technologies and result in similar waste discharges. The regulation of these discharges includes similar effluent limits and monitoring requirements. Consequently, these discharges are efficiently regulated with a general permit.

4. Description of Discharge

All discharges authorized under this General Permit are of extracted and treated groundwater resulting from the cleanup of groundwater polluted by volatile organic compounds (VOCs) into surface waters. Pollution of these sites is typically caused by leaky containment vessels for fuel, solvents, and other wastes at service stations and similar operations. VOCs of concern include petroleum hydrocarbons (gasoline, diesel, kerosene, fuel oil, and heavier ranges), purgeable hydrocarbons, aromatic hydrocarbons, and fuel octane enhancers (methyl tertiary butyl ether (MTBE), methanol, ethanol, tertiary butyl alcohol (TBA), and di-isopropyl ether).

5. Receiving Water

Coverage under this General Permit is available to discharges throughout the Colorado River Basin Region. The beneficial uses of waters throughout the Region include:

a. Municipal and Domestic Supply (MUN)
b. Agricultural Supply (AGR)
c. Aquaculture (AQUA)
d. Industrial Service Supply (IND)
e. Groundwater Recharge (GWR)
f. Fresh Water Replenishment (FRSH)
g. Water Contact Recreation (REC I)[1,2]
h. Non-Contact Water Recreation (REC II)[1]
i. Warm Water Habitat (WARM)
j. Cold Freshwater Habitat (COLD)
k. Wildlife Habitat (WILD)
l. Hydropower Generation (POW)
m. Preservation of Rare, Endangered or Threatened Species (RARE)[3]

6. Basis for Limitations in the Proposed General WDRs

This Order includes requirements that implement the CRBR's Water Quality Control Plan (Basin Plan), which was adopted by the Regional Board on November 17, 1993 and subsequently approved by the Office of Administrative Law on August 3, 1994. The Basin Plan specifies water quality objectives and beneficial uses for the waters of the CRBR.

[1] Unauthorized Use
[2] The only REC I usage that is known to occur is from infrequent fishing activity
[3] Rare, endangered, or threatened wildlife exists in or utilizes some of these waterway(s). If the RARE beneficial use may be affected by a water quality control decision, responsibility for substantiation of the existence of rare, endangered, or threatened species on a case-by-case basis is upon the California Department of Fish and Game on its own initiative and/or at the request of the Regional Board; and such substantiation must be provided with a reasonable time frame as approved by the Regional Board

This General Permit specifies numeric and narrative limits for the control of toxic substances. These limits implement relevant Basin Plan objectives and other State and Federal requirements. These limits are based on best available technology economically achievable and best professional judgement using the following:

a. The 1994 Basin Plan.

b. Code of Federal Regulations (40 CFR Parts 122-144).

c. Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California adopted March 2, 2000 by the State Water Resources Control Board.

d. Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California (California Toxics Rule) (40 CFR 131.38).

e. National Toxics Rule (NTR) (40 CFR 131.36).

f. EPA's Maximum Contaminant Levels (MCLs) for Drinking Water.

g. State Department of Health Services' (DHS) MCLs and State Action Levels.

h. Current analytical detection limits.

Groundwater pollutant plumes are often complex mixtures of hundreds of petroleum-related compounds that make complete chemical analysis very expensive, often impractical, and sometimes impossible due to sample matrix interferences, constituent masking, or the lack of standardized analytical techniques.

Further, neither the State nor the USEPA has proposed or established water quality criteria for many of the petroleum hydrocarbon compounds that are likely to be found in the discharges authorized under this permit. Therefore, indicator constituents for the detection and evaluation of petroleum related compounds will be used to monitor the discharges authorized under this General Permit. The indicators used to evaluate compliance with gasoline and diesel related compounds are benzene, toluene, ethylbenzene, and xylene (BTEX) and total petroleum hydrocarbons (TPH). For chlorinated hydrocarbon solvents such as trichloroethylene (TCE) and tetrachloroethylene (PCE), the specific chemical constituents can be used to determine compliance. The limits for these constituents are based on EPA's and DHS's MCLs and are summarized in the tables below.

Oxygenated fuels have been used in California to reduce air pollution. To date, methyl tertiary-butyl ether (MTBE) is the most widely used fuel oxygenates in California. Other fuel oxygenates that have been used include tertiary-amyl methyl ether (TAME), tertiary-butyl alcohol (TBA) methanol (MeOH), and Disopropyl ether (DIPE). The State DHS has established a drinking water MCL of 13 mg/L for MTBE and an action level of 12.0 for TBA.
A number of treatment methods are available for the treatment of contaminated groundwater. The more commonly used methods include air stripping, air sparging, granular activated carbon adsorption, UV-peroxidation, nutrient enhanced biodegradation, and a combination of two or more of the above technologies. To remediate subsurface soil contamination, vapor extraction systems and in-situ bio-remediation are commonly used. Most of these systems, if designed and operated properly, can lower the concentrations of the pollutants to below detection limits. For constituents without established water quality objectives, technology based standards were applied. Technology based standards were derived from reasonable detection limits for each constituent.

In order to address the wide range of surface water beneficial uses throughout the region, this General Permit applies separate effluent limitations for discharges to water bodies dependent upon the beneficial uses of the receiving waters. Receiving waters that have been designated to support

domestic and municipal supply (MUN) will be held to effluent limitations based on human health and drinking water standards. Discharges to receiving waters that are NOT designated as MUN will be held to standards that protect aquatic life and human health based on the California Toxic Rule. The following tables list the effluent limitations contained in the General Permit and show the criteria used to set the limitation.

EFFLUENT LIMITS FOR MUNICIPAL DESIGNATED WATERS

Constituent	Instantaneous Maximum (ug/L)	Effluent Limit Criteria
Benzene	1.0	DHS MCL
Carbon Tetrachloride	0.25	CTR
Chloroform	100	DHS MCL
1,1-Dichloroethane (1,1-DCA)	5.0	DHS MCL
1,2-Dichloroethane (1,2-DCA)	0.38	CTR
1,1-Dichloroethylene (1,1-DCE)	0.057	CTR
cis-1,2-Dichloroethylene	6	DHS MCL
trans-1,2-Dichloroethylene	10	DHS MCL
Dichloromethane (Methylene Chloride)	4.7	CTR
Di-isopropyl ether (DIPE)	5	Technology
Ethanol	5	Technology
Ethyl benzene	30	EPA MCL (secondary)
Total Lead	15	DHS MCL
Methanol	5	Technology
Methyl tertiary-butyl ether (MTBE)	13	DHS Action Level
Tertiary-amyl methyl ether (TAME)	5	Technology
Tetrachloroethylene (PCE)	0.8	CTR
Toluene	40	EPA MCL (secondary)
Total Petroleum Hydrocarbons (TPHs)	100	Technology
1,1,1-Trichloroethylane (1,1,1-TCA)	200	DHS MCL
1,1,2-Trichloroethylane (1,1,2-TCA)	0.6	CTR
Trichloroethylene (TCE)	2.7	CTR
Trichlorotriflouroethane	5	Technology
Vinyl Chloride	0.5	DHS MCL
Total Xylenes	20	EPA MCL (secondary)

EFFLUENT LIMITS FOR NON-MUNICIPAL DESIGNATED WATERS

Constituent	Instantaneous Maximum (μg/L)	Effluent Limit Criteria
Benzene	70	CTR
Carbon Tetrachloride	4.4	CTR
Chloroform	100	DHS MCL
1,1-Dichloroethane (1,1-DCA)	5.0	DHS MCL
1,2-Dichloroethane (1,2-DCA)	99	CTR
1,1-Dichloroethylene (1,1-DCE)	3.2	CTR
cis-1,2-Dichloroethylene	10	Technology
trans-1,2-Dichloroethylene	140,000	CTR
Dichloromethane (Methylene Chloride)	1,600	CTR
Di-isopropyl ether (DIPE)	5	Technology
Ethanol	1000	Technology
Ethyl benzene	29,000	CTR
Total Lead	15	DHS MCL

Methanol	1000	Technology
Methyl tertiary-butyl ether (MTBE)	13	Technology
Tertiary-amyl methyl ether (TAME)	5	Technology
Tetrachloroethylene (PCE)	8.85	CTR
Toluene	200,000	CTR
Total Petroleum Hydrocarbons (TPHs) 100		Technology
1,1,1-Trichloroethylene (1,1,1-TCA)	200	DHS MCL
1,1,2-Trichloroethylene (1,1,2-TCA)	42	CTR
Trichloroethylene (TCE)	81	CTR
Trichlorotriflouroethane	5	Technology
Vinyl Chloride	525	CTR
Total Xylenes	1750	Technology

7. Antidegradation Policies

Pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (collectively the antidegradation policy), the Regional Board shall ensure that any increase in pollutant loading to a receiving water meets the requirements stated in the foregoing policies. At a minimum, permitting actions shall be consistent with the following:

a. Existing in stream water uses and the level of water quality necessary to protect existing beneficial uses shall be maintained and protected;

b. Where the quality of the waters exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, the quality shall be maintained and protected unless the State finds, after full satisfaction of intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social developments in the area in which the waters are located; and

c. In those cases where potential water quality impairment associated with a thermal discharge is involved, the non-degradation policy and implementing method shall be consistent with Section 316 of the Clean Water Act.

The Regional Board, in establishing the requirements contained herein, has taken into consideration the requirements of the State and federal non-degradation policies and has determined that:

a. The conditions and effluent limitations established in this Board Order for discharges of treated groundwater to surface waters in this Region ensure that the existing beneficial uses and quality of surface waters in the Region will be maintained and protected;

b. Discharges regulated by this Board Order should not lower water quality if the terms and conditions of this Board Order are met; and

c. Thermal discharges potentially impairing water quality are not authorized under the terms and conditions of this Board Order, thus, Section 316 of the Clean Water Act is not applicable.

8. Prohibitions and Provisions

Prohibitions D.1 through D.6 of this Order prohibit:

1. Bypass, overflow, discharge or spill of untreated or partially treated groundwater.

2. The discharge of waste to land not owned or controlled by the discharger.

3. Discharge of treated wastewater at a location or in a manner different from that approved by the Regional Board's Executive Officer.

4. The bypass or overflow of untreated groundwater to waters of the State, except as allowed in the Standard Provision No. 13, as contained in the Standard Provisions for National Pollutant Discharge Elimination System Permit (hereinafter Standard Provisions), dated October, 1990.

5. Extraction of groundwater for treatment in excess of the design capacity of the treatment system as specified in the Dischargers NOA from the Executive Officer.

6. Discharge of material other than extracted and treated groundwater from the investigation and cleanup of VOC polluted groundwater and added treatment chemicals approved by the Regional Board's Executive Officer.

Monitoring of the groundwater treatment system influent and effluent and the receiving waters is required to satisfy the Basin Plan and NPDES requirements. Monitoring is the primary means of ensuring that the permit limitations are met and the basis for enforcement actions against dischargers who are in violation of their permit limits. This Board Order authorizes and directs the Regional Board's Executive Officer to prescribe a monitoring program appropriate for the type of cleanup and proposed discharge. Results of the Self-Monitoring Program analysis will be reviewed after six months and on a case-by-case basis, the Regional Board's Executive Officer may modify the Self-Monitoring Program to cover constituents of concern.

The Board Order will require that Discharger(s) (parties deemed responsible by the Regional Board for remediation of groundwater polluted by VOCs) to file a Notice of Intent (NOI) to be eligible for coverage under this General Permit. The NOI shall consist of a Report of Waste Discharge (Form 200), an NPDES Application Form 12D, and the appropriate filing fee. Additionally, the Discharger must submit the following information:

a. A discussion of how the proposed discharge is consistent with the type of discharge eligible for coverage under this General Permit;

b. An explanation of why a discharge to surface waters is the only feasible method for disposing of the treated effluent supported by a letter from the local publicly owned treatment works (POTW) stating that they cannot accept the discharge;

c. A general discussion of the proposed cleanup project including descriptions of the extraction method, treatment processes, design parameters, flow rates and expected treatment performance;

d. A schematic of the treatment process;

e. A site map showing the extraction wells, monitoring wells, treatment site, and the storm drain or surface water discharge location;

f. A map showing the path from the point of initial discharge to the ultimate location of discharge; and

g. Any other information deemed necessary by the Board's Executive Officer.

The Board Order also contains standard provisions, which are placed in all NPDES permits issued by the Regional Board. These provisions include compliance with a self-monitoring program, immediate compliance with the Board Order, and submittal of an application for proposed discharge not later than 180 days in advance of the expiration of WDRs.

9. Discharge Authorization Letter

Upon receipt of a complete NOI and the additional information required by items "a" through "g" above, the Regional Board's Executive Officer will determine whether the proposed discharge complies with the following criteria:

1. The proposed discharge results from the cleanup of groundwater polluted by VOCs;

2. The proposed discharge is to surface waters in this region;

3. The proposed discharge is classified as a minor discharge; and

4. The proposed treatment system and associated operation, maintenance, and monitoring plans are believed to be reasonably capable of meeting the provisions, prohibitions, effluent limitations, and receiving water limitations of this proposed Board Order.

If the Regional Board's Executive officer determines that the proposed discharger meets this criteria, a Notice of Authorization (NOA) will be issued.

10. Expiration Date

The expiration date of the General Permit is June 26, 2007.

11. Written Comments

Interested parties and agencies are invited to submit written comments on the proposed WDRs and the Regional Board's Executive Officer's proposed determinations. Comments should be submitted in writing not later than April 24, 2002, to:

Executive Officer
California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

The application number shall appear on the first page of any submitted comments. All comments received by the above date will be considered in the formulation of the final determinations.

12. Public Hearing

The WDRs will be considered by the Regional Board at a public hearing to be held at the City of La Quinta City Council Chambers, 78495 Calle Tampico, La Quinta on June 26, 2002.

13. WDRs Appeals

Any person may petition the State Board to review the decision of the Regional Board regarding WDRs. A petition must be made within 30 days of the Regional Board's hearing.

14. Additional Information

Persons wishing further information may write to the following address:

California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

or call the Regional Board at (760) 346-7491.