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ORDER NO. R8-2003-0085

ORDER NO. R8-2005-0110

California Regional Water Quality Control Board
Santa Ana Region

ORDER NO. R8-2002-0007
NPDES No. CAG918001

GENERAL GROUNDWATER CLEANUP PERMIT FOR DISCHARGES TO SURFACE
WATERS OF EXTRACTED AND TREATED GROUNDWATER RESULTING FROM THE
CLEANUP OF GROUNDWATER POLLUTED BY PETROLEUM HYDROCARBONS,
SOLVENTS AND/OR PETROLEUM HYDROCARBONS MIXED WITH LEAD AND/OR
SOLVENTS

for the
Santa Ana Region

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Board), finds that:

1. On October 1, 1996, the Regional Board adopted Order No. 96-18, National Pollutant Discharge Elimination System (NPDES) Permit No. CAG918001. Order No 96-18 contained the waste discharge requirements for discharges into surface waters of extracted and treated groundwater resulting from the cleanup of groundwater polluted by petroleum hydrocarbons and/or solvents at service stations and similar sites. Order No. 96-18 expired on October 1, 2001.
2. Order No. 96-18 satisfied all the criteria cited in 40 CFR¹ 122.28 and as such, was classified as a General NPDES Permit. 40 CFR 122.28 pertains to the issuance of general permits to regulate discharges of waste that meet the following criteria:
 - a. Waste discharges involving the same or substantially similar types of operations;
 - b. Discharges of the same types of wastes;
 - c. Require the same effluent limitations or operating conditions;
 - d. Require the same or similar monitoring; and
 - e. Are more appropriately regulated under a general permit rather than individual permits.
3. The adoption of Order No. 96-18 has expedited the processing of numerous applications for waste discharge requirements and the early implementation of groundwater cleanup programs. The General NPDES Permit allowed the Regional Board to better utilize limited staff resources.
4. It is anticipated that within the next few years many more groundwater cleanup programs will be initiated on new sites where groundwater is found to be polluted with petroleum hydrocarbons, solvents and/or petroleum hydrocarbons mixed with lead, and/or solvents.

¹ *CFR is the Code of Federal Regulations.*

5. Currently, there are approximately 185 enrollees² under Order No. 96-18. Most of these enrollees are expected to continue the discharges from their groundwater cleanup facilities. Therefore, renewal of this general permit is necessary to continue this expedited permitting process and to promote the continued operation of existing groundwater remediation projects.
6. Entity(ies)/individual(s) proposing to discharge treated groundwater³ are hereinafter referred to as “discharger” and are subject to the terms and conditions of this Order.
7. For coverage under this general permit, a discharger is required to submit an application for the proposed discharge together with the certification report required by Section H.7: "REQUIRED REPORTS AND NOTICES," and to get approval from the Executive Officer. If the proposed discharge meets the requirements of this Order, the Executive Officer will provide the discharger with a written authorization to initiate the discharge. If not, an individual NPDES permit will be developed for consideration by the Regional Board.
8. It is appropriate to allow the Executive Officer to increase and/or reduce the number of constituents being monitored and the frequency of monitoring when the discharger meets the conditions specified in this Order.
9. This Order permits the discharge into surface waters of treated groundwater³ that meets the requirements of this Order. It does not preempt or supersede the authority of municipalities, flood control agencies, or other local agencies to prohibit, restrict, or control discharges of waste to storm drain systems or other watercourses subject to their jurisdiction.
10. The Regional Board recognizes the need to consider any unique factors relating to a discharger. In order to consider any unique factors applicable to a particular discharger or discharge, it will be necessary for the discharger to apply for an individual NPDES permit in accordance with Section 13376 of the California Water Code.
11. The Executive Officer of the Regional Board or the Regional Administrator of the EPA may require any person authorized to discharge waste by this general permit to subsequently apply for and obtain an individual NPDES permit. Any interested person may petition the Executive Officer or the Regional Administrator to take action in accordance with this finding. Cases where an individual NPDES permit may be required include the following:
 - a. The discharger is not in compliance with the conditions of this Order or the discharge authorization letter from the Executive Officer;
 - b. A change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants applicable to the point source;

² Refers to those dischargers who are currently covered under the general permit.

³ Polluted by petroleum hydrocarbons, petroleum hydrocarbons mixed with lead, and/or solvents.

- c. Effluent limitation guidelines are promulgated for point sources covered by the general NPDES permit;
 - d. Changes to water quality control plan containing requirements applicable to such point sources are approved; or
 - e. The requirements of 40 CFR 122.28 (a) are not met.
12. A Water Quality Control Plan (Basin Plan) became effective on January 24, 1995. The Basin Plan contains beneficial uses and water quality objectives for waters in the Santa Ana Region.
13. The existing and potential beneficial uses of surface waters in the Santa Ana Region include:
 - a. Municipal and Domestic Supply,
 - b. Agricultural Supply,
 - c. Industrial Service Supply,
 - d. Industrial Process Supply,
 - e. Groundwater Recharge,
 - f. Hydropower Generation,
 - g. Water Contact Recreation,
 - h. Non-contact Water Recreation
 - i. Warm Freshwater Habitat,
 - j. Limited Warm Freshwater Habitat,
 - k. Cold Freshwater Habitat,
 - l. Preservation of Biological Habitats of Special Significance,
 - m. Wildlife Habitat,
 - n. Marine Habitat,
 - o. Shellfish Harvesting,
 - p. Estuarine Habitat,
 - q. Rare, Threatened or Endangered Species, and
 - r. Spawning, Reproduction, and Development.
14. Many surface waters within the region recharge underlying groundwater basins. The existing and potential beneficial uses of groundwater within the Santa Ana River include:
 - a. Municipal and Domestic Supply,
 - b. Agricultural Supply,
 - c. Industrial Service Supply, and
 - d. Industrial Process Supply
15. The requirements contained in this Order are necessary to implement the Basin Plan.

16. Effluent limitations and national standards of performance established pursuant to Section 301, 302, 303(d), 304, 306, and 307 of the Federal CWA and amendments thereto are applicable to this type of discharges.
17. On June 8, 1989, pursuant to 40 CFR 122.28, the State Water Resources Control Board (hereinafter State Board), applied to the Environmental Protection Agency (hereinafter EPA) for revisions of its NPDES program in accordance with 40 CFR 123.62 and 403.10. The application included a request to add general permit authority to its approved NPDES program. On September 22, 1989, Region IX EPA approved the State Board's request and granted authorization for the State's issuance of general NPDES permits.
18. On April 17, 1998, the Regional Board adopted Resolution No. 98-9 amending the Basin Plan for the Santa Ana River Basin to incorporate a Nutrient Total Maximum Daily Load (TMDL) for the Newport Bay/ San Diego Creek Watershed. The TMDL was amended by Resolution No. 98-100 on October 9, 1998 and thereafter approved by the State Water Resources Control Board, Office of Administrative Law and the US EPA.
19. The nutrient TMDL specifies load allocations for total nitrogen inputs to the San Diego Creek/Newport Bay watershed from "undefined sources", which include groundwater cleanup project discharges. The load allocations require that a 50% reduction in the total nitrogen input from these discharges in the summer (April – September) be achieved by 2002, a 50% reduction in summer inputs by 2007, and a 50% reduction in winter inputs (October – March) by 2012. The TMDL specifies that the Regional Board may require earlier compliance where it is feasible and reasonable. There is an ongoing effort by watershed stakeholders to design and implement a regional program to achieve the nitrogen reductions required by the TMDL. Implementation of this program, with participation by the groundwater cleanup dischargers, would likely enable the dischargers to achieve the requisite nitrogen reductions. Therefore, it is feasible and reasonable to require the early implementation of the requisite 50% reduction in total nitrogen inputs from groundwater cleanup discharges in the watershed. The dischargers may elect to implement other strategies, e.g., additional treatment systems, to achieve the 50% reduction. This Order requires each groundwater cleanup discharger within the San Diego Creek/Newport Bay watershed to submit a plan for approval by the Regional Board's Executive Officer that identifies the method(s) and schedule by which the discharger proposes to achieve a 50% reduction in the total nitrogen of their discharges. The schedule is to reflect the shortest practical time necessary to achieve the 50 % reduction, but in no case extend beyond January 1, 2007.

20. On April 17, 1998, the Regional Board also adopted Resolution No. 98-69, amending the Basin Plan to include a TMDL for sediment in the Newport Bay/San Diego Creek Watershed. The sediment TMDL requires the implementation of Best Management Practices (BMPs) to control sediment to provide a reasonable assurance that water quality standards will be met. This sediment TMDL was amended by Resolution No. 98-101 on October 9, 1998 and has also been approved by the State Water Resources Control Board, Office of Administrative Law and the U.S. EPA. The sediment TMDL did not identify wasteload allocations specific to discharges associated with groundwater cleanup activities. A requirement for nutrient reductions in these discharges would likely hinder the timely correction of groundwater quality problems and their adverse impacts on beneficial uses.
21. On May 18, 2000, the U.S. Environmental Protection Agency issued a final rule for the establishment of Numeric Criteria for Priority Toxic Pollutants necessary to fulfill the requirements of Section 303(c)(2)(B) of the Clean Water Act for the State of California. This rule is commonly referred to as the California Toxics Rule.
22. Federal Regulations require permits to include limitations for 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 of a water quality standard.
23. On March 2, 2000, the State Water Resources Control Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California. This Policy includes implementation provisions for the California Toxics Rule. The Policy specifies a methodology to determine if pollutants in the discharge are at a level which will cause, have the reasonable potential to cause, or contribute to an excursion of a water quality standard and delineates procedures to be used to calculate appropriate limits.
24. This Order implements relevant provisions of the California Toxic Rule and the State Board Policy. The limitations for priority pollutants in this Order were developed following the methodology and procedures outlined in the State Board Policy. A more detailed discussion regarding the development of the effluent limitations can be found in the Fact Sheet for this Order and in the Board's file(s) pertaining to this matter.

25. This Order includes effluent limitations for lead for freshwater and saltwater discharges from those sites polluted with leaded gasoline. The toxicity of lead in freshwater has been determined to be hardness dependent. Therefore, the freshwater aquatic life objectives that are specified in the California Toxics Rule are expressed in equation form in which hardness is the variable. The actual numeric value of the objectives are calculated using hardness measurements. In determining effluent limitations for lead for freshwater discharges and to facilitate the determination of compliance, it is appropriate to use a fixed hardness value in the equations. This Order requires the discharger to propose the appropriate hardness value based on the 5th percentile of effluent or ambient receiving water hardness measurements (the more restrictive of the two shall apply). Upon approval by the Regional Board's Executive Officer of the proposed hardness value, the lead effluent limitation for freshwater discharges shall be determined from Attachment "A" of this Order. Attachment A" contains the pre-calculated effluent limitations for lead based on the chronic criteria equation and using 20 through 400 milligrams per liter hardness value. Federal regulations require that the effluent limits for metals be expressed as the total recoverable form. To comply with this requirement, the dissolved criteria are translated into total recoverable effluent limits using ratios of the total recoverable metals to dissolved metals (t/d) concentrations. The State Water Resources Control Board's Policy stipulates that in the absence of site-specific information, the conversion factors cited in the CTR should be used as the t/d translators. For Reach 2, 3, 4 and tributaries of these Reaches of the Santa Ana River, a site-specific translator for lead (6.1), was developed in a study and reported in the "Santa Ana River Use-Attainability Analysis, Volume 10, Calculation of Total-to-Dissolved Metal Ratios to Translate Site-Specific Water Quality Objectives into NPDES Effluent Limits", Risk Sciences (March, 1994). For those surface waters in the Region other than Reach 2, 3, 4 and tributaries of these Reaches of the Santa Ana River, the conversion factor for lead cited in the CTR is used as the t/d translator. For saltwater discharges, the effluent limitation specified in this Order is a fixed value based on the California Ocean Plan.
26. The quality characteristics of the discharges and the impacts of the discharges on the affected receiving waters (including San Diego Creek and Newport Bay) have been carefully considered. If conducted in accordance with the terms and conditions of this Order, the discharge will not result in adverse impacts to the beneficial uses of the affected receiving waters. In many cases, pollutants in the discharges are below detectable levels; such discharges would not result in the lowering of water quality. In some cases, groundwater treatment systems may reduce pollutant concentrations to levels that are detectable but are less than the permit limits specified in this Order. Discharges from such systems may result in the lowering of water quality. However, any such lowering of water quality would not be significant. Moreover, it is to the maximum benefit of the people of the State to allow such lowering of water quality in order to facilitate groundwater cleanup activities and thereby restore and protect the beneficial uses of affected groundwaters. Therefore, these waste discharge requirements are consistent with federal and state antidegradation policies.

27. In accordance with California Water Code Section 13389, the issuance of waste discharge requirements for this discharge is exempt from those provisions of the California Environmental Quality Act contained in Chapter 3 (Commencing with Section 21100), Division 13 of the Public Resources Code.
28. The Regional Board has notified interested agencies and persons of its intent to issue general waste discharge requirements for groundwater cleanup discharges resulting from the cleanup of groundwater, and has provided them with an opportunity to submit their written views and recommendations.
29. The Regional Board, in a public meeting, heard and considered all comments pertaining to general waste discharge requirements for discharges of treated groundwater resulting from groundwater cleanup projects.

IT IS HEREBY ORDERED that dischargers of treated groundwater polluted by petroleum hydrocarbons, solvents and/or petroleum hydrocarbons mixed with lead and/or solvents from service stations and similar sites, their 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 as amended and regulations and guidelines adopted thereunder, shall comply with the following:

A. DISCHARGE SPECIFICATIONS:

1. The discharge of wastes shall not contain constituent concentrations in excess of the following limits:

EFFLUENT LIMITATIONS APPLICABLE TO DISCHARGES INTO RECEIVING WATERS DESIGNATED MUN (see Basin Plan Table 3-1)		
Constituent	Maximum Daily Concentration Limit (µg/l)	Average Monthly Concentration Limit (µg/l)
Total Petroleum Hydrocarbons	155	100
Benzene	1.6	1.0
Toluene	15.5	10.0
Xylene	15.5	10.0
Ethylbenzene	15.5	10.0
Carbon Tetrachloride	0.39	0.25
Chloroform	8.8	5.7
Dichlorobromomethane	0.87	0.56
Methyl Ethyl Ketone	186.0	120
Methyl Isobutyl Ketone	186.0	120
Methyl Tertiary Butyl Ether (MTBE)	20.2	13.0
Naphthalene	15.5	10.0
Tetrachloroethylene (PCE)	1.2	0.8
Trichloroethylene (TCE)	4.2	2.7
1,1-Dichloroethane	7.8	5.0
1,1-Dichloroethylene	0.088	0.057
1,2-Dichloroethylene	15.5	10.0
1,1,1-Trichloroethane (TCA)	7.8	5.0
Tert Butyl Alcohol (TBA)	18.6	12.0

EFFLUENT LIMITATIONS APPLICABLE TO DISCHARGES INTO RECEIVING WATERS NOT DESIGNATED MUN (see Basin Plan Table 3-1)		
Constituent	Maximum Daily Concentration Limit $\mu\text{g/l}$	Average Monthly Concentration Limit $\mu\text{g/l}$
Total Petroleum Hydrocarbons	155	100
Benzene	1.6	1.0
Toluene	15.5	10.0
Xylene	15.5	10.0
Ethylbenzene	15.5	10.0
Carbon Tetrachloride	0.8	0.5
Chloroform	7.8	5.0
EFFLUENT LIMITATIONS APPLICABLE TO DISCHARGES INTO RECEIVING WATERS NOT DESIGNATED MUN (see Basin Plan Table 3-1)		
Constituent	Maximum Daily Concentration Limit $\mu\text{g/l}$	Average Monthly Concentration Limit $\mu\text{g/l}$
Dichlorobromomethane	7.8	5.0
Methyl Ethyl Ketone	186.0	120.0
Methyl Isobutyl Ketone	186.0	120.0
Methyl Tertiary Butyl Ether (MTBE)	20.2	13.0
Naphthalene	15.5	10.0
Tetrachloroethene (PCE)	7.8	5.0
Trichloroethylene (TCE)	7.8	5.0
1,1-Dichloroethane	7.8	5.0
1,1-Dichloroethylene	9.3	6.0
1,2-Dichloroethylene	15.5	10.0
1,1,1-Trichloroethane (TCA)	7.8	5.0
Tert Butyl Alcohol (TBA)	19.0	12.0

EFFLUENT LIMITATIONS APPLICABLE TO ALL RECEIVING WATERS	
Constituent	Maximum Daily Concentration Limit (mg/l)
Total Dissolved Solids (TDS)	See Section A.6. and Section A.7., below
Total Inorganic Nitrogen (TIN)	See Section A.6. and Section A.7., below
Total Residual Chlorine ⁴	0.1 mg/l
Suspended Solids	75 mg/l
Sulfides	0.4 mg/l

- The pH of the discharge shall be within 6.5 and 8.5 pH units (see also Receiving Water Limitations B.2.g.).
- There shall be no visible oil and grease in the discharge.

⁴ If chlorine is used for treatment or disinfection of wastes.

4. For discharges to freshwater⁵ bodies, the maximum daily and average monthly effluent limitations for lead shall not exceed the lead concentrations tabulated in Attachment "A" of this Order, corresponding to the effluent or receiving water hardness⁶, as approved by the Executive Officer. (see also Required Notices and Reports H.3.)
5. For saltwater discharges, the total lead maximum daily concentration of the discharge shall not exceed 8 microgram per liter ($\mu\text{g/l}$).
6. For discharges to surface waters where the groundwater will not be affected by the discharge, the TDS and/or TIN of the effluent shall not exceed the water quality objectives for the receiving surface water where the effluent is discharged, as specified in Table 4-1 of the 1995 Basin Plan for the Santa Ana Region.
7. For discharges to surface waters where the groundwater will be affected by the discharge, the TDS and/or TIN concentrations of the effluent shall not exceed the water quality objectives for the surface water where the effluent is discharged nor the affected groundwater subbasin, as specified in Table 4-1 of the 1995 Basin Plan for the Santa Ana Region. The more restrictive water quality objectives shall govern. However, treated effluent exceeding the groundwater subbasin water quality objectives may be returned to the same subbasin from which it was extracted without reduction of the TDS or TIN concentrations so long as the concentrations of those constituents are no greater than when the groundwater was first extracted. Incidental increases in the TDS and TIN concentrations (such as may occur during air stripping) of treated effluent will not be considered increases for the purposes of determining compliance with this discharge specification.

B. RECEIVING WATER LIMITATIONS:

1. The discharge of wastes shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Board or the State Board, as required by the Federal CWA and regulations adopted thereunder.
2. The discharge shall not cause any of the following:
 - a. The undesirable discoloration of the receiving waters.
 - b. The presence of objectionable odor in the receiving water.
 - c. The presence of visible oil, grease scum, floating or suspended material or foam in the receiving waters.
 - d. The deposition of objectionable deposits along the banks or the bottom of the stream channel.

⁵ *Waters in which the salinity is equal to or less than 1 part per thousand 95% or more of the time.*

⁶ *For direct discharges into a receiving water, This hardness value is the 5th percentile hardness of either the receiving water or the treated effluent, whichever is more restrictive. Where discharges are into storm drains with wastewater/nuisance flows, the effluent 5th percentile hardness value shall be used.*

- e. The depletion of the dissolved oxygen concentration below 5.0 mg/l in the receiving water. If the ambient dissolved oxygen concentration is less than 5.0 mg/l, the discharge shall not cause a further depression.
 - f. An increase in the temperature of the receiving waters above 90°F (32°C) which normally occurs during the period of June through October, nor above 78°F (26°C) during the rest of the year.
 - g. Change the ambient pH levels more than 0.5 pH units.
 - h. The presence of radionuclides in concentrations that exceed the maximum permissible concentrations for radionuclides in water set forth in Chapter 5, Title 17 of the California Code of Regulations.
 - i. The concentration of pollutants in the water column, sediments, or biota to adversely affect the beneficial uses of the receiving waters.
 - j. The bioaccumulation of chemicals in aquatic resources to levels which are harmful to human health.
3. The discharge shall not result in acute toxicity in ambient receiving waters. The effluent shall be deemed to cause acute toxicity when the toxicity test of 100% effluent as required in Monitoring and Reporting Program No. R8-2002-0007, results in failure of the test as determined using the pass or fail test protocol specified in Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms (EPA/600/4-90/027F, August 1993). The discharger shall immediately stop the discharge whenever the discharge fails the toxicity test(s). Prior to resuming the discharge, the discharger shall identify and correct the source of the toxicity to the satisfaction of the Executive Officer.

C. PROHIBITIONS:

1. The discharge of oil, trash, industrial waste sludge, or other solids directly to the surface waters in this region or in any manner that will ultimately affect surface waters in this region is prohibited.
2. The discharge of any substances in concentrations toxic to animal or plant life is prohibited.
3. The discharge of wastes to property not owned or controlled by the discharger is prohibited.
4. Odors, vectors, and other nuisances of waste origin are prohibited beyond the limits of each discharger's facility.
5. The addition of chemicals to the extracted groundwater, exclusive of chlorine to control biofouling (H₂S) in treatment systems, is prohibited except when approved by the Executive Officer.
6. There shall be no direct discharges of waste to Areas of Special Biological Significance.

D. COMPLIANCE DETERMINATION:

1. Compliance with Discharge Specification A.1. shall be based on the quantification levels specified in Attachment "A" of the Monitoring and Reporting Program No. R8-2002-0007, unless an alternative minimum level⁷ (ML) or practical quantitation level⁸ (PQL) is approved for the pollutant of concern by the Regional Board's Executive Officer. If the discharger develops a limit of quantitation (LOQ) specific to their matrix, the LOQ shall serve as the ML with the approval of the Executive Officer of the Regional Board. If no minimum level is specified for a constituent, the method detection limit (MDL) specified in 40 CFR 136 shall be used. If no MDL is available, the lowest practicable detection limit shall be used with the approval of the Executive Officer.
2. Compliance determinations shall be based on available analyses for the time interval associated with the effluent limitation. Where only one sample analysis is available in a specified time interval (e.g., weekly, monthly, quarterly), that sample shall serve to characterize the discharge for the entire interval.
3. When determining compliance, based on a single sample, with a single effluent limitation which applies to a group of chemicals (e.g., PCBs), concentrations of individual members of the group may be considered to be zero if the analytical response for individual chemicals falls below the MDL for that chemical.
4. Compliance with an effluent limitation based on multiple samples shall be determined through the application of appropriate statistical methods. Compliance based on a single sample analysis may be determined where appropriate, as described below.
 - a. When the effluent limitation is greater than or equal to the ML or PQL, compliance shall be determined based on the effluent limitation and either single or multiple sample analyses.
 - b. When the effluent limitation is less than the ML or PQL compliance determinations based on analysis of a single sample shall only be undertaken if the concentration of the constituent of concern in the sample is greater than or equal to the ML or PQL.
 - c. When the effluent limitation is less than the ML or PQL, and recurrent analytical responses between the ML or PQL and the effluent limitation occur, compliance shall be determined by statistical analysis of multiple samples.

⁷ *Minimum level is the concentration at which the entire analytical system must give a recognizable signal and acceptable 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..*

⁸ *PQL is the lowest concentration of a substance that can be determined within ± 20 percent of the true concentration by 75 percent of the analytical laboratories tested in a performance evaluation study. Alternatively, if performance data are not available, the PQL is the method detection limit (MDL) x 5 for carcinogens and MDL x 10 for noncarcinogens.*

- d. For statistical analysis, the March 1991 Technical Support Document (EPA/505/2-90-001) methodology or other methods approved by the Executive Officer of the Regional Board shall be used.

E. PROVISIONS:

1. This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the CWA, or amendments thereto, that shall become effective 10 days after the date of adoption, provided the Regional Administrator of the EPA has no objection. If the Regional Administrator objects to its issuance, this Order shall not serve as an NPDES permit until such objection is withdrawn.
2. Neither the treatment nor the discharge of waste shall create, or threaten to create, a nuisance or pollution as defined by Section 13050 of the California Water Code.
3. This Order expires on January 1, 2007. However, it shall continue in force and effect until a new Order is issued. Only those dischargers authorized to discharge under the expiring Order will be regulated by the continued Order. Upon reissuance of a new general permit, the dischargers shall file a notice of intent within 45 days of the effective date of the new Order and obtain a new authorization to discharge from the Executive Officer.
4. The Executive Officer shall determine whether the proposed discharge is eligible for coverage under this general permit, after which, the Executive Officer may;
 - a. Authorize the proposed discharge by transmitting a "Discharge Authorization Letter" to the discharge proponent (now an "authorized discharger") authorizing the initiation of the discharge under the conditions of this Order and any other conditions consistent with this Order which are necessary to protect the beneficial uses of the receiving waters; or,
 - b. Require the discharge proponent to obtain an individual NPDES permit prior to any discharge to surface waters within the Santa Ana Region.
5. The discharge authorization letter from the Executive Officer shall specify any conditions necessary to protect the beneficial uses of the receiving waters and shall specify the Self-Monitoring Program for the proposed discharge in accordance with this Order. The discharge authorization letter may be terminated or revised by the Executive Officer at any time.
6. The discharger shall comply with all requirements of this Order and the terms, conditions and limitations of the discharge authorization letter.
7. The discharge shall be limited to extracted and treated groundwater and added treatment chemicals approved by the Executive Officer.
8. The discharger shall take all reasonable steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment.

9. The discharger shall take all reasonable steps to minimize any adverse impact to receiving waters resulting from noncompliance with any effluent limitations specified in this Order, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.
10. The discharger shall, at all times, properly operate and maintain⁹ all facilities and systems of treatment (and related appurtenances) and control which are installed or used by the discharger to achieve compliance with this Order and the conditions of the authorization letter(s) from the Executive Officer. Proper operation and maintenance shall include the following:
 - a. Effective performance, adequate funding, adequate operator staffing and training and adequate laboratory and process controls and appropriate quality assurance procedures.
 - b. Regular maintenance and inspection of all systems.
 - c. Maintenance of records of the inspection results that shall be made available to the Regional Board whenever required and demanded.
11. An Operation and Maintenance (O&M) Manual shall be developed prior to the initiation of the discharge and shall be readily accessible to site operating personnel. The O&M Manual shall include the following:
 - a. Detailed description of safe and effective operation and maintenance of treatment processes, process control instrumentation and equipment.
 - b. Process and equipment inspection and maintenance schedules.
 - c. Describe preventive (fail-safe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events.
 - d. Identification and description of the possible sources of accidental loss, bypass of untreated or partially treated wastes, and polluted drainage including power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes and possible spills.
12. All treatment facility startup and operation instruction manuals shall be maintained and available to operating personnel at the site where groundwater remediation is being conducted.

⁹ *Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls and appropriate quality assurance procedures.*

13. The discharger shall comply with the monitoring and reporting program issued by the Executive Officer with the authorization letter. Revision of this monitoring and reporting program by the Executive Officer may be necessary to confirm that the discharger is in compliance with the requirements and provisions contained in this Order. Revisions may be made by the Executive Officer at any time during the term of this Order, and may include a reduction or an increase in the number of constituents to be monitored, the frequency of monitoring or the number and size of samples collected. Reduction in the number of constituents being monitored and/or frequency of monitoring shall be considered only if the following conditions are satisfied:
 - a. Only dischargers without any criminal convictions under any environmental statute and NPDES civil judicial and administrative enforcement actions are eligible.
 - b. Only dischargers covered under Order No. 96-18 or under an existing individual permit for the last consecutive two years who have had no effluent violations of monitored constituents during the last two years are eligible.
 - c. Constituents with effluent limitations shall be monitored at least once per year.
 - d. The following performance conditions shall be met:
 - 1) For a specific constituent, reduction of weekly monitoring to bi-monthly (every two weeks) monitoring can be considered with approval by the Executive Officer when the effluent monitoring data for the last 3 months show compliance with effluent limitations.
 - 2) For a specific constituent, reduction of bi-monthly (every two weeks) monitoring to monthly monitoring can be considered with approval by the Executive Officer when the effluent monitoring data for the last 6 months show compliance with effluent limitations.
 - 3) For specific constituent, reduction of monthly monitoring to quarterly monitoring can be considered with approval by the Executive Officer when the effluent monitoring data for the last 12 months show compliance with effluent limitations.
 - e. Should any of the weekly, bi-monthly, monthly, quarterly or annual monitoring for a specific constituent show effluent concentrations above the effluent limit, the frequency of monitoring for that constituent shall be increased to weekly or daily as directed by the Executive Officer.
 - f. Should groundwater treatment and discharge stop for more than one month, the frequency of monitoring shall be increased to weekly as directed by the Executive Officer.
14. The discharger shall comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants 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.

15. This Order does not convey any property rights of any sort, or any exclusive privilege.
16. This Order is not transferable to any person except after notice to and approval by the Regional Board.
17. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from his liabilities under federal, state, or local laws, nor guarantee the discharger a capacity right in the receiving waters.
18. The provisions of this Order are severable, and if any provision of this Order, or the application of any provisions of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order shall not be affected thereby.
19. Any violation of this Order constitutes a violation of the CWA, its regulations, and the California Water Code, and is grounds for enforcement action and/or termination of the authorization to discharge.
20. The Regional Board, EPA, and other authorized representatives shall be allowed:
 - a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order;
 - b. Access to copy any records that are kept under the conditions of the order;
 - c. To inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
 - d. To photograph, sample and monitor for the purpose of assuring compliance with this Order, or as otherwise authorized by the CWA.

F. PERMIT REOPENING, REVISION, REVOCATION, AND RE-ISSUANCE:

1. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Federal CWA, or amendments thereto, the Board will revise and modify this Order in accordance with such standards.
2. This Order may be reopened to address any changes in State or federal plans, policies or regulations that would affect the quality requirements for the discharges.
3. Any permit noncompliance constitutes a violation of the CWA and the California Water Code and is grounds for enforcement action; for permit or authorization letter termination, revocation and reissuance, or modification; the issuance of an individual permit; or for denial of a renewal application.
4. This Order may be modified by the Regional Board prior to the expiration date to include effluent or receiving water limitations for toxic constituents determined to be present in significant amounts in the discharge through the comprehensive monitoring program included as part of this Order.

5. This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by a discharger for modification, revocation and reissuance, or termination of this Order or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

G. PENALTIES:

1. The CWA provides that any person who violates a provision implementing sections 301, 302, 306, 307, or 308 of the CWA is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates provisions implementing these sections of the CWA is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than 1 year, or both.
2. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
3. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.
4. The California Water Code provides that any person who violates a waste discharge requirement or a provision of the California Water Code is subject to civil penalties of up to \$5,000 per day, \$10,000 per day, or \$25,000 per day of violation, or when the violation involves the discharge of pollutants, is subject to civil penalties of up to \$10 per gallon per day, or \$20 per gallon per day of violation; or some combination thereof, depending on the violation, or upon the combination of violations.

H. REQUIRED REPORTS AND NOTICES:

1. Reporting Provisions:
 - a. All applications, reports, or information submitted to the Regional Board shall be signed and certified in accordance with 40 CFR 122.22.
 - b. The discharger shall furnish, within a reasonable time, any information the Regional Board or EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The discharger shall also furnish to the Regional Board, upon request, copies of records required to be kept by this Order.

- c. Except for data determined to be confidential under Section 308 of the CWA, all reports prepared in accordance with the terms of this Order shall be available for public inspection at the offices of the Regional Water Quality Control Board and the Regional Administrator of EPA. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Act and Section 13387 of the California Water Code.
2. Within forty five (45) days of the effective date of this Order, those dischargers regulated under Order No. 96-18, and those dischargers under individual waste discharge requirements, who wish to be regulated under this Order shall submit a notice of intent. Additional information may be required if there has been a change in ownership of facility or changes in the character and/or treatment of the discharges.
3. Within forty five (45) days of the effective date of this Order, dischargers from those sites polluted with leaded gasoline shall submit for approval by the Regional Board Executive Officer the proposed hardness value based on the 5th percentile of effluent or ambient receiving water hardness measurements. Once approved by the Executive Officer, this hardness value shall be the basis for determining the lead effluent limits for the discharge from Attachment "A" of this Order.
4. Within sixty (60) days of coverage under this Order, discharger(s) within the San Diego Creek/Newport Bay watershed shall submit a plan for approval by the Regional Board's Executive Officer that identifies the method(s) and schedule by which the discharger(s) proposes to achieve a 50% reduction in the total nitrogen of their discharges. The schedule is to reflect the shortest practicable time necessary to achieve the 50 % reduction.
5. The discharger shall file with the Board a report of waste discharge at least 120 days before making any material change or proposed change in the character, location, volume, treatment or disposal methods of the discharge.
6. The discharger shall give advance notice to the Regional Board of any planned changes in the permitted facility or activity that may result in noncompliance with these waste discharge requirements.
7. Each discharger shall submit to the Executive Officer, as part of the application for proposed discharge, a report certifying the adequacy of each component of the proposed treatment system and the associated Operation and Maintenance (O&M) Manual. This certification shall contain a requirement-by-requirement analysis, based on accepted engineering practice, of how the process and physical design of the treatment systems will ensure compliance with this Order. The design engineer¹⁰ shall affix his/her signature, professional license number and seal to this certification.

¹⁰

A registered civil engineer, registered geologist, or certified engineering geologist licensed in the State of California (Sections 6735, 7835, and 7835.1 of the California Business and Profession's Code).

8. In the event of any change in control or ownership of land or waste discharge facilities currently 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 signed by the new owner accepting responsibility for complying with this Order shall be forwarded to the Executive Officer.
9. The discharger shall furnish, within a reasonable time, any information the Executive Officer may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The discharger shall also furnish to the Executive Officer, upon request, copies of records required to be kept by this Order.

I. APPLICATION REQUIREMENTS FOR NEW DISCHARGES¹¹:

At least 60 days before the start of a new discharge or permit expiration, the discharger shall submit an application and obtain the authorization letter from the Executive Officer to discharge treated groundwater. The application shall consist of the following information:

1. Notice of Intent to be covered under this general permit.
2. A site characterization study which defines the onsite contaminants and their properties, the three-dimensional extent and concentration of contaminants in the subsurface, and includes a description of the geologic and hydrologic factors that control the migration of the contaminants.
3. The discharger shall submit for approval by the Executive Officer of the Regional Board a fixed hardness value based on the 5th percentile of effluent hardness measurements or the average ambient receiving water hardness measurements for those sites polluted with leaded gasoline.
4. A report which shall include the following:
 - a. Chemical analysis of the untreated groundwater. A representative groundwater sample shall be analyzed for organic pollutants using EPA method 8260 and results shall be reported with ML or PQL and MDL;
 - b. The name of the receiving water;
 - c. The estimated average and maximum daily flow rates;
 - d. A map showing the path from the point of initial discharge to the ultimate location of discharge;
 - e. A list of known or suspected leaking underground tanks and other facilities or operations which have, or may have impacted the quality of the underlying groundwater.
 - f. A discussion of the proposed cleanup project including a review of the extraction system design and the status of definition of free product and dissolved product plumes;

¹¹ *New discharges are those not currently covered under Order No. 96-18.*

- g. A description of the proposed treatment system and a certification report on the adequacy of each component of the proposed treatment system along with the associated operation. This certification report shall contain a requirement-by-requirement analysis, based on accepted engineering practice, of how the process(es) and physical design(s) of the treatment system will ensure compliance with this Order. The design engineer shall affix his/her signature and engineering license number to this certification report. The report(s) shall also certify the following:
 - (1) all treatment facility startup and operation instruction manuals are adequate and available to operating personnel;
 - (2) all treatment facility maintenance and testing schedules are included in the treatment facility operation and maintenance manual (O&M Manual) which shall be kept readily accessible to onsite operating personnel; and
 - (3) influent and effluent sampling locations and ports located in areas where samples representative of the waste stream to be monitored can be obtained.
 - h. A discussion of a plan for the prevention of run-on, interception and diversion of runoff, and prevention of infiltration and runoff from contaminated soils stored on-site, if the discharge is associated with a groundwater remediation project and soils containing petroleum projects or other pollutants will be maintained on-site; and
5. Any other information deemed necessary by the Executive Officer.

I, Gerard J. Thibeault, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on January 23, 2002.

Gerard J. Thibeault
Executive Officer

LEAD EFFLUENT LIMIT TABLE				
Hardness	For Dischargers to surface waters not within Reach 2, 3, or 4 of the Santa River or Tributaries to these Reaches		For Dischargers to surface waters within Reach 2, 3, or 4 of the Santa River or Tributaries to these Reaches	
	Maximum Daily Effluent Limit (µg/l)	Average Monthly Effluent Limit (µg/l)	Maximum Daily Effluent Limit (µg/l)	Average Monthly Effluent Limit (µg/l)
20	0.67	0.33	4.20	2.10
21	0.72	0.36	4.44	2.21
22	0.76	0.38	4.68	2.33
23	0.80	0.40	4.92	2.45
24	0.85	0.42	5.17	2.57
25	0.89	0.45	5.41	2.70
26	0.94	0.47	5.65	2.82
27	0.98	0.49	5.90	2.94
28	1.03	0.51	6.14	3.06
29	1.08	0.54	6.39	3.19
30	1.13	0.56	6.64	3.31
31	1.17	0.59	6.89	3.43
32	1.22	0.61	7.14	3.56
33	1.27	0.63	7.39	3.68
34	1.32	0.66	7.64	3.81
35	1.37	0.68	7.89	3.93
36	1.42	0.71	8.14	4.06
37	1.47	0.73	8.40	4.18
38	1.52	0.76	8.65	4.31
39	1.57	0.78	8.90	4.44
40	1.62	0.81	9.16	4.57
41	1.68	0.84	9.42	4.69
42	1.73	0.86	9.67	4.82
43	1.78	0.89	9.93	4.95
44	1.83	0.91	10.19	5.08
45	1.89	0.94	10.44	5.21
46	1.94	0.97	10.70	5.33
47	1.99	0.99	10.96	5.46
48	2.05	1.02	11.22	5.59
49	2.10	1.05	11.48	5.72
50	2.16	1.08	11.74	5.85
51	2.21	1.10	12.00	5.98
52	2.27	1.13	12.26	6.11
53	2.32	1.16	12.52	6.24
54	2.38	1.19	12.79	6.37
55	2.44	1.21	13.05	6.50
56	2.49	1.24	13.31	6.63
57	2.55	1.27	13.58	6.77
58	2.61	1.30	13.84	6.90
59	2.66	1.33	14.10	7.03
60	2.72	1.36	14.37	7.16
61	2.78	1.39	14.63	7.29
62	2.84	1.41	14.90	7.42
63	2.90	1.44	15.16	7.56
64	2.95	1.47	15.43	7.69
65	3.01	1.50	15.69	7.82
66	3.07	1.53	15.96	7.95
67	3.13	1.56	16.23	8.09
68	3.19	1.59	16.49	8.22
69	3.25	1.62	16.76	8.35
70	3.31	1.65	17.03	8.49
71	3.37	1.68	17.30	8.62
72	3.43	1.71	17.56	8.75
73	3.49	1.74	17.83	8.89
74	3.55	1.77	18.10	9.02
75	3.62	1.80	18.37	9.16
76	3.68	1.83	18.64	9.29
77	3.74	1.86	18.91	9.42

LEAD EFFLUENT LIMIT TABLE				
Hardness	For Dischargers to surface waters not within Reach 2, 3, or 4 of the Santa River or Tributaries to these Reaches		For Dischargers to surface waters within Reach 2, 3, or 4 of the Santa River or Tributaries to these Reaches	
	Maximum Daily Effluent Limit (µg/l)	Average Monthly Effluent Limit (µg/l)	Maximum Daily Effluent Limit (µg/l)	Average Monthly Effluent Limit (µg/l)
78	3.80	1.89	19.18	9.56
79	3.86	1.93	19.45	9.69
80	3.93	1.96	19.72	9.83
81	3.99	1.99	19.99	9.96
82	4.05	2.02	20.26	10.10
83	4.11	2.05	20.53	10.23
84	4.18	2.08	20.80	10.37
85	4.24	2.11	21.07	10.50
86	4.30	2.14	21.34	10.64
87	4.37	2.18	21.61	10.77
88	4.43	2.21	21.89	10.91
89	4.50	2.24	22.16	11.04
90	4.56	2.27	22.43	11.18
91	4.62	2.30	22.70	11.31
92	4.69	2.34	22.97	11.45
93	4.75	2.37	23.25	11.59
94	4.82	2.40	23.52	11.72
95	4.88	2.43	23.79	11.86
96	4.95	2.47	24.07	11.99
97	5.02	2.50	24.34	12.13
98	5.08	2.53	24.61	12.27
99	5.15	2.57	24.89	12.40
100	5.21	2.60	25.16	12.54
101	5.28	2.63	25.43	12.68
102	5.35	2.67	25.71	12.81
103	5.41	2.70	25.98	12.95
104	5.48	2.73	26.26	13.09
105	5.55	2.77	26.53	13.22
106	5.62	2.80	26.81	13.36
107	5.68	2.83	27.08	13.50
108	5.75	2.87	27.36	13.63
109	5.82	2.90	27.63	13.77
110	5.89	2.93	27.91	13.91
111	5.96	2.97	28.18	14.05
112	6.02	3.00	28.46	14.18
113	6.09	3.04	28.73	14.32
114	6.16	3.07	29.01	14.46
115	6.23	3.10	29.29	14.60
116	6.30	3.14	29.56	14.73
117	6.37	3.17	29.84	14.87
118	6.44	3.21	30.11	15.01
119	6.51	3.24	30.39	15.15
120	6.58	3.28	30.67	15.28
121	6.65	3.31	30.94	15.42
122	6.72	3.35	31.22	15.56
123	6.79	3.38	31.50	15.70
124	6.86	3.42	31.78	15.84
125	6.93	3.45	32.05	15.97
126	7.00	3.49	32.33	16.11
127	7.07	3.52	32.61	16.25
128	7.14	3.56	32.88	16.39
129	7.21	3.59	33.16	16.53
130	7.28	3.63	33.44	16.67
131	7.35	3.66	33.72	16.80
132	7.43	3.70	33.99	16.94
133	7.50	3.74	34.27	17.08
134	7.57	3.77	34.55	17.22
135	7.64	3.81	34.83	17.36

LEAD EFFLUENT LIMIT TABLE				
Hardness	For Dischargers to surface waters not within Reach 2, 3, or 4 of the Santa River or Tributaries to these Reaches		For Dischargers to surface waters within Reach 2, 3, or 4 of the Santa River or Tributaries to these Reaches	
	Maximum Daily Effluent Limit (µg/l)	Average Monthly Effluent Limit (µg/l)	Maximum Daily Effluent Limit (µg/l)	Average Monthly Effluent Limit (µg/l)
136	7.71	3.84	35.11	17.50
137	7.79	3.88	35.39	17.64
138	7.86	3.92	35.66	17.77
139	7.93	3.95	35.94	17.91
140	8.00	3.99	36.22	18.05
141	8.08	4.02	36.50	18.19
142	8.15	4.06	36.78	18.33
143	8.22	4.10	37.06	18.47
144	8.29	4.13	37.34	18.61
145	8.37	4.17	37.61	18.75
146	8.44	4.21	37.89	18.89
147	8.52	4.24	38.17	19.02
148	8.59	4.28	38.45	19.16
149	8.66	4.32	38.73	19.30
150	8.74	4.35	39.01	19.44
151	8.81	4.39	39.29	19.58
152	8.89	4.43	39.57	19.72
153	8.96	4.47	39.85	19.86
154	9.04	4.50	40.13	20.00
155	9.11	4.54	40.41	20.14
156	9.18	4.58	40.69	20.28
157	9.26	4.61	40.97	20.42
158	9.33	4.65	41.25	20.56
159	9.41	4.69	41.53	20.70
160	9.49	4.73	41.81	20.84
161	9.56	4.77	42.09	20.98
162	9.64	4.80	42.37	21.11
163	9.71	4.84	42.65	21.25
164	9.79	4.88	42.93	21.39
165	9.86	4.92	43.21	21.53
166	9.94	4.95	43.49	21.67
167	10.02	4.99	43.77	21.81
168	10.09	5.03	44.05	21.95
169	10.17	5.07	44.33	22.09
170	10.25	5.11	44.61	22.23
171	10.32	5.15	44.89	22.37
172	10.40	5.18	45.17	22.51
173	10.48	5.22	45.45	22.65
174	10.55	5.26	45.73	22.79
175	10.63	5.30	46.01	22.93
176	10.71	5.34	46.29	23.07
177	10.79	5.38	46.57	23.21
178	10.86	5.41	46.85	23.35
179	10.94	5.45	47.13	23.49
180	11.02	5.49	47.41	23.63
181	11.10	5.53	47.70	23.77
182	11.18	5.57	47.98	23.91
183	11.25	5.61	48.26	24.05
184	11.33	5.65	48.54	24.19
185	11.41	5.69	48.82	24.33
186	11.49	5.73	49.10	24.47
187	11.57	5.77	49.38	24.61
188	11.65	5.80	49.66	24.75
189	11.73	5.84	49.94	24.89
190	11.81	5.88	50.23	25.03
191	11.88	5.92	50.51	25.17
192	11.96	5.96	50.79	25.31
193	12.04	6.00	51.07	25.45

LEAD EFFLUENT LIMIT TABLE				
Hardness	For Dischargers to surface waters not within Reach 2, 3, or 4 of the Santa River or Tributaries to these Reaches		For Dischargers to surface waters within Reach 2, 3, or 4 of the Santa River or Tributaries to these Reaches	
	Maximum Daily Effluent Limit (µg/l)	Average Monthly Effluent Limit (µg/l)	Maximum Daily Effluent Limit (µg/l)	Average Monthly Effluent Limit (µg/l)
194	12.12	6.04	51.35	25.59
195	12.20	6.08	51.63	25.73
196	12.28	6.12	51.91	25.87
197	12.36	6.16	52.20	26.01
198	12.44	6.20	52.48	26.15
199	12.52	6.24	52.76	26.29
200	12.60	6.28	53.04	26.43
201	12.68	6.32	53.32	26.58
202	12.76	6.36	53.60	26.72
203	12.84	6.40	53.89	26.86
204	12.92	6.44	54.17	27.00
205	13.00	6.48	54.45	27.14
206	13.08	6.52	54.73	27.28
207	13.17	6.56	55.01	27.42
208	13.25	6.60	55.29	27.56
209	13.33	6.64	55.58	27.70
210	13.41	6.68	55.86	27.84
211	13.49	6.72	56.14	27.98
212	13.57	6.76	56.42	28.12
213	13.65	6.80	56.70	28.26
214	13.74	6.85	56.99	28.40
215	13.82	6.89	57.27	28.54
216	13.90	6.93	57.55	28.68
217	13.98	6.97	57.83	28.82
218	14.06	7.01	58.11	28.96
219	14.14	7.05	58.40	29.10
220	14.23	7.09	58.68	29.24
221	14.31	7.13	58.96	29.38
222	14.39	7.17	59.24	29.53
223	14.47	7.21	59.52	29.67
224	14.56	7.26	59.81	29.81
225	14.64	7.30	60.09	29.95
226	14.72	7.34	60.37	30.09
227	14.81	7.38	60.65	30.23
228	14.89	7.42	60.93	30.37
229	14.97	7.46	61.22	30.51
230	15.06	7.50	61.50	30.65
231	15.14	7.55	61.78	30.79
232	15.22	7.59	62.06	30.93
233	15.31	7.63	62.35	31.07
234	15.39	7.67	62.63	31.21
235	15.47	7.71	62.91	31.35
236	15.56	7.75	63.19	31.49
237	15.64	7.80	63.47	31.64
238	15.73	7.84	63.76	31.78
239	15.81	7.88	64.04	31.92
240	15.89	7.92	64.32	32.06
241	15.98	7.96	64.60	32.20
242	16.06	8.01	64.89	32.34
243	16.15	8.05	65.17	32.48
244	16.23	8.09	65.45	32.62
245	16.32	8.13	65.73	32.76
246	16.40	8.17	66.01	32.90
247	16.49	8.22	66.30	33.04
248	16.57	8.26	66.58	33.18
249	16.66	8.30	66.86	33.32
250	16.74	8.34	67.14	33.46
251	16.83	8.39	67.43	33.61

LEAD EFFLUENT LIMIT TABLE				
Hardness	For Dischargers to surface waters not within Reach 2, 3, or 4 of the Santa River or Tributaries to these Reaches		For Dischargers to surface waters within Reach 2, 3, or 4 of the Santa River or Tributaries to these Reaches	
	Maximum Daily Effluent Limit (µg/l)	Average Monthly Effluent Limit (µg/l)	Maximum Daily Effluent Limit (µg/l)	Average Monthly Effluent Limit (µg/l)
252	16.91	8.43	67.71	33.75
253	17.00	8.47	67.99	33.89
254	17.08	8.51	68.27	34.03
255	17.17	8.56	68.56	34.17
256	17.25	8.60	68.84	34.31
257	17.34	8.64	69.12	34.45
258	17.43	8.69	69.40	34.59
259	17.51	8.73	69.69	34.73
260	17.60	8.77	69.97	34.87
261	17.68	8.81	70.25	35.01
262	17.77	8.86	70.53	35.15
263	17.86	8.90	70.82	35.29
264	17.94	8.94	71.10	35.43
265	18.03	8.99	71.38	35.58
266	18.12	9.03	71.66	35.72
267	18.20	9.07	71.95	35.86
268	18.29	9.12	72.23	36.00
269	18.38	9.16	72.51	36.14
270	18.46	9.20	72.79	36.28
271	18.55	9.25	73.08	36.42
272	18.64	9.29	73.36	36.56
273	18.73	9.33	73.64	36.70
274	18.81	9.38	73.92	36.84
275	18.90	9.42	74.20	36.98
276	18.99	9.46	74.49	37.12
277	19.08	9.51	74.77	37.26
278	19.16	9.55	75.05	37.41
279	19.25	9.59	75.33	37.55
280	19.34	9.64	75.62	37.69
281	19.43	9.68	75.90	37.83
282	19.52	9.73	76.18	37.97
283	19.60	9.77	76.46	38.11
284	19.69	9.81	76.75	38.25
285	19.78	9.86	77.03	38.39
286	19.87	9.90	77.31	38.53
287	19.96	9.95	77.59	38.67
288	20.05	9.99	77.88	38.81
289	20.13	10.03	78.16	38.95
290	20.22	10.08	78.44	39.09
291	20.31	10.12	78.72	39.23
292	20.40	10.17	79.01	39.38
293	20.49	10.21	79.29	39.52
294	20.58	10.26	79.57	39.66
295	20.67	10.30	79.85	39.80
296	20.76	10.35	80.13	39.94
297	20.85	10.39	80.42	40.08
298	20.94	10.43	80.70	40.22
299	21.03	10.48	80.98	40.36
300	21.11	10.52	81.26	40.50
301	21.20	10.57	81.55	40.64
302	21.29	10.61	81.83	40.78
303	21.38	10.66	82.11	40.92
304	21.47	10.70	82.39	41.06
305	21.56	10.75	82.67	41.20
306	21.65	10.79	82.96	41.35
307	21.74	10.84	83.24	41.49
308	21.83	10.88	83.52	41.63
309	21.92	10.93	83.80	41.77

LEAD EFFLUENT LIMIT TABLE				
Hardness	For Dischargers to surface waters not within Reach 2, 3, or 4 of the Santa River or Tributaries to these Reaches		For Dischargers to surface waters within Reach 2, 3, or 4 of the Santa River or Tributaries to these Reaches	
	Maximum Daily Effluent Limit (µg/l)	Average Monthly Effluent Limit (µg/l)	Maximum Daily Effluent Limit (µg/l)	Average Monthly Effluent Limit (µg/l)
310	22.02	10.97	84.09	41.91
311	22.11	11.02	84.37	42.05
312	22.20	11.06	84.65	42.19
313	22.29	11.11	84.93	42.33
314	22.38	11.15	85.21	42.47
315	22.47	11.20	85.50	42.61
316	22.56	11.24	85.78	42.75
317	22.65	11.29	86.06	42.89
318	22.74	11.33	86.34	43.03
319	22.83	11.38	86.62	43.17
320	22.92	11.42	86.91	43.31
321	23.01	11.47	87.19	43.45
322	23.11	11.52	87.47	43.59
323	23.20	11.56	87.75	43.74
324	23.29	11.61	88.03	43.88
325	23.38	11.65	88.32	44.02
326	23.47	11.70	88.60	44.16
327	23.56	11.74	88.88	44.30
328	23.65	11.79	89.16	44.44
329	23.75	11.84	89.44	44.58
330	23.84	11.88	89.73	44.72
331	23.93	11.93	90.01	44.86
332	24.02	11.97	90.29	45.00
333	24.11	12.02	90.57	45.14
334	24.21	12.06	90.85	45.28
335	24.30	12.11	91.14	45.42
336	24.39	12.16	91.42	45.56
337	24.48	12.20	91.70	45.70
338	24.58	12.25	91.98	45.84
339	24.67	12.30	92.26	45.98
340	24.76	12.34	92.55	46.12
341	24.85	12.39	92.83	46.26
342	24.95	12.43	93.11	46.40
343	25.04	12.48	93.39	46.55
344	25.13	12.53	93.67	46.69
345	25.23	12.57	93.95	46.83
346	25.32	12.62	94.24	46.97
347	25.41	12.67	94.52	47.11
348	25.51	12.71	94.80	47.25
349	25.60	12.76	95.08	47.39
350	25.69	12.81	95.36	47.53
351	25.79	12.85	95.64	47.67
352	25.88	12.90	95.93	47.81
353	25.97	12.95	96.21	47.95
354	26.07	12.99	96.49	48.09
355	26.16	13.04	96.77	48.23
356	26.25	13.09	97.05	48.37
357	26.35	13.13	97.33	48.51
358	26.44	13.18	97.61	48.65
359	26.54	13.23	97.90	48.79
360	26.63	13.27	98.18	48.93
361	26.73	13.32	98.46	49.07
362	26.82	13.37	98.74	49.21
363	26.91	13.41	99.02	49.35
364	27.01	13.46	99.30	49.49
365	27.10	13.51	99.58	49.63
366	27.20	13.55	99.87	49.77
367	27.29	13.60	100.15	49.91

LEAD EFFLUENT LIMIT TABLE				
Hardness	For Dischargers to surface waters not within Reach 2, 3, or 4 of the Santa River or Tributaries to these Reaches		For Dischargers to surface waters within Reach 2, 3, or 4 of the Santa River or Tributaries to these Reaches	
	Maximum Daily Effluent Limit (µg/l)	Average Monthly Effluent Limit (µg/l)	Maximum Daily Effluent Limit (µg/l)	Average Monthly Effluent Limit (µg/l)
368	27.39	13.65	100.43	50.05
369	27.48	13.70	100.71	50.19
370	27.58	13.74	100.99	50.33
371	27.67	13.79	101.27	50.47
372	27.77	13.84	101.55	50.61
373	27.86	13.89	101.83	50.75
374	27.96	13.93	102.11	50.89
375	28.05	13.98	102.40	51.03
376	28.15	14.03	102.68	51.17
377	28.24	14.08	102.96	51.31
378	28.34	14.12	103.24	51.45
379	28.43	14.17	103.52	51.59
380	28.53	14.22	103.80	51.73
381	28.62	14.27	104.08	51.87
382	28.72	14.31	104.36	52.01
383	28.82	14.36	104.64	52.15
384	28.91	14.41	104.93	52.29
385	29.01	14.46	105.21	52.43
386	29.10	14.50	105.49	52.57
387	29.20	14.55	105.77	52.71
388	29.30	14.60	106.05	52.85
389	29.39	14.65	106.33	52.99
390	29.49	14.70	106.61	53.13
391	29.58	14.74	106.89	53.27
392	29.68	14.79	107.17	53.41
393	29.78	14.84	107.45	53.55
394	29.87	14.89	107.73	53.69
395	29.97	14.94	108.01	53.83
396	30.07	14.98	108.29	53.97
397	30.16	15.03	108.58	54.11
398	30.26	15.08	108.86	54.25
399	30.36	15.13	109.14	54.39
400	30.45	15.18	109.42	54.53

California Regional Water Quality Control Board
Santa Ana Region

Monitoring and Reporting Program No. R8-2002-0007
NPDES No. CAG918001
for
Groundwater Cleanup Project
Santa Ana Region

A. MONITORING GUIDELINES:

Monitoring shall be in accordance with the following:

1. All sampling and sample preservation shall be in accordance with the current edition of "*Standard Methods for the Examination of Water and Wastewater*" (American Public Health Association).
2. All laboratory analyses shall be performed in accordance with test procedures under 40 CFR 136 (revised as of May 14, 1999) "Guidelines Establishing Test Procedures for the Analysis of Pollutants," promulgated by the United States Environmental Protection Agency (EPA), unless otherwise specified in this monitoring and reporting program (M&RP). In addition, the Regional Board and/or EPA, at their discretion, may specify test methods that are more sensitive than those specified in 40 CFR 136. Unless otherwise specified herein, organic pollutants shall be analyzed using EPA method 8260, as appropriate, and results shall be reported with ML or PQL and MDL.
3. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services or EPA or at laboratories approved by the Executive Officer of the Regional Board.
4. In conformance with federal regulations (40 CFR 122.45(c)), analyses to determine compliance with the effluent limitations for metals shall be conducted using the total recoverable method. However, in the event that individual concentration levels for lead show detectable amounts, the discharger shall also determine the individual dissolved metal concentration.

5. The discharger shall conduct acute toxicity testing as specified in Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms (EPA/600/4-90/027F, August 1993). Using a control and 100% effluent, static non-renewal survival (pass/fail) tests for 96 hours shall be conducted using the two test species specified in the table below corresponding to the onsite groundwater salinity, for the first required annual test under this permit. Based on the results, the discharger shall determine the most sensitive test species. For the required succeeding toxicity monitoring, the discharger shall use the most sensitive species with prior approval from the Regional Board Executive Officer. The discharger shall submit documentation supporting the discharger’s determination of the most sensitive test species. The effluent tests must be conducted concurrent with reference toxicant tests. The effluent and reference toxicant tests must meet all test acceptability criteria as specified in the acute manual¹. If the test acceptability criteria are not achieved, then the discharger must re-sample and re-test within 14 days. The test results must be reported according to the acute manual chapter on Report Preparation, and shall be attached to the monitoring reports. The use of alternative methods for measuring acute toxicity may be considered by the Executive Officer on a case-by-case basis.

a. Test species:

IF THE EFFLUENT OR RECEIVING WATER SALINITY IS:	TEST SPECIES	TEST
Less than 1,000 mg/l salinity	Fathead minnow, <i>Pimphales promelas</i>	Larval survival test
	Water flea, <i>Ceriodaphnia dubia</i>	Survival test
Equal to or greater than 1,000 mg/l salinity	Silverside, <i>Menedia beryllina</i>	Survival Test
	Pacific mysid, <i>Holmesimysis costata</i>	Survival Test

b. In the event that the required annual toxicity test fails, the discharger shall stop any discharge of wastewater to waters of the U.S. and shall retest within 14 days of receiving the notice of failure and shall determine the cause of the failure. The discharger shall stop any discharge of wastewater to waters of the U.S. until such time that the cause of toxicity is determined and appropriately addressed. Commencement of any discharge shall be with prior approval by the Executive Officer.

¹ "Acute manual" refers to protocols described in "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" (EPA) 600/4-90-027, September 1991 or subsequent editions).

6. The discharger shall multiply each measured or estimated congener concentration by its respective toxic equivalency factor (TEF) as shown below and report the sum of these values. The discharger shall use the U.S. EPA approved test method 1613 for dioxins and furans.

Toxic Equivalency Factors for 2,3,7, 8-TCDD Equivalents	
Congener	TEF
2,3,7,8-TetraCDD	1
1,2,3,7,8-PentaCDD	1.0
1,2,3,4,7,8-HexaCDD	0.1
1,2,3,6,7,8-HexaCDD	0.1
1,2,3,7,8,9-HexaCDD	0.1
1,2,3,4,6,7,8-HeptaCDD	0.01
OctaCDD	0.0001
2,3,7,8-TetraCDF	0.1
1,2,3,7,8-PentaCDF	0.05
2,3,4,7,8-PentaCDF	0.5
1,2,3,4,7,8-HexaCDF	0.1
1,2,3,6,7,8-HexaCDF	0.1
1,2,3,7,8,9-HexaCDF	0.1
2,3,4,6,7,8-HexaCDF	0.1
1,2,3,4,6,7,8-HeptaCDF	0.01
1,2,3,4,7,8,9-HeptaCDF	0.01
OctaCDF	0.0001

7. All analytical data shall be reported with method detection limits (MDLs) and with identification of either practical quantitation levels (PQLs) or limits of quantitation (LOQs).
8. Laboratory data must quantify each constituent down to the Practical Quantitation Levels specified in Attachment "A". Any internal quality control data associated with the sample must be reported when requested by the Executive Officer. The Regional Board will reject the quantified laboratory data if quality control data is unavailable or unacceptable.
9. The discharger shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. Duplicate chemical analyses must be conducted on a minimum of ten percent (10%) of the samples, or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples. When requested by the Board or EPA, the discharger shall participate in the NPDES discharge monitoring report QA performance study. The permittee must have a success rate equal to or greater than 80%.
10. 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.
11. The flow measurement system shall be calibrated at least once per year or more frequently, to ensure continued accuracy.

12. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Influent samples shall be taken at each point of inflow to the treatment system and shall be representative of the influent to the treatment system. Effluent samples shall be taken downstream of the last addition of waste to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters.
13. Whenever the discharger monitors any pollutant more frequently than is required by this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharge monitoring report specified by the Executive Officer.
14. The discharger may request a reduction in the constituents to be monitored and/or a reduction in monitoring frequency for a specific constituent(s) subject to the approval of the Executive Officer when the conditions stipulated in Provisions E.13. of this Order are met.
15. The discharger shall monitor weekly those constituents that are detected at levels of concern² in the required priority pollutant scan or in the required organic scan using EPA Method 8260.
16. The discharger shall assure that records of all monitoring information are maintained and accessible for a period of at least five years from the date of the sample, report, or application. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or by the request of the Board at any time. Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling, and/or measurements;
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used;
 - f. All sampling and analytical results;
 - g. All monitoring equipment calibration and maintenance records;
 - h. All original strip charts from continuous monitoring devices;
 - i. All data used to complete the application for this Order; and,
 - j. Copies of all reports required by this Order.

² *Levels of concern are detected values 50 % or greater than the criteria values specified for Priority Pollutants in the California Toxics Rule (see Federal Register/Vol. 65, No. 97 / Thursday, May 18, 2000 / Rules and Regulations) and the national; recommended water quality criteria for non-priority pollutants (see Federal Register / Vol. 63, No. 237 / Thursday, December 10, 1998/ Notices, Pages 68360 & 68361) or Maximum Contaminant Level (MCL) and Action Levels (AL) adopted by the Department of Health Services.*

17. Discharge monitoring data shall be submitted in a format acceptable to the Regional Board. Specific reporting format may include preprinted forms and/or electronic media. Unless otherwise specified, discharge flows shall be reported in terms of daily average discharge flows. The results of all monitoring required by this Order shall be reported to the Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order.
18. The discharger shall deliver a copy of each monitoring report in the appropriate format to:

California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3348

19. Weekly samples shall be collected on a representative day of each week.
20. Bi-monthly samples shall be collected on a representative day of the week.
21. Monthly samples shall be collected on a representative day of the month.
22. Quarterly samples shall be collected in January, April, July, and October.
23. Semi-Annual samples shall be collected once during dry weather (April to September) and once during wet weather (October to March) for the first year of the discharge. The discharger may terminate monitoring for the congeners when the required wet and dry weather monitoring is complied with.
24. Annual samples shall be collected on the month the discharge authorization letter was issued.

B. INFLUENT MONITORING:

A grab³ sample of the influent to the treatment system shall be monitored on a monthly basis for total petroleum hydrocarbons, benzene, toluene, xylenes, ethylbenzene, tetrachlorethylene (PCE), trichloroethylene (TCE), 1,1-dichloroethane (1,1-DCA), and 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethylene (1,1-DCE), 1,2-dichloroethylene (1,2-DCE), chloroform, 1,4-Dioxane, Methyl ethyl ketone, Methyl isobutyl Ketone, Tert butyl alcohol (TBA), and methyl tertiary butyl ether (MTBE).

³ A "grab" sample is defined as any individual sample collected in less than 15 minutes.

C. EFFLUENT MONITORING:

1. The following shall constitute the effluent monitoring program:

CONSTITUENT ⁴	TYPE OF SAMPLE	UNITS	MINIMUM FREQUENCY OF SAMPLING & ANALYSIS
Flow	-----	GPD	Daily for one week and weekly thereafter
Total Petroleum Hydrocarbons ⁵	Grab	µg/l	Weekly
Benzene	"	"	"
Toluene	"	"	"
Xylene	"	"	"
Ethylbenzene	"	"	"
Carbon Tetrachloride	"	"	"
Chloroform	"	"	"
Dichlorobromomethane	"	"	"
Methyl Ethyl Ketone	"	"	"
Methyl Isobutyl Ketone	"	"	"
Methyl Tertiary Butyl Ether (MTBE)	"	"	"
Naphthalene	"	"	"
Tetrachloroethylene (PCE)	"	"	"
Trichloroethylene (TCE)	"	"	"
1,1-Dichloroethane (1,1-DCA)	"	"	"
1,1-Dichloroethylene (1,1-DCE)	"	"	"
1,2-Dichloroethylene (1,2-DCE)	"	"	"
1,1,1-Trichloroethane (1,1,1-TCA)	"	"	"
1,4-Dioxane	"	"	"
Tert Butyl Alcohol (TBA)	"	"	"
Acrolein	"	"	"
Acrylonitrile	"	"	"
Ethylene Dibromide (EDB)	"	"	"
Perchlorate	"	"	"
Total Phenols	"	"	"
Total Residual Chlorine ⁶	Grab	mg/l	"
Total Dissolved Solids	"	"	"
Total Inorganic Nitrogen (TIN)	"	"	"
Total Phosphorous ⁷	"	"	"
Selenium ⁷	"	"	"
Suspended Solids	"	"	"
Sulfide	Grab	mg/l	Weekly
Total Recoverable Lead	"	"	"

⁴ For testing organic volatile compounds use EPA Method 8260 and report entire suite of detected constituents at level of concern (see footnote 2, above).

⁵ Total Petroleum Hydrocarbons with gasoline distinction. TPH-G (Modified 8015) must include analysis for carbon range C4 through C12.

⁶ If chlorine is used for treatment or disinfection of wastes.

⁷ Applicable to those dischargers discharging within the San Diego Creek/Newport Bay Watershed.

CONSTITUENT ⁴	TYPE OF SAMPLE	UNITS	MINIMUM FREQUENCY OF SAMPLING & ANALYSIS
Hardness	Grab	mg/l	Weekly
2,3,7,8-TetraCDD	"	µg/l	Semi-annual (See A.6. & A.23.)
1,2,3,7,8-PentaCDD	"	"	"
1,2,3,4,7,8-HexaCDD	"	"	"
1,2,3,6,7,8-HexaCDD	"	"	"
1,2,3,7,8,9-HexaCDD	"	"	"
1,2,3,4,6,7,8-HeptaCDD	"	"	"
OctaCDD	"	"	"
2,3,7,8-TetraCDF	"	"	"
1,2,3,7,8-PentaCDF	"	"	"
2,3,4,7,8-PentaCDF	"	"	"
1,2,3,4,7,8-HexaCDF	"	"	"
1,2,3,6,7,8-HexaCDF	"	"	"
1,2,3,7,8,9-HexaCDF	"	"	"
2,3,4,6,7,8-HexaCDF	"	"	"
1,2,3,4,6,7,8-HeptaCDF	"	"	"
1,2,3,4,7,8,9-HeptaCDF	"	"	"
OctaCDF	"	"	"
Priority Pollutant (see Attachment "B")	Grab	"	Annually
Toxicity Testing (see paragraph A.5., above.)	Grab	Pass/Fail	At the initiation of the project and annually thereafter (see paragraph A.24., above)

2. The following shall constitute the effluent monitoring program for Mobile Treatment Units⁸ only:

CONSTITUENT ⁹	TYPE OF SAMPLE	UNITS	MINIMUM FREQUENCY OF SAMPLING & ANALYSIS
Flow	-----	GPD	Daily
Total Petroleum Hydrocarbons ¹⁰	Grab	µg/l	For discharges of 10,000 or more gallons per day (gpd)- sample every 5,000 gallons. For less than 10,000 gpd discharges- sample once every day of discharge
Benzene	"	"	"
Toluene	"	"	"
Xylene	"	"	"
Ethylbenzene	"	"	"
Carbon Tetrachloride	"	"	"
Chloroform	"	"	"
Dichlorobromomethane	"	"	"
Methyl Ethyl Ketone	"	"	"
Methyl Isobutyl Alcohol	"	"	"
Methyl Tertiary Butyl Ether (MTBE)	"	"	"
Naphthalene	"	"	"
Tetrachloroethylene (PCE)	"	"	"
Trichloroethylene (TCE)	"	"	"
1,1-Dichloroethane (1,1-DCA)	"	"	"
1,1-Dichloroethylene (1,1-DCE)	"	"	"
1,2-Dichloroethylene (1,2-DCE)	"	"	"
1,1,1-Trichloroethane (1,1,1-TCA)	"	"	"
1,4-Dioxane	"	"	"
Tert Butyl Alcohol (TBA)	"	"	"
Acrolein	"	"	"
Acrylonitrile	"	"	"
Ethylene Dibromide (EDB)	"	"	"
Perchlorate	"	"	"
Total Phenols	"	"	"

⁸ Mobile Treatment Unit is a self-contained mobile treatment system that can be used at multiple hydrocarbon/ solvent contaminated sites.

⁹ For testing organic volatile compounds use EPA Method 8260 and report entire suite of detected constituents at level of concern (see footnote 2, above).

¹⁰ Total Petroleum Hydrocarbons with gasoline distinction. TPH-G (Modified 8015) must include analysis for carbon range C4 through C12.

CONSTITUENT ⁹	TYPE OF SAMPLE	UNITS	MINIMUM FREQUENCY OF SAMPLING & ANALYSIS
Total Residual Chlorine ¹¹	Grab	mg/l	Each discharge at each site. If prior characterization of effluent indicate values within Basin Plan Objectives, then no further monitoring is needed at the site. ¹²
Total Dissolved Solids	"	"	"
Total Inorganic Nitrogen (TIN)	"	"	"
Total Phosphorous ¹³	"	"	"
Selenium ⁷	"	"	"
Suspended Solids	"	"	"
Sulfide	"	"	"
Hardness	"	"	"
Total Recoverable Lead	Grab	mg/l	Each discharge at each site. If prior characterization of effluent indicate values within permit limits, then no further monitoring is needed at the site.
2,3,7,8-TetraCDD	"	µg/l	Semi-annual (See A.6. & A.23.)
1,2,3,7,8-PentaCDD	"	"	"
1,2,3,4,7,8-HexaCDD	"	"	"
1,2,3,6,7,8-HexaCDD	"	"	"
1,2,3,7,8,9-HexaCDD	"	"	"
1,2,3,4,6,7,8-HeptaCDD	"	"	"
OctaCDD	"	"	"
2,3,7,8-TetraCDF	"	"	"
1,2,3,7,8-PentaCDF	"	"	"
2,3,4,7,8-PentaCDF	"	"	"
1,2,3,4,7,8-HexaCDF	"	"	"
1,2,3,6,7,8-HexaCDF	"	"	"
1,2,3,7,8,9-HexaCDF	"	"	"
2,3,4,6,7,8-HexaCDF	"	"	"
1,2,3,4,6,7,8-HeptaCDF	"	"	"
1,2,3,4,7,8,9-HeptaCDF	"	"	"
OctaCDF	"	"	"
Priority Pollutant (see Attachment "B")	Grab	"	Annually
Toxicity Testing (see paragraph A.5., above.)	Grab	Pass/Fail	At the initiation of the project and annually thereafter (see paragraph A.24., above) If toxic levels are detected, then additional testing may be required.

¹¹ *If chlorine is used for treatment or disinfection of wastes.*

¹² *For Discharges to San Diego Creek Watershed and Newport Bay, monitoring for total inorganic nitrogen and total phosphorous shall be done during each discharge at each site even if prior characterization of effluent indicate values within Basin Plan Objectives.*

¹³ *Applicable to those dischargers discharging within the San Diego Creek/Newport Bay Watershed.*

3. The monitoring frequency for those priority pollutants that are detected during the required annual monitoring at a concentration greater than fifty percent of the most stringent applicable receiving water objective (freshwater or human health (consumption of organisms only) as specified for that pollutant in 40 CFR 131.38¹⁴) shall be accelerated to quarterly for one year following detection. To return to the annual monitoring frequency, the discharger shall request and receive approval from the Regional Board's Executive Officer or designee.
4. The discharger may request a reduction in the monitoring frequency when appropriate in accordance with Section E.14 of the Order.

D. REPORTING:

Reporting shall be in accordance with the following:

1. All monitoring reports, or information submitted to the Regional Board shall be signed and certified in accordance with 40 CFR 122.22 and shall be submitted under penalty of perjury.
2. All reports shall be arranged in a tabular format to clearly show compliance or noncompliance with each discharge limitation.
3. One week before groundwater extraction, treatment, and discharge is commenced, the discharger shall notify the Regional Board or its designated compliance officer by email and/or orally by telephone.
4. If no discharge occurs during the previous monitoring period, a letter to that effect shall be submitted in lieu of a monitoring report.
5. The discharger shall notify the Regional Board in writing when groundwater treatment and discharge is stopped for more than a week. The report shall include a discussion as to why groundwater remediation is stopped and when treatment will commence.
6. For every item of monitoring data where the requirements are not met, the monitoring report shall include a statement discussing the reasons for noncompliance, and of the actions undertaken or proposed which will bring the discharger into full compliance with requirements at the earliest time, and an estimate of the date when the discharger will be in compliance. The discharger shall notify the Regional Board by letter when compliance with the time schedule has been achieved.

¹⁴ See Federal Register / Vol. 65, No. 97 / Thursday, May 18, 2000 / Rules and Regulations.

7. Noncompliance Reporting

- a. The discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided to the Executive Officer (909-782-4130) and the Office of Emergency Services (1-800-852-7550) orally within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within 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.
- b. Any violation of a maximum daily discharge limitation for any of the pollutants listed in this Order shall be included as information that must be reported within 24 hours.
- c. The Regional Board may waive the above required written report on a case-by-case basis.

8. Except for data determined to be confidential under Section 308 of the Clean Water Act (CWA), all reports prepared in accordance with the terms of this Order shall be available for public inspection at the offices of the Regional Water Quality Control Board and the Regional Administrator of EPA. As required by the CWA, effluent data shall not be considered confidential.

9. Monitoring reports shall be submitted by the 30th day of each month following the monitoring period and shall include:

- a. The results of all chemical analyses for the previous month, and annual samples whenever applicable,
- b. The daily flow data,
- c. A summary of the month's activities including a report detailing compliance or noncompliance with the task for the specific schedule date, and
- d. For every item where the requirements are not met, the discharger shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time and submit a timetable for correction.

Ordered by _____
Gerard J. Thibeault
Executive Officer

January 23, 2002

EPA PRIORITY POLLUTANT LIST					
Metals	Method	Base/Neutral Extractibles	Method	Acid Extractibles	Method
Antimony	ICP	Acenaphthene	625	2-Chlorophenol	625
Arsenic	GF/AA	Acenaphthylene	"	2,4-Dichlorophenol	"
Beryllium	ICP	Anthracene	"	2,4-Dimethylphenol	"
Cadmium	ICP	Benzidine	"	4,6-Dinitro-O-Cresol	"
Chromium	ICP	Benzo (a) Anthracene	"	2,4-Dinitrophenol	"
Copper	GF/AA	Benzo (a) Pyrene	"	2-Nitrophenol	"
Lead	GF/AA	Benzo (b) Fluoranthene	"	4-Nitrophenol	"
Mercury	CV/AA	Benzo (g,h,i) Perylene	"	P-Chloro-M-Cresol	"
Nickel	ICP	Benzo (k) Fluoranthene	"	Pentachlorophenol	"
Selenium	GF/HYDRIDE	Bis (2-Chloroethoxy) Methane	"	Phenol	"
Silver	ICP	Bis (2-Chloroethyl) Ether	"	2, 4, 6 - Trichlorophenol	"
Thallium	ICP	Bis (2-Chloroisopropyl) Ether	"		
Zinc	ICP	Bis (2-Ethylhexyl) Phthalate	"		
		4-Bromophenyl Phenyl Ether	"	Volatile Organics	Method
Miscellaneous	Method	Butyl Benzyl Phthalate	"	Acrolein	603
Cyanide	335.2/335.3	2-Chloronaphthalene	"	Acrylonitrile	"
Asbestos (not required unless requested)		Chrysene	"	Benzene	601/602
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (TCDD)	8280	Dibenzo (a,h) Anthracene	"	Bromoform	"
		4-Chlorophenyl Phenyl Ether	"	Carbon Tetrachloride	"
Pesticides	Method	1,2-Dichlorobenzene	"	Chlorobenzene	"
Aldrin	608	1,3-Dichlorobenzene	"	Chlorodibromomethane	"
Chlordane	"	1,4-Dichlorobenzene	"	Chloroethane	"
Dieldrin	"	3,3-Dichlorobenzidine	"	2-Chloroethyl Vinyl Ether	"
4, 4' - DDT	"	Diethyl Phthalate	"	Chloroform	"
4, 4' - DDE	"	Dimethyl Phthalate	"	Dichlorobromomethane	"
4, 4' - DDD	"	Di-N-Butyl Phthalate	"	1,1-Dichloroethane	"
Alpha Endosulfan	"	2,4-Dinitrotoluene	"	1,2-Dichloroethane	"
Beta Endosulfan	"	2-6-Dinitrotoluene	"	1,1-Dichloroethylene	"
Endosulfan Sulfate	"	1,2-Dipenylhydrazine (as Azobenzene)	"	1,2-Dichloropropane	"
Endrin	"	Di-N-Octyl Phthalate	"	1,3-Dichloropropylene	"
Endrin Aldehyde	"	Fluoranthene	"	Ethylbenzene	"
Heptachlor	"	Fluorene	"	Methyl Bromide	"
Heptachlor Epoxide	"	Hexachlorobenzene	"	Methyl Chloride	"
Alpha BHC	"	Hexachlorobutadiene	"	Methylene Chloride	"
Beta BHC	"	Hexachlorocyclopentadiene	"	1,1,2,2-Tetrachloroethane	"
Delta BHC	"	Hexachloroethane	"	Tetrachloroethylene	"
Gamma BHC	"	Indeno (1,2,3-cd) Pyrene	"	Toluene	"
Toxaphene	"	Isophorone	"	1,2-Trans-Dichloroethylene	"
PCB 1016	"	Naphthalene	"	1,1,1-Trichloroethane	"
PCB 1221	"	Nitrobenzene	"	1,1,2-Trichloroethane	"
PCB 1232	"	N-Nitrosodimethylamine	"	Trichloroethylene	"
PCB 1242	"	N-Nitrosodi-N-Propylamine	"	Vinyl Chloride	"
PCB 1248	"	N-Nitrosodiphenylamine	"		
PCB 1254	"	Phenanthrene	"		
PCB 1260	"	Pyrene	"		
		1,2,4-Trichlorobenzene	"		

PRACTICAL QUANTITATION LEVELS FOR COMPLIANCE DETERMINATION		
Constituent	PQL µg/l	Analysis Method
1 Arsenic	7.5	GF/AA
2 Barium	20.0	ICP/GFAA
3 Cadmium	15.0	ICP
4 Chromium (VI)	15.0	ICP
5 Cobalt	10.0	GF/AA
6 Copper	19.0	GF/ICP
7 Cyanide	50.0	335.2/335.3
8 Iron	100.0	ICP
9 Lead	26.0	GF/AA
10 Manganese	20.0	ICP
11 Mercury	0.50	CV/AA
12 Nickel	50.0	ICP
13 Selenium	14.0	GF HYDRIDE GENERATION
14 Silver	16.0	ICP
15 Zinc	20.0	ICP
16 1,2 - Dichlorobenzene	5.0	601/602/624
17 1,3 - Dichlorobenzene	5.0	601
18 1,4 - Dichlorobenzene	5.0	601
18 2,4 - Dichlorophenol	10.0	604/625
20 4 - Chloro -3- methylphenol	10.0	604/625
21 Aldrin	0.04	608
22 Benzene	1.0	602/624
23 Chlordane	0.30	608
24 Chloroform	5.0	601/624
25 DDT	0.10	608
26 Dichloromethane	5.0	601/624
27 Dieldrin	0.10	608
28 Fluorantene	10.0	610/625
29 Endosulfan	0.50	608
30 Endrin	0.10	608
31 Halomethanes	5.0	601/624
32 Heptachlor	0.03	608
33 Hepthachlor Epoxide	0.05	608
34 Hexachlorobenzene	10.0	625
35 Hexachlorocyclohexane		
Alpha	0.03	608
Beta	0.03	608
Gamma	0.03	608
36 PAH's	10.0	610/625
37 PCB	1.0	608
38 Pentachlorophenol	10.0	604/625
39 Phenol	10.0	604/625
40 TCDD Equivalent	0.05	8280
41 Toluene	1.0	602/625
42 Toxaphene	2.0	608
43 Tributyltin	0.02	GC
44 2,4,6-Trichlorophenol	10.0	604/625

California Regional Water Quality Control Board
Santa Ana Region

January 23, 2002

ITEM: 5

SUBJECT:

Renewal of general groundwater cleanup permit for the discharge to surface waters of extracted and treated groundwater resulting from the cleanup of groundwater polluted by petroleum hydrocarbons, solvents and/or petroleum hydrocarbons mixed with lead and/or solvents within the Santa Ana Region, Order No. R8-2002-0007 (NPDES No. CAG918001)

DISCUSSION:

See Attached Fact Sheet

RECOMMENDATION:

Adopt Order No. R8-2002-0007, NPDES No. CAG918001 as presented.

Comments were solicited from the following agencies:

U.S. Environmental Protection Agency, Permits Issuance Section (WTR-5) - Terry Oda
U.S. Army District, Los Angeles, Corps of Engineers - Regulatory Branch
U.S. Fish and Wildlife Service - Carlsbad
State Water Resources Control Board, Office of the Chief Counsel – Jorge Leon
State Water Resources Control Board, Division of Water Quality - James Kassel
State Department of Water Resources - Glendale
State Department of Fish and Game - Long Beach
State Department of Health Services, Santa Ana - Frank Hamamura
State Department of Health Services, San Bernardino – Kalyanpur Baliga
State Department of Health Services, San Diego –
Orange County Environmental Management Agency, Resources Division - Chris Crompton
Orange County Health Care Agency - Seth Daugherty
Orange County Water District – Nira Yamachika
Riverside County Environmental Health Department - Sandy Bonchek
San Bernardino County Department of Public Works, Environmental Management Division -
Jim Borcuk
San Bernardino County Environmental Health Department – Ron Ripley
City of Fullerton Fire Department - John White
City of Santa Ana Fire Department - Bruce Guy
City of Orange Fire Department - Anne Bland
South Coast Air Quality Management District - James Lents
City of Santa Ana - City Manager
Orange County Coastkeeper – Garry Brown
Lawyers for Clean Water C/c San Francisco Baykeeper
And the attached mailing list (current enrollees)

California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3348

January 23, 2002

FACT SHEET

The attached pages contain information concerning revised general waste discharge requirements and a National Pollutant Discharge Elimination System (NPDES) permit for discharges of extracted and treated groundwater resulting from the cleanup of groundwater polluted by petroleum hydrocarbons, solvents and/or petroleum hydrocarbons mixed with lead and/or solvents.

I. NEED FOR RENEWAL OF THE GENERAL WASTE DISCHARGE REQUIREMENTS:

Order No. 96-18, NPDES No. CAG918001 is a general NPDES permit adopted by the Regional Board on October 16, 1996 for discharges to surface waters of extracted and treated groundwater resulting from the cleanup of groundwater polluted by petroleum hydrocarbons and/or solvents at service stations and similar sites. The Order facilitated the processing of permit applications and the early implementation of groundwater cleanup projects within the Santa Ana Region. Below is a tabulation of the number of authorizations to discharge under Order No. 96-18 that have been issued, by county.

	COUNTY			Total
	Orange ¹	Riverside	San Bernardino	
Enrollees	160 ²	13	12	185
Active Sites	110	10	11	131
Coverage terminated	50	3	1	54

It is anticipated that most of these dischargers will be submitting renewal applications for continued discharges from their groundwater cleanup operations. Furthermore, additional applications are expected for sites recently determined to require groundwater remediation. The demand for permit issuance will far exceed the available staff resources to develop and bring individual tentative waste discharge requirements to the Board for adoption. These circumstances necessitate the renewal of this general NPDES permit.

¹ 34 facilities are located within the San Diego Creek/Newport Bay Watershed.

² These include mobile dischargers who treat hydrocarbon or solvent contaminated purged waters from groundwater monitoring wells at various locations within the Santa Ana Region.

II. GENERAL NPDES PERMIT:

The issuance of general permits is authorized at 40 CFR³ 122.28. This section of the regulations provides for the issuance of general permits to regulate discharges of wastes that result from similar operations, are the same types of wastes, require the same effluent limitations, require similar monitoring, and are more appropriately regulated under a general permit than under individual permits. In most cases, discharges of extracted and treated groundwater to surface waters of the Santa Ana Region from sites polluted by petroleum hydrocarbons, solvents and/or petroleum hydrocarbons mixed with lead and/or solvents, meet the requirements of 40 CFR 122.28. Where these requirements are not met, individual permits are required.

The United States Environmental Protection Agency, Region IX, granted authority to the State of California to issue general permits pursuant to 40 CFR 122.28 on September 22, 1989.

III. REGULATORY BASIS FOR WASTE DISCHARGE REQUIREMENTS:

This Order includes requirements that implement the Water Quality Control Plan (Basin Plan), which was adopted by the Regional Board on March 11, 1994. The Basin Plan was approved by the Office of Administrative Law and became effective on January 24, 1995. This Plan specifies water quality objectives and beneficial uses for the waters of the Santa Ana Region.

The proposed Order specifies numeric and narrative limits for the control of toxic substances. These limits implement relevant Basin Plan objectives, including objectives specified in the California Toxics Rule, and other state and federal requirements. These limits are based on best available technology economically achievable and best professional judgement using the following.

1. 1995 Basin Plan
2. Santa Ana River Use-Attainability Analysis, Volume 10, Calculation of Total-to-Dissolved Metal Ratios to Translate Site-Specific Water Quality Objectives into NPDES Effluent Limits, Risk Sciences (May, 1994).
3. Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California adopted on March 2, 2000 by the State Water Resources Control Board (hereinafter, "Policy")
4. Code of Federal Regulations (40 CFR Parts 122-44)
5. Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California, promulgated in May 18, 2000 by the U.S. EPA ("California Toxics Rule").
6. U.S. EPA, Quality Criteria for Water (1986)
7. Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001, March 1991)
8. EPA's Maximum Contaminant Levels (MCLs) for drinking water;

³ Code of Federal Regulations.

9. State Department of Health Services' (DHS) MCLs and Office of Environmental Health Hazard Assessment (OEHHA) MCLs and Action Levels; and,
10. Current analytical detection limits.

Groundwater pollutant plumes are often complex mixtures of hundreds of petroleum-related compounds (e.g., gasoline contains over 200 chemicals), which makes complete chemical analyses very expensive and sometimes impractical or impossible due to sample matrix interferences, constituent masking, or the lack of standard analytical techniques.

Further, neither the State nor the U.S. EPA has proposed/established quality objectives for many of the petroleum hydrocarbon compounds. Therefore, indicator constituents for the detection and evaluation of complex mixtures of petroleum related compounds such as gasoline and diesel will be used in monitoring groundwater discharged to surface waters in the Santa Ana Region. The indicator constituents⁴ used for evaluating compliance for discharges of gasoline and diesel related products are benzene, toluene, ethylbenzene, xylene (BTEX) and total petroleum hydrocarbons. For chlorinated hydrocarbon solvents such as trichloroethylene (TCE) and tetrachloroethylene (PCE), the specific chemical constituents and/or their degradation products can be used to evaluate compliance with the permit limitations. The limits for these constituents are based on EPA's Maximum Contaminant Levels (MCLs) and/or DHS/OEHHA MCL and action levels.

To reduce the amount of carbon monoxide in the atmosphere and abate air pollution, oxygenated fuels were required by the U.S. EPA in select metropolitan areas such as Southern California. Fuel oxygenates are also used to enhance the octane of conventional gasoline. To date, Methyl tertiary-butyl ether (MTBE) has been the most commonly used fuel oxygenate. Oxygenates in limited commercial use also include ethyl tert-butyl ether (ETBE) and tert-amyl methyl ether (TAME), tert-butyl alcohol (TBA), methanol (MeOH), and diisopropyl ether (DIPE). Accidental releases of gasoline to the subsurface from underground storage tanks, pipelines, refueling facilities, and landfills provide point sources for entry of oxygenates into the hydrologic cycle, together with the gasoline hydrocarbons. MTBE, as well as other alkyl ether oxygenates, ETBE and TAME are much less biodegradable than BTEX hydrocarbons in ground water. Furthermore, the fuel oxygenates sorb only weakly to soil and aquifer material, thereby increasing the risk of groundwater contamination.

Recent findings indicate the presence of MTBE in over 60% of surface water supply reservoirs and groundwater water supply wells in California. Data from a Lawrence Livermore National Laboratory study show that MTBE has been detected at over 4,600 leaking underground tank sites. Consequently, on March 26, 1999, the Governor concluded that the use of MTBE in California gasoline poses a significant risk to California's environment, and directed that MTBE be phased out of California gasoline as soon as possible. The risks to California's environment

⁴ *It is believed that fuels have been adequately studied to justify limiting the analysis to these compounds (see "Leaking Underground Storage Tank Manual: guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure," State of California, Leaking Underground Fuel Tank Task Force, May 1988).*

prompted the State Department of Health Services (DHS) to establish a maximum contaminant level for MTBE in drinking water of 13 micrograms per liter.

Tert Butyl Alcohol (TBA) is also being detected in effluent streams and, like MTBE, poses a threat to water quality. In 1999, DHS established a drinking water action level for Tert Butyl Alcohol (TBA) at 12 µg/l.

This Order specifies effluent limits for both MTBE and TBA based on DHS's drinking water MCL and action level, respectively.

Diesel fuel consists primarily of straight-chained hydrocarbons (alkenes and alkanes) ranging in length from C10 to C23, with C16 and C17 predominating. The C10-C23 straight-chain hydrocarbons in groundwater can be quantified using standard analytical techniques. Since the predominant components of diesel fuel are the straight-chain hydrocarbons, the California Department of Health Services' recommended analytical procedure for total petroleum hydrocarbons-diesel⁵ is used to indicate groundwater polluted by diesel fuel.

Discharge limitations are included in this Order for those other chemicals of concern that typically pollute groundwater at service stations and similar sites in the Santa Ana Region. In addition, the monitoring program includes analyses for additional constituents to determine the overall impact of individual discharges and to screen for unexpected chemicals.

Generally, for freshwater discharges, there is no significant amount of receiving water at the point of discharge. Therefore, no mixing zone allowance is included in the calculation of effluent limits in this Order. Consequently, compliance with the effluent limits is required to be determined at the end of the discharge pipe. For ocean or freshwater discharges, if the discharger requests that a mixing zone allowance be included in the determination of appropriate effluent limits, consideration of an individual permit will be required. This Order provides coverage for ocean discharges where no mixing zone is proposed. In accordance with the requirements of the California Ocean Plan, this Order prohibits direct discharges of wastes to the Newport Beach Marine Life Refuge and Irvine Coast Marine Life Refuge Areas of Special Biological Significance.

Discharge limitations for lead are also included in the Order. For discharges to fresh water and enclosed bays and estuaries the limits are based on the California Toxics Rule lead objectives. For freshwater, the objectives are equations in which hardness is the variable. The actual numeric value of the objectives is calculated using hardness measurements. To determine the effluent limitation for lead for each freshwater discharge, and to facilitate the determination of compliance, a fixed effluent hardness value will be used in the objective equations. Federal regulations require that the effluent limits for metals be expressed as the total recoverable form. To comply with this requirement, the dissolved criteria are translated into total recoverable effluent limits using ratios of the total recoverable metals to dissolved metals (t/d)

⁵ *Leaking Underground Fuel Tank (LUFT) Manual: Guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure, October 1989.*

concentrations. The State Water Resources Control Board's Policy stipulates that in the absence of site-specific information, the conversion factors cited in the CTR should be used as the t/d translators. For Reach 2, 3, 4 and tributaries of these Reaches of the Santa Ana River, a site-specific translator for lead (6.1), was developed in a study and reported in the "Santa Ana River Use-Attainability Analysis, Volume 10, Calculation of Total-to-Dissolved Metal Ratios to Translate Site-Specific Water Quality Objectives into NPDES Effluent Limits", Risk Sciences (March, 1994). For those surface waters in the Region other than Reach 2, 3, 4 and tributaries of these Reaches of the Santa Ana River, the conversion factor for lead cited in the CTR is used as the t/d translator. The calculation procedures described in the State Board's Policy were used in calculating effluent limitations for lead⁶. The Order includes a tabulation of calculated effluent limits for lead corresponding to fixed hardness values (20 through 400 milligrams per liter). The calculations for arriving at the effluent limits for lead are in the Regional Board's file for the general groundwater cleanup permit. At sites polluted with leaded gasoline, the discharger is required to propose the hardness value that will be used in determining the appropriate numeric limit for the discharge. The fixed hardness value, which shall be based on the 5th percentile of effluent hardness measurements or the ambient receiving water hardness measurements (whichever is more restrictive), shall be determined and submitted for approval by the Executive Officer of the Regional Board. Upon approval of the hardness value for the discharge, the effluent limit for lead discharges to freshwater bodies is determined from the table. For ocean water discharges, the limits are based on the California Ocean Plan.

Step 6 of the permit limit calculation procedure specified in the Policy stipulates that the average monthly effluent limitation is set equal to the effluent concentration allowance⁷. Where there is no mixing zone allowance and a California Toxics Rule human health objective; the effluent concentration allowance is equal to the applicable human health objective. Therefore, in these circumstances the AML is equal to the human health objective. The Policy stipulates that where receiving waters are designated with the municipal water supply beneficial use (MUN), the human health objective for the consumption of water and organism applies in calculating the effluent limitation, otherwise the human health objective for the consumption of organism only applies. This Order includes effluent limits for discharges to receiving waters that are designated MUN and for those that are not. For discharges to receiving waters designated MUN, the AMLs were taken from the California Toxics Rule human health objectives for the consumption of water and organisms. Each AML effluent limitation was multiplied by a 1.55 factor to determine the maximum daily concentration effluent limit. This factor is the average monthly effluent limit multiplier taken from Table 2 of the Policy. The multiplier corresponds to a coefficient of variation of 0.6 and number of samples equal to 4. For receiving waters not designated MUN, the AML considering that most of the limits were from the Department of Health Services

⁶ *A coefficient of variation of 0.6 was used.*

⁷ *The EFFLUENT CONCENTRATION ALLOWANCE (ECA) is a value derived from the water quality 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 U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).*

maximum contaminant level values for the protection of human health. The same multiplier factor (1.55) was used to derive the maximum daily effluent limit.

The AMLs were based on Department of Health Services MCLs for the protection of public health. The addition of average monthly limit and calculation of maximum daily limits in this Order as required by federal regulations and the State Board's Policy, results in maximum daily limits that are less stringent than the maximum daily limits specified in Order No.96-18. However, this does not result in less stringent effective regulation of these discharges since the inclusion of AMLs will necessitate more frequent oversight and monitoring of the treatment systems by the dischargers to ensure their continued efficacy.

For several dischargers authorized to discharge under Order No. 96-18, methyl ethyl ketone (MEK) has been detected at concentrations above the effluent limitation of 10 microgram per liter ($\mu\text{g/l}$). These dischargers have questioned the validity of the effluent limit. In Order No. 91-63, which was the predecessor of Order No. 96-18, and in Order No. 96-18, the MEK limit was based on best professional judgement using the best available detection level. This basis did not consider whether there is treatment available to reduce or remove MEK. No public comment or concern was raised concerning the effluent limit for MEK during consideration of either Order No. 91-63 or Order 96-18. In response to the concerns expressed recently, a search for an accepted practicable treatment that could remove or treat MEK was conducted, but none was found. However, there is evidence from some groundwater remediation sites in this Region that activated carbon treatment reduces the concentration of MEK. Some remediation sites indicate no MEK reduction through treatment with activated carbon. The US EPA has not developed recommended water quality criteria for MEK. The current odor threshold level for MEK is at 8400 micrograms per liter ($\mu\text{g/l}$)⁸. A cancer risk value of 4,200 $\mu\text{g/l}$ ⁹ is recommended. Current toxicity studies on MEK are very inconclusive. The effluent limit specified in this Order for MEK 120 $\mu\text{g/l}$ is based on the following considerations. First, the Department of Health Services has established an action level for methyl isobutyl ketone (MIBK) at 120 $\mu\text{g/l}$. MEK and MIBK belong to the same class of liquid organic compounds. Second, while MEK has a variety of both anthropogenic and natural sources, it is not expected to be found at high concentrations in surface or groundwaters. In accordance with antidegradation policy, it is appropriate to place a practicable limit on MEK discharges to prevent the lowering of water quality and protect beneficial uses.

Monitoring is the primary means of ensuring that waste discharge requirements are met. It is also the basis for enforcement actions against dischargers who are in violation of the waste discharge requirements issued by the Regional Board. All dischargers enrolled under this general permit will be required to conduct monitoring in accordance with a monitoring program issued by the Executive Officer. Each monitoring and reporting program will be customized for each enrollee based on the characteristics of the groundwater being treated and discharged. The

⁸ Taken from "J.E. Amore and E. Huatata, *Odor as an Aid to Chemical Safety: Odor Thresholds Compared with Threshold Limit Values and Volatiles for 214 Industrial Chemicals in Air and Water Dilution*, *Journal of Applied Toxicology*, Vol. 3, No. 6 (1983)"

⁹ Based on U.S. EPA Integrated Risk Information System (IRIS).

typical required constituents and frequency of analyses are tabulated in the self-monitoring program attached to this general permit as "Typical Monitoring and Reporting Program (MR&P) No. R8-2002-0007." This monitoring and reporting program will be revised as appropriate. An increase of the parameters or frequency of monitoring will be required when monitoring data show the presence of petroleum hydrocarbons that are not limited in this Order, or toxicity test failures. A reduction of the parameters or frequency of monitoring may be implemented with prior approval of the Executive Officer when monitoring data demonstrate that such reduction is warranted. In accordance with the Policy, this Order requires dischargers covered under this general permit to monitor for the 17 congeners specified in the Policy, once during dry weather and once during wet weather for a one-year period.

On April 17, 1998, the Regional Board adopted Resolution No. 98-9 amending the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) to include a nutrient Total Maximum Daily Load (TMDL) for the Newport Bay/San Diego Creek Watershed. The nutrient TMDL was amended by Resolution No. 98-100 on October 9, 1998. Thereafter, it was approved by the State Water Resources Control Board, Office of Administrative Law and the U.S. EPA. As previously noted, 34 sites now covered under the general permit Order No. 96-18 discharge treated wastewater into tributaries of San Diego Creek. Two of these sites¹⁰ showed concentrations of total inorganic nitrogen above 10 mg/l (maximum of 12.4 mg/l), while five sites reported less than 2 mg/l TIN and the rest did not report TIN values. For the year 2000, the contribution of TIN into the watershed from groundwater cleanup activities is estimated at 1756 lbs.¹¹ Studies are being or will be conducted to provide more definitive data on the nutrient contributions of groundwater cleanup discharges. The data collected will be used to refine the TMDL

The nutrient TMDL specifies load allocations for total nitrogen inputs from "Undefined Sources" to the Newport Bay watershed and to San Diego Creek, Reach 2 (upstream of Jeffrey Road) during non-storm conditions. "Undefined Sources" include discharges from groundwater cleanup projects in the watershed (as well as rising groundwater, atmospheric deposition, dewatering discharges, and other sources).¹² These load allocations require reductions of total nitrogen inputs from these Undefined Sources over time. For the watershed, the TMDL requires a 30% reduction in summer (April – September) inputs by 2002, and a 50% reduction in summer inputs by 2007. A 50% reduction in wintertime inputs (October – March) is to be achieved by 2012. For San Diego Creek, Reach 2 (non-storm conditions), more significant reductions are necessary to assure that the total nitrogen inputs do not cause violation of the Basin Plan water quality objective for that Reach. For this Reach of San Diego Creek, total nitrogen discharges from nurseries, agriculture and "Undefined Sources" are not to exceed 8.5 lbs./day by 2012. The

¹⁰ *Only one site reported discharging treated wastewater in the year 2000. The other site stopped discharging sometime in 1998 but continues to be covered under the general permit.*

¹¹ *This is an estimate based on 28,725,784 gallons and an estimated average TIN concentration of 7.33 mg/l.*

¹² *Load allocations for both total nitrogen and phosphorus are specified in the TMDL. The phosphorus load allocations are assigned to open space and agricultural areas. No phosphorus load allocations are specified for groundwater cleanup discharges since these discharges are not expected to include phosphorus.*

TMDL stipulates that compliance with all the requisite reductions is to be achieved no later than the dates specified, and that the Regional Board may require earlier compliance where it is feasible and reasonable.

Additional data are needed to determine the total nitrogen contribution of groundwater cleanup discharges to San Diego Creek, Reach 2 relative to those from nurseries and agriculture. This information is needed to determine the appropriate proportion of the load allocation that should be assigned to groundwater cleanup discharges. Since this specific allocation is not known, it is not possible, at this time, to determine whether any total nitrogen reductions are needed to meet it, and whether such reductions would be feasible. Therefore, it is not feasible or reasonable to require implementation of the San Diego Creek Reach 2 load allocation in this Order. Implementation of this load allocation will be accomplished in future revisions to or renewal of this Order, once appropriate data are available. However, it does appear feasible and reasonable to require compliance with the 50% reduction in nitrogen inputs from groundwater cleanup discharges to the watershed earlier than 2007/2012. There is an ongoing effort by watershed stakeholders to design and implement a regional program to achieve the nitrogen reductions required by the TMDL. Implementation of this program, with participation by the groundwater cleanup dischargers, would likely enable the dischargers to achieve the requisite nitrogen reductions. Alternatively, the groundwater cleanup dischargers could implement site-specific measures, e.g., additional treatment systems, to achieve the required total nitrogen reductions. This Order requires each groundwater cleanup discharger to the Newport Bay/San Diego Creek watershed to submit a plan for approval by the Regional Board's Executive Officer that identifies the method(s) and schedule by which the discharger proposes to achieve a 50% reduction in the total nitrogen of their discharges. The schedule is to reflect the shortest practical time necessary to achieve the 50 % reduction, but in no case extend beyond January 1, 2007.

On April 17, 1998, the Regional Board also adopted Resolution No. 98-69, amending the Basin Plan to include a TMDL for sediment in the Newport Bay/San Diego Creek Watershed. The sediment TMDL requires the implementation of Best Management Practices (BMPs) to control sediment to provide a reasonable assurance that water quality standards will be met. This sediment TMDL was amended by Resolution No. 98-101 on October 9, 1998 and has also been approved by the State Water Resources Control Board, Office of Administrative Law and the US EPA. The TMDL did not assign a wasteload allocation to groundwater cleanup related discharges. This Order includes a suspended solids limit of 75 mg/l. Treated wastewaters from groundwater cleanup activities are normally treated using activated carbon filters and as such, effluent discharges do not contain suspended solids concentration above 75 mg/l. Such discharges are considered consistent with the sediment TMDL.

IV. TREATMENT TECHNOLOGY:

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.

v. **COVERAGE UNDER THE GENERAL PERMIT:**

This Order requires each new discharger¹³ to submit to the Executive Officer an application for the proposed discharge. Submission of the application will constitute a "Notice of Intent" to be covered under this Order. The application for the proposed discharge will require, at the minimum, the following information:

1. Notice of Intent to be covered under this general permit.
2. A site characterization study which defines the onsite contaminants and their properties, the three-dimensional extent and concentration of contaminants in the subsurface, and includes a description of the geologic and hydrologic factors that control the migration of the contaminants.
3. A report that shall include the following:
 - a. Chemical analysis of the untreated groundwater;
 - b. The name of the proposed receiving water body;
 - c. The estimated average and maximum daily flow rates;
 - d. A map showing the path from the point of initial discharge to the ultimate location of discharge;
 - e. A list of known or suspected leaking underground tanks and other facilities or operations which have, or may have impacted the quality of the underlying groundwater.
 - f. A discussion of the proposed cleanup project including a review of the extraction system design and the status of definition of free product and dissolved product plumes;
 - g. A description of the proposed treatment system and a certification report on the adequacy of each component of the proposed treatment system along with the associated operation. This certification report shall contain a requirement-by-requirement analysis, based on accepted engineering practice, of how the process(es) and physical design(s) of the treatment system will ensure compliance with this Order. The design engineer shall affix his/her signature and engineering license number to this certification report. The report(s) shall also certify the following:
 - (1) All treatment facility startup and operation instruction manuals are adequate and available to operating personnel;

¹³ "New discharger" refers to those proposing to discharge wastewater under Order No. R8-2002-0007 and not currently covered under Order No. 96-18.

- (2) All treatment facility maintenance and testing schedules are included in the treatment facility operation and maintenance manual (O&M Manual) which shall be kept readily accessible to onsite operating personnel; and
 - (3) Influent and effluent sampling locations and ports located in areas where samples representative of the waste stream to be monitored can be obtained.
 - h. A discussion of a plan for the prevention of run-on, interception and diversion of runoff, and prevention of infiltration and runoff from contaminated soils stored on-site, if the discharge is associated with a groundwater remediation project and soils containing petroleum projects or other pollutants will be maintained on-site; and
 - i. Any other information deemed necessary by the Executive Officer.
- 4. This Order requires those dischargers already covered under the general permit Order No. 96-18 and those dischargers under individual permits who wish to be covered under this renewed general permit to submit only a notice of intent unless otherwise required to submit information about any recent change in ownership of facility, changes in the character and treatment of the discharges and any other relevant information that will update facility information which are on the Regional Board files.

VI. DISCHARGE AUTHORIZATION LETTER:

Upon receipt of a complete application for a proposed discharge, the Executive Officer will review the application to determine whether the proposed discharger has demonstrated that it will comply with the following criteria and is eligible to discharge wastes under this Order:

- a. The proposed discharge results from the cleanup of groundwater polluted by fuel leaks and other related wastes at a service station or a similar site;
- b. The proposed discharge is to surface waters within the Santa Ana Region;
- c. The proposed treatment system and associated operation, maintenance, and monitoring plans are capable of ensuring that the discharge will meet the waste discharge requirements of this Order;
- d. The proposed discharge will not have any adverse impact on waters of exceptional recreational or ecological significance.

Upon determination by the Executive Officer that the proposed discharge satisfies the requirements of this Order, the Executive Officer may either:

- a. Authorize the proposed discharge by transmitting a discharge authorization letter to the discharge proponent (thereupon an "authorized discharger" or "enrollee")

authorizing the initiation of the discharge subject to the conditions of this Order and any other conditions necessary to protect the beneficial uses of waters within the Santa Ana Region. The discharge authorization letter will also transmit a self-monitoring program. The discharge authorization letter may be terminated or revised by the Executive Officer at any time. The Executive Officer will submit a copy of the discharge authorization letter to the State Water Resources Control Board and the EPA. A list of the discharge authorization letters that have been issued will be reported in the Board's meeting agenda; or

- b. Require the discharge proponent to obtain an individual NPDES permit prior to any discharge to surface waters in the Santa Ana Region.

If an NPDES permit has not been issued and the Executive Officer does not provide written authorization for the initiation of the discharge under the terms and conditions of this Order, no discharge of treated groundwater to waters of the State within the Santa Ana Region is permitted.

VII. EXPIRATION DATE:

The proposed Order expires on January 1, 2007.

VIII. ANTIDegradation ANALYSIS:

The Regional Board has considered antidegradation pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16. Discharges in conformance with these waste discharge requirements will not adversely affect the beneficial uses of the affected receiving waters. In many cases, groundwater treatment systems are capable of reducing pollutant concentrations to below detectable values. Discharges from such systems would not result in the lowering of water quality. In some cases, treatment systems may reduce pollutant concentrations to levels that are detectable but are less than the permit limits specified in this Order. Discharges from such systems may result in the lowering of water quality in the receiving waters. However, any such lowering of water quality would not be significant. Moreover, it is to the maximum benefit of the people of the state to allow such lowering of water quality in order to facilitate groundwater cleanup activities and thereby restore and protect the beneficial uses of affected groundwaters. Neither the water quality of the receiving waters are expected to degrade as a result of discharges in compliance with these waste discharge requirements. Therefore, these waste discharge requirements are consistent with federal and state antidegradation policies.

IX. WRITTEN COMMENTS:

Interested persons are invited to submit written comments on the proposed discharge limits and the Fact Sheet. Comments should be submitted by January 23, 2002, either in person or by mail to:

Jun Martirez
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501-3348

X. INFORMATION AND COPYING:

Persons wishing further information may write to the above address or call Jun Martirez of the Regional Board at (909) 782-3258. Copies of the application, proposed waste discharge requirements, Fact Sheet, and other documents (other than those which the Executive Officer maintains as confidential) are available at the Regional Board office for inspection and copying between the hours of 9:00 a.m. and 3:00 p.m., Monday through Friday (excluding holidays).

XI. REGISTER OF INTERESTED PERSONS:

Any person interested in a particular application or group of applications may leave his name, address, and phone number as part of the file for an application.

XII. PUBLIC HEARING:

The Regional Board will hold a public hearing regarding the proposed waste discharge requirements as follows:

DATE: January 23, 2002
TIME: 9:00 a.m.
PLACE: City Council Chambers of Corona
815 W. Sixth Street
Corona, CA

California Regional Water Quality Control Board
Santa Ana Region

NOTICE OF INTENT

TO COMPLY WITH THE TERMS AND CONDITIONS OF THE GENERAL PERMIT TO DISCHARGE
TREATED GROUNDWATER POLLUTED BY PETROLEUM HYDROCARBONS, SOLVENTS AND/OR
PETROLEUM HYDROCARBONS MIXED WITH LEAD AND/OR SOLVENTS
(Order No. R8-2002-0007, NPDES No. CAG918001)

I. PERMITTEE (*Person/Agency Responsible for the Discharge*)

Agency/Company Name: _____

Address: _____

Street *City* *State* *ZIP*
Contact Person: _____ Phone: () _____

II. FACILITY

Name: _____

Location: _____

Street *City* *State* *ZIP*
Contact Person: _____ Phone: () _____

a. Projected Flow Rate (*gpd*): _____, b. Receiving Water (*identify*): _____

c. Hardness Value: _____ (*applicable only to those sites polluted with leaded gasoline*)

III. BILLING INFORMATION (*Where annual fee invoices should be sent*)

Agency/Company Name: _____

Address: _____

Street *City* *State* *ZIP*
Contact Person: _____ Phone: () _____

IV. INDICATE EXISTING PERMIT NUMBER: (*if applicable*)

a. Individual permit Order No. _____ NPDES No. _____

b. General Permit Order No. 96-18- _____

V. CERTIFICATION:

I certify under penalty of law that I am an authorized representative of the permittee and that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that the permittee will comply with the terms and conditions stipulated in Order No. R8-2002-0007 including the monitoring and reporting program issued by the Executive Officer of the Regional Board.

Name and Official Title: _____

(*type or print*)

Signature: _____ Date: _____

Remarks: *If changes to facility ownership and/or treatment processes were made after the issuance of the existing permit, please provide a description of such changes on another sheet and submit it with this Notice of Intent.*