

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN DIEGO REGION**

**FACT SHEET  
ORDER NO. R9-2003-0050  
NPDES NO. CA0109029**

**WASTE DISCHARGE REQUIREMENTS FOR GROUNDWATER EXTRACTION  
WASTE DISCHARGES TO SAN DIEGO BAY FROM THE SAN DIEGO  
CONVENTION CENTER, SAN DIEGO COUNTY**

**A. CONTACT INFORMATION**

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**B. FACILITY DESCRIPTION**

The San Diego Convention Center is located on an 11-acre site adjacent to San Diego Bay, west of the intersection of Harbor Drive and Fifth Avenue. The San Diego Unified Port District originally constructed and was responsible for the discharge of extracted groundwater from the San Diego Convention Center. In November 1999, the San Diego Unified Port District officially transferred responsibility to the City of San Diego for the discharge of groundwater to San Diego Bay from the San Diego Convention Center Groundwater Extraction and Treatment System.

The groundwater in the immediate vicinity of the Convention Center is hydraulically connected to San Diego Bay, exists at an elevation of approximately sea level, and is higher than the elevation of the Convention Center underground parking garage floor. A dewatering system is used to prevent groundwater from inundating the basement portions of the facility.

The dewatering system consists of a series of subsurface drains under the Convention Center floor slab and continuous perimeter wall drains outside of the basement walls. The subsurface drains and wall drains discharge by gravity to four sumps. Each sump is equipped with two pumps, each capable of developing a flow of 200 gallons per minute against a 35-foot head.

Currently the City of San Diego discharges the extracted groundwater from the San Diego Convention Center through an outfall to San Diego Bay. A 36-inch diameter submerged outfall pipe discharges collected groundwater to San Diego Bay at approximately 246 ft. (75 m) off the shore at a depth of approximately 35 feet. The outfall pipe diffuser section consists of nine horizontally discharging ports approximately 4 feet apart located on alternating sides of the diffuser. The City initiated the discharge to the ocean outfall on March 1, 2001. The discharge from the San Diego Convention Center is presently regulated under a general permit, Order No. 2000-90, NPDES Permit No. CAG919001.

Prior to the construction of the submerged outfall, water collected in Sump Nos. 3 and 4 was discharged to the Bay via a 63-inch diameter storm drain, which emptied into the San Diego Bay near the foot of Fifth Avenue. Water collected from Sump Nos. 1 and 2 was discharged to a 51-inch diameter storm drain, which emptied into San Diego Bay at the Marriott Marina located southeast of the Convention Center. The San Diego Convention Center is located approximately 156 ft. from the Marriott Hotel and Marina.

The San Diego Bay at the Marriott Marina is one of the water bodies proposed for the 303(d) watch list for dissolved copper. The Marriott Marina is currently one of the water bodies proposed for the watch list (for the 303(d) listing) for dissolved copper. Section 303(d) of the 1972 federal Clean Water Act (CWA, 33 USC 1250, *et seq.*, at 1313(d)), requires the identification of waters that do not meet water quality standards after applying certain required technology-based effluent limits.

### C. DISCHARGE DESCRIPTION

The City of San Diego is authorized to discharge a total flow of 0.67 million gallons per day (mgd) to San Diego Bay. However, records of flow measurements reported by the City of San Diego show discharge volumes occasionally exceed this number. Historically the flow rates from the San Diego Convention Center has ranged from 0.13 – 1.16 mgd. The City of San Diego has requested a maximum permitted flow rate of 1.0 mgd.

The dewatering system collects both local groundwater flowing toward the Bay and some Bay water which flows inland toward the dewatering system collection points. Because of the proximity of the Bay, infiltrating Bay waters contribute a greater volume of the water collected in Sump Nos. 1 and 2. It is estimated that approximately 73% of the overall dewatering flow collected in Sump Nos. 1 and 2 is derived from the Bay.

Due to their location, sump Nos. 3 and 4 primarily collect local groundwater flowing toward the Bay. It is estimated that approximately 28% of the flow collected in Sump Nos. 3 and 4 is from the Bay. The overall discharge from the Convention Center is considered a saline discharge.

## **Pollutants of Concern**

Water quality monitoring data collected from effluent sampling during 1993-1996 indicated that the discharge was not in compliance with water quality effluent limitations for silver, copper, and zinc as specified in Order Nos. 90-31 and 95-25. In response to this non-compliance, the Regional Board Executive Officer issued Notice of Violation (NOV) No. 97-06 on January 22, 1997. In response to NOV No. 97-06, the San Diego Unified Port District (SDUPD), owner of the Convention Center at the time, switched to the more appropriate methodology for analysis of metals (United States Environmental Protection Agency (USEPA) 1638/1640 clean technologies). In September 1999 and January 2000, samples of effluent were analyzed using the USEPA method 1638/1640, all of these samples were in compliance with the permit.

Since 1997, however, there have been numerous violations of the effluent limitations for chronic toxicity, arsenic, copper, nickel, and hexavalent chromium.

## **Metals**

In 1998, the USEPA approved Method 200.7 for the analysis of metals in water for non-saline (fresh) water samples. This method has been determined to be inappropriate for the analysis of metals in saline water samples. The dischargers' use of USEPA Method 200.7 resulted in exceedances of effluent limitations established in Order No. 2000-90. At the same time a new methodology (1638 and 1640), "clean technologies" was determined to be more suitable for saline (salt water) samples.

In July 1998, the USEPA approved the use of Method 1638 and 1640 by the San Diego Unified Port District (responsible for the discharge from the San Diego Convention Center at that time) for analysis of metals in saline samples.

In November 1999, the San Diego Unified Port District transferred responsibility of the site to the City of San Diego, whereupon the City of San Diego began using USEPA method 200.7.

The use of USEPA method 200.7 has resulted in exceedances of effluent limits established in Order No. 2000-90. In December 2001, the City of San Diego began using USEPA method 1638/1640 for the analysis of metals in their samples. Results of analysis from these samples demonstrate copper concentrations ranging from 12.6 – 24.8 µg/L, which exceed the effluent limit of 4.8 µg/L for copper established in Order No. 2000-90.

## **Toxicity**

To address the failing toxicity tests and the elevated levels of chlorinated hydrocarbon compounds, the City of San Diego installed carbon absorption units on sumps 1 & 2 on October 29, 2001. These units were consequently installed at sumps 3 & 4. These units are 5-foot tall, 45.5-inch diameter pressure carbon adsorption vessels, which hold approximately 1,000 pounds of granular reactivated carbon. These carbon units are plumbed into the flow stream of each of the four sumps' effluent. After installation of the carbon units in 2001, the discharge complied with the permitted toxicity requirements.

Since April 2001, the discharge from the Convention Center has episodically exceeded the effluent limitations established for chronic toxicity.

### **Petroleum Products**

As a result of past activities and conditions, including leaking underground storage tanks and fuel lines, surface spills, and past use of liquid waste impoundments, much of the groundwater in the downtown San Diego area are known to contain petroleum products and solvents.

## **D. RECEIVING WATER**

### **Beneficial Uses**

*The Water Quality Control Plan for the San Diego Basin (Basin Plan)* establishes the following beneficial uses for San Diego Bay, some or all of which may be impacted by the existing water quality in San Diego Bay:

- Navigation
- Body-Contact Recreation
- Non-Contact Recreation
- Commercial and Sport Fishing
- Marine Habitat
- Fish Spawning
- Shellfish Harvesting
- Estuarine and Wildlife Habitat
- Preservation of Habitats of Special Significance
- Preservation of Rare and Endangered Species
- Industrial Service Supply
- Aquaculture & migration of aquatic organisms

### **Water Quality Conditions**

San Diego Bay has been adversely impacted by current and historical industrial and other types of activities in and around the Bay. These activities include discharges from:

- In-water Hull Cleaning – U.S. Navy Vessels
- In-water Hull Cleaning – All Other Vessels including Pleasure/small commercial vessels, Cruise and passenger vessels, Cargo vessels, Barges, Tug boats, and Marine construction vessels
- Antifouling Hull Paints
- Shipyard operations
- and Boatyard operations

### **Metals**

Historical monitoring data demonstrates that San Diego Bay is adversely impacted by heavy metals, particularly copper. Regional Board staff has reviewed water quality data obtained from several sources, including: Convention Center monitoring reports, monitoring conducted by the City pursuant to the Implementation Policy, and other historical heavy metals analysis provided by the Navy and SPAWAR.

Metals and other toxic constituents occur in the waters of San Diego Bay as a result of the following:

1. The naturally occurring ambient concentrations in sea water,
2. Naturally occurring storm water runoff discharging to the San Diego Bay, which includes urban runoff from municipal storm drain systems (MS4 discharges).
3. Point source discharges within San Diego Bay,
4. Non point source discharges, and
5. Interaction of Bay waters with Bay bottom sediments.

The heavy metal of concern is copper. Ambient copper concentrations in the water column range from non-detect to 18.5 µg/L, in most areas of the Bay. These concentrations generally exceed the water quality criteria of 3.1 µg/L for San Diego Bay (California Toxics Rule (CTR)). Elevated dissolved metal levels threaten the beneficial uses of San Diego Bay, including wildlife and marine habitat uses.

Elevated concentrations of copper have been reported in Bay sediments in portions of San Diego Bay and near marinas, ship anchorage, cargo handling sites, and military installations. The annual copper load for San Diego Bay is estimated to be approximately 37,000 kg. Sources of copper include leaching from antifouling hull paints, stormwater runoff, the transfer of copper from Bay sediments to the water column, and other various point sources (including the Convention Center).

### **Toxic Hot Spots**

Section 13391.5 of the Water Code defines toxic hot spots as:

"...[L]ocations in enclosed bays, estuaries, or adjacent waters in the 'contiguous zone' or the 'ocean' as defined in Section 502 of the Clean Water Act (33 U.S.C. Section 1362), the pollution or contamination of which affects the interests of the State, and where hazardous substances have accumulated in the water or sediment to levels which (1) may pose a substantial present or potential hazard to aquatic life, wildlife, fisheries, or human health, or (2) may adversely affect the beneficial uses of the bay, estuary, or ocean waters as defined in the water quality control plans, or (3) exceeds adopted water quality or sediment quality objectives."

In 1989, The California State legislature established the Bay Protection and Toxic Cleanup Program (BPTCP). The Regional Toxic Hot Spot Cleanup Plan (Cleanup Plan) is intended to provide direction for the remediation or prevention of toxic hot spots in the San Diego Region (pursuant to Water Code Sections 13390 et seq.). Pursuant to Sections 13140 and 13143 of the Water Code, this Cleanup Plan is necessary to protect the quality of waters and sediments of the State from discharges of waste, in-place sediment pollution and contamination, and any other factor that can impact beneficial uses of enclosed bays, estuaries and coastal waters.

The SWRCB adopted the Consolidated Toxic Hot Spot Cleanup Plan (Consolidated Plan) on June 17, 1999, required under the Bay Protection and Toxic Cleanup Program (CWC Section 13395). The Consolidated Plan requires Regional Boards to reevaluate waste discharge requirements (WDR) for

those discharges associated with each known toxic hot spot that can reasonably be expected to cause or contribute to the creation and maintenance of the known toxic hot spot.

The Consolidated Plan listed five known toxic hot spots for degraded benthic communities and sediment toxicity in San Diego Bay. These locations are as follows: B Street and Broadway, mouth of Switzer Creek, Foot of Evans and Sampson Street, mouth of Chollas Creek, Seventh Street Channel/Paletta Creek (Naval Station). The San Diego Regional Board found that the regions' discharges from groundwater extraction activities may contribute to the pollution at the toxic hot spots listed in the Consolidated Plan. The hot spot at the mouth of Switzer Creek is approximately 3000 feet from the Convention Center discharge. In the event that future groundwater extraction waste discharges are proposed to an area of San Diego Bay that is designated as a toxic hot spot, staff will review both the Discharge Specifications and the Monitoring and Reporting Programs for appropriate modification(s).

The 1998 California 303(d) list and TMDL Priority Schedule lists the following areas in San Diego Bay for benthic community effects and sediment toxicity: near Sub Base, near Grape Street, at the Downtown Piers, near Coronado Bridge, near Chollas Creek, at San Diego Naval Station, at Seventh Street Channel, and north of 24<sup>th</sup> Street Marine terminal. The 1998 California 303(d) list also lists Shelter Island Yacht Basin as impaired due to copper.

#### **E. REPORT OF WASTE DISCHARGE**

The City of San Diego submitted a Report of Waste Discharge (ROWD) in May 2000 in application for an NPDES permit. The ROWD describes the submerged outfall, identifies general receiving water conditions within San Diego Bay, assesses the hydrodynamics of the discharge, and evaluates compliance of the discharge with applicable state and federal standards and water quality policies. The City requested a permitted flow rate of 1.0 mgd and consideration of dilution for their discharge as a means to help attain compliance with their effluent limitations.

The Order establishes a maximum permitted flow rate of 1.0 mgd. The effluent limitations contained in the Order were developed pursuant to the State Implementation Policy guidelines based on a maximum permitted flow of 1.0 mgd. These effluent limitations are protective of the water quality and the beneficial uses of San Diego Bay.

Regional Board staff has reviewed historical sampling and monitoring data and has determined that granting dilution credits for the discharge to San Diego Bay is inappropriate. Ambient concentrations of copper in the water column in most areas of the Bay already exceed the water quality criteria of 3.1 µg/L established by the California Toxics Rule. The granting of dilution credit in the Order would result in the establishment of effluent limitations significantly higher (less stringent) than the water quality criteria of 3.1 µg/L for copper. A less stringent limitation would allow for greater loading of copper to the Bay.

#### **F. PERMITTING HISTORY**

On April 23, 1990, this Regional Board adopted Order No. 90-31, National Pollutant Discharge Elimination System (NPDES) No. CA0108707, *General Waste Discharge Requirements for*

*Groundwater Dewatering Waste Discharges to San Diego Bay or Tributaries Thereto, San Diego County.*

On September 26, 1991, the State Water Resources Control Board (SWRCB) adopted Order No. WQ91-10 which amended Regional Board Order No. 90-31.

On April 23, 1993, the Regional Board enrolled the San Diego Unified Port District, San Diego Convention Center permanent groundwater extraction discharge under Order No. 90-31.

In May 1995, the Regional Board adopted Order No. 95-25 (NPDES CAG919001), which superseded Order No. 90-31. The Convention Center discharge continued enrollment under Order No. 95-25. In November 1999, the San Diego Unified Port District officially transferred responsibility to the City of San Diego for the discharge of groundwater to San Diego Bay from the San Diego Convention Center Groundwater Extraction and Treatment System.

In June 2000, San Diego Regional Water Quality Control Board adopted Order No. 2000-90 (CAG919001), *General Waste Discharge Requirements for Temporary Groundwater Extraction and Similar Waste Discharges to San Diego Bay and Storm Drains or Other Conveyance Systems Tributary Thereto.*

**G. BASIS FOR WASTE DISCHARGE REQUIREMENTS**

When a discharge causes, has the reasonable potential to cause, or contributes to a receiving water excursion above a narrative or numeric criteria within a State water quality standard, federal law and regulations require the establishment of Water Quality Based Effluent Limits (WQBELs) that will protect water quality.

**1. Federal, State, and Local Waste Discharge Requirements**

The discharge of extracted groundwater from the San Diego Convention Center threatens to cause or contribute to excursions above narrative water quality objectives as a result of the discharge of petroleum related compounds, metals, and organics. On May 26, 1989, the U.S. EPA enacted revisions to 40 CFR 122 (NPDES regulations). When a proposed discharge of a compound or chemical threatens to cause or contribute to an excursion above a State narrative water quality standard and a numeric water quality standard for the specific chemical has not been established, the NPDES revisions require<sup>1</sup> the Regional Board to:

- a. Establish an effluent limitation using a proposed State water quality objective or standard or an explicit State policy or regulation interpreting its narrative water quality objective which will protect and maintain water quality and designated beneficial uses of the receiving water;
- b. Establish effluent limitations on a case-by-case basis, using EPA's water quality criteria published under 307(a) of the Federal Clean Water Act; or

- c. Establish effluent limitations on an indicator parameter for the pollutants of concern (State Board memorandum dated November 3, 1989).

In addition to provisions that are standard to this Regional Board, 40 CFR 122.5, 122.21-22, 122.41, and 122.61-64 incorporate additional conditions that are to be applied to all NPDES permits, either expressly or by reference. This Order complies with the above stated requirements by establishing effluent limits using the above mentioned criteria.

The State of California Enclosed Bays and Estuaries Policy was established by the SWRCB in State Board Resolution No. 74-43, *Water Quality Control Policy for Enclosed Bays and Estuaries of California*. The Enclosed Bays and Estuaries Policy establishes a goal of phasing out all municipal wastewater discharges (excluding cooling water or other innocuous discharges) to bays and estuaries, and establishes a series of discharge prohibitions, including:

- a. Prohibiting new discharges of municipal wastewater and industrial process waters (exclusive of cooling waters, brine wastes, or other innocuous wastes),
- b. Municipal or industrial waste sludge, supernatant, centrate, or filtrate,
- c. Rubbish or refuse,
- d. Silt, sand, soil, clay, or other earthen materials that may impact the designated beneficial uses,
- e. Material of petroleum origin which may be visible or cause violation of discharge requirements, and
- f. Radiological, chemical, biological, or radioactive wastes.

In the adoption of waste discharge requirements and effluent limitations to protect the beneficial uses of waters of the State, the Porter-Cologne Water Quality Control Act, Sections 13000 et seq., authorizes the use of relevant water quality objectives or other criteria in the absence of numerical effluent concentration limitations in the Bays and Estuaries Policy. This Order prohibits the discharge of the above mentioned wastes.

Groundwater extraction waste discharges as limited by the permit will not conflict with the *Water Quality Control Policy for the Enclosed Bays and Estuaries of California* (Bays and Estuaries Policy) provided that discharges comply with Discharge Specification No. B.1 of the permit. However, groundwater extraction waste discharges could potentially conflict with the Bays and Estuaries Policy if petroleum related compounds or other pollutants are discharged to San Diego Bay. Discharge of petroleum related compounds and other pollutants are prohibited by this Order.

*The Water Quality Control Plan for the San Diego Basin* (Basin Plan) establishes beneficial uses for San Diego Bay and establishes policies and objectives for the protection of the designated beneficial uses.

The discharge shall not cause a violation of any applicable water quality standards for receiving waters adopted by the Regional Board or State Board. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Regional Board will revise and modify this Order in accordance with such standards.

Based upon review of monitoring information, the Convention Center groundwater extraction effluent does not contain any known measurable quantities of total or fecal coliform, *E. coli*, enterococcus, ammonia, or phosphorus. The discharge will be in compliance with the applicable Basin Plan numerical water quality objectives for these constituents. The monitoring record has also shown that the discharge will comply with the Basin Plan numerical objectives for pH and the narrative objective for grease and oil.

**2. 40 CFR 131.38 – California Toxics Rule (CTR) and Implementation Policy**

On May 18, 2000, the U.S. Environmental Protection Agency (USEPA) promulgated the final CTR, 40 CFR 131.38. The CTR restored California's water quality standards for inland surface waters. The previous inland surface waters plan, which contained water quality criteria for priority toxic pollutants, was dismissed in 1994 when a State court overturned the State Board's plan.

The City's application submittal on May 22, 2000 coincided with USEPA's final promulgation of the CTR on May 18, 2000. The CTR applies to discharges to enclosed bays. As such, the Convention Center discharge is subject to the requirements of the CTR. The City of San Diego has conducted monitoring in March – May 2002, pursuant to the requirements of the Implementation Policy.

The water quality criteria established in the CTR, 40 CFR 131.38, is legally applicable in the State of California for inland surface waters, and enclosed bays and estuaries for all purposes and programs under the Clean Water Act.

On March 2, 2000, the State Board, in *Resolution No. 2000-15*, adopted a *Policy for Implementation of Toxic Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (Implementation Policy). The Implementation Policy implements the criteria for the 126 priority pollutants in the CTR. The State Board's Implementation Policy was effective on April 28, 2000.

The Implementation Policy establishes:

- a. implementation provisions for priority pollutant criteria promulgated by the USEPA through the National Toxic Rule (NTR) and the CTR, and for priority pollutant objectives established in the Basin Plan;
- b. monitoring requirements for 2,3,7,8-TCDD (tetrachlorodibenzo-p-dioxin) equivalents; and

c. Chronic toxicity control provisions.

Pursuant to *Section 2.2.2.A* of the Implementation Policy, the Regional Board shall require the discharger to collect data to determine if effluent limits are necessary. In order to evaluate the reasonable potential for priority pollutants in the discharge, the WDR and Monitoring and Reporting Program (MRP) requires the discharger to analyze its discharge and the receiving waters for priority pollutants, and to submit the data to the Regional Board. The City of San Diego conducted monitoring on the 19<sup>th</sup>, 21<sup>st</sup>, 26<sup>th</sup>, and 28<sup>th</sup> of March 2002, pursuant to the requirements of the Implementation Policy.

Pursuant to *Section 1.4.4 Intake Water Credits* (p.17) of the Implementation Policy, a Regional Board may consider priority pollutants in the intake water on a pollutant-by-pollutant and discharge-by-discharge basis when establishing water quality-based effluent limitations.

The 2001 Ocean Plan requirements and tests for chronic toxicity are incorporated into this Order by reference and one or more of these tests shall be used to measure toxicity in the discharge. Monitoring for acute toxicity is not required because the chronic toxicity monitoring protocols are more sensitive than acute monitoring.

**Reasonable Potential Analysis**

Based on the approach suggested in the Implementation Policy and the effluent data obtained from the self monitoring reports, and monitoring conducted pursuant to the requirements of the Implementation Policy, some pollutants are determined to have reasonable potential of exceeding the water quality objective in San Diego Bay. These include Copper, Nickel, and TCDD Equivalents.

Attachment D tabulates the reasonable potential calculations for the pollutants that are regulated by this Order. Reasonable potential analysis was performed without any dilution. If the projected maximum receiving water concentration of a pollutant is greater than the corresponding water quality objective, then there is reasonable potential for that pollutant to cause or contribute to exceedance of the water quality objective.

There are some pollutants for which the commercially available analytical detection limits are above the existing limits. These include TCDD Equivalents. Reasonable potential for these pollutants cannot be reliably determined using the procedures described in the Implementation Policy. As the actual loads for these pollutants cannot be determined and these pollutants could possibly be present in the discharge from the site, reasonable potential is assumed to exist.

**3. Best Professional Judgment/Best Available Technology**

Hydrogen sulfide is a by-product of the decomposition of organic matter (particularly proteins) under anaerobic conditions, and is found in petroleum products. Groundwater extraction waste discharges in the Los Angeles area have contained high concentrations of hydrogen sulfide. Based on best professional judgement, groundwaters surrounding San Diego Bay may also

contain high concentrations of hydrogen sulfide. Order No. R9-2003-0050 contains an effluent limitation for hydrogen sulfide to protect the water quality of San Diego Bay.

Groundwater pollutant plumes are often complex mixtures of hundreds of petroleum related compounds (e.g. gasoline contains over 200 chemical compounds) which makes complete chemical analyses very expensive and sometimes impracticable or impossible due to sample matrix interferences, constituent masking, or the lack of standard analytical techniques. Since water quality criteria for many of the petroleum hydrocarbon compounds have not been proposed or established by the State or EPA, the permit will require monitoring groundwater discharged using "indicator constituents" for the detection and evaluation of complex mixtures of petroleum related compounds such as gasoline and solvents. The indicator constituents used for evaluating compliance with the narrative water quality criteria in the permit for discharges of gasoline related products are benzene, ethylbenzene, toluene, xylene, and total petroleum hydrocarbons, since it is believed that fuels have been adequately studied to justify limiting the analysis to these compounds.

In order to minimize potential impacts from groundwater extraction waste discharges on the beneficial uses of San Diego Bay, this Order requires the application of best available technology economically achievable (BAT)<sup>2</sup> for the removal of organic pollutants commonly found in petroleum polluted groundwaters. Discharges in compliance with BAT-based effluent limitations contained in Discharge Specification No. B.1. of this Order are not expected to have a measurable impact on the beneficial uses of San Diego Bay as a result of the discharge of petroleum related compounds since the effluent limitations for these compounds are equal to the practical quantitation level. Such compounds will essentially be non-detectable in discharges of groundwater extraction waste discharges to San Diego Bay.

This Order establishes effluent limitations and monitoring requirements for BTEX and TPH which will ensure that volatile petroleum related compounds will be removed from the waste stream. This Order also establishes effluent limitations and monitoring requirements for indicator constituents of diesel fuels (TPH-diesel)<sup>3</sup> commonly found in polluted groundwaters.

It has been demonstrated that volatile pollutants (e.g., benzene, toluene, ethylbenzene, xylene, etc.) and many other organic pollutants in groundwater can be reduced to less than current analytical detection limits (0.5 to 10 micrograms per liter ( $\mu\text{g/L}$ ) using available standard treatment technologies<sup>4</sup>. Section 402(a)(1) of the Clean Water Act authorizes the issuance of best available technology (BAT) effluent limitations in NPDES permits using best professional judgement (BPJ). Thus, BAT (best available technology economically achievable) for the removal of organic compounds is the basis for effluent limitations for BTEX and other volatile hydrocarbons, and base/neutral compounds (volatile hydrocarbons and base/neutral compounds are listed in 40 CFR 136) in Discharge Specification No. B.1 of this Order. Establishing an effluent limitation of 5  $\mu\text{g/L}$  for benzene ensures that other volatile organic compounds of concern will be equally limited as well since benzene is more water soluble and less volatile than the majority of the volatile compounds of concern and has a lower adsorption capacity for granular activated carbon. Therefore, benzene is usually the most difficult compound to remove from a waste stream - the remaining compounds of concern will be sufficiently removed if

benzene is removed from the waste stream, whether treatment consists of aeration, adsorption, or a combination of the two processes.

In establishing effluent limitations based on BAT, the Regional Board has taken into consideration the following factors:

- a. The appropriate technology for the category or class of which the discharger is a member;
- b. The age of equipment and facilities involved;
- c. The process employed;
- d. The engineering aspects of the application of various types of control techniques;
- e. Process changes;
- f. The cost of achieving such effluent reduction;
- g. Non-water quality environmental impact (including energy requirements); and
- h. Known and potential groundwater contaminants in the vicinity of groundwater extraction operation covered under this Order.

As a result of past activities and conditions, including leaking underground storage tanks and fuel lines, surface spills, and past use of liquid waste impoundments, much of the groundwater in the downtown San Diego area are known to contain petroleum products and solvents. Therefore, groundwater extraction discharges may pose the threat of releasing contaminants, which are present in groundwaters surrounding San Diego Bay. The Porter-Cologne Water Quality Control Act (January 1, 2000), Sections 13272.1 and Section 13285 address discharges of MTBE. This Order requires the discharger to monitor for MTBE on a monthly basis.

## **H. ANTIDegradation POLICIES**

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

1. Existing instream water uses and the level of water quality necessary to protect existing beneficial uses shall be maintained and protected;
2. Where the quality of the waters exceed levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, the quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water

quality is necessary to accommodate important economic or social development in the area in which the waters are located;

3. Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected; and
4. In those cases where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with Section 316 of the Clean Water Act.

The Regional Board, in establishing the requirements contained herein, has taken into consideration the requirements of the State and Federal "antidegradation" policies and has determined that:

1. The requirements, conditions, and Reporting Requirements Section E of the Order, and effluent limitations established in this Order for discharges of groundwater to receiving waters, ensure that the existing beneficial uses and quality of the proposed receiving waters be maintained and protected;
2. Allowing groundwater extraction waste discharges to receiving waters is often necessary to allow groundwater remediation and to accommodate economic development or infrastructure repair or replacement, it is also important to the people of the communities of the San Diego Region;
3. No receiving waters covered under the terms and conditions of this Order have been designated an outstanding national resource water by the SWRCB. However, Heisler Park Ecological Reserve, located in coastal waters near the City of Laguna Beach, the San Diego-La Jolla Ecological Reserve, and the San Diego Marine Life Refuge, located in coastal waters near La Jolla, a community of the City of San Diego, have been designated an Area of Special Biological Significance (ASBS) by the SWRCB. The Ocean Plan contains the following prohibition applicable to ASBS:  
  
"Waste shall not be discharged to areas designated as being of special biological significance. Discharges shall be located a sufficient distance from such designated areas to assure maintenance of natural water quality conditions in these areas."
4. Thermal discharges potentially impairing water quality are not authorized under the terms and conditions of this Order, thus, Section 316 of the Clean Water Act is not applicable.

Effluent limitations, and inland surface waters criteria, and enclosed bays and estuaries criteria established under Sections 301, 302, 303(d), 304, 306, and 402 of the Clean Water Act (CWA), as amended (33 U.S.C. 1251 et seq.), are applicable to discharges of groundwater extraction waste.

## **I. EXPIRATION DATE**

The expiration date of Order No. R9-2003-0050 is March 12, 2008.

**J. WRITTEN COMMENTS**

Interested persons are invited to submit written comments regarding the Order No. R9-2003-0050. Comments should be submitted either in person or by mail to:

Executive Officer  
California Regional Water Quality Control Board  
San Diego Region  
Attn: Industrial Compliance Unit  
9174 Sky Park Court, Suite 100  
San Diego, California 92123

It is requested that written comments be submitted by February 26, 2003. To ensure that the Regional Board has the opportunity to fully study and consider written material, comments should be received no later than 5:00 p.m. on March 5, 2003.

**K. PUBLIC HEARING**

Order No. R9-2003-0050 will be considered by the Regional Board on March 12, 2003 at a public hearing to be held at the San Diego Water Quality Control Board Regional Board Room, 9174 Sky Park Court, San Diego, California beginning at 9:00 a.m.

**L. REVIEW OF WASTE DISCHARGE REQUIREMENTS**

Copies of the waste discharge requirements and other documents (other than those that the Executive Officer maintains as confidential) are available at the Regional Board office for inspection and copying according to the following schedule (except holidays):

Monday and Thursday:	1:30 p.m. to 4:30 p.m.
Tuesday and Wednesday:	8:30 a.m. to 11:30 a.m. and 1:30 p.m. to 4:30 p.m.
Friday:	8:30 a.m. to 11:30 a.m.

**M. AVAILABILITY OF INFORMATION**

For additional information, interested persons may write to the address mentioned in Section I. of the Order or contact Sherrie Komeylyan of the Regional Board staff at (858) 467-2734 or by sending an email to [komec@rb9.swrcb.ca.gov](mailto:komec@rb9.swrcb.ca.gov).

## ENDNOTE REFERENCES:

1. 40 CFR 122.44(d)(I)(vii) requires that if indicator monitoring parameters are used, the following four provisions must be fulfilled:
  - a. The permit identifies which pollutants are intended to be controlled by use of the indicator effluent limitations,
  - b. The fact sheet sets forth the basis for each indicator chemical's effluent concentration limitation and includes a finding that compliance with the limit on the indicator constituent will result in controls on the pollutant(s) of concern which are sufficient to attain and maintain waste quality standards,
  - c. Effluent and receiving water quality monitoring to show the limit on the indicator parameter attains and maintains applicable water quality standards, and
  - d. The permit contains a re-opener clause.

Each of the preceding conditions for inclusion of indicator parameter monitoring has been addressed in this Order, the attached Monitoring and Reporting Program, or the Fact Sheet for the Order.

2. "Best available technology economically achievable" refers to the best treatment technologies available which have been determined to be cost effective, reliable, and efficient by the United States Environmental Protection Agency (U.S. EPA) or State Water Resources Control Board (SWRCB) or Regional Water Quality Control Board (RWQCB).
3. Diesel fuel consists primarily of straight-chain hydrocarbons (alkenes and alkanes) ranging in length from C10 to C23 with C16 and C17 predominating. The C10-C30 straight-chain hydrocarbons can be quantified in groundwater using standard analytical techniques (e.g., California Department of Health services; recommended analytical procedure for total petroleum hydrocarbons - diesel, (LUFT Manual: Guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure, October 1989), base/neutral organic analytical techniques contained in 40 CFR 136). Since the predominant components of diesel fuel are the straight-chain hydrocarbons, the total petroleum hydrocarbon - diesel standard testing method contained in the LUFT Manual is used as the indicator of diesel fuel contaminated groundwaters. Groundwater gasoline remediation projects may use standard TPH methods.
4. *Leaking Underground Fuel Tank Manual (LUFT): Guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure*, State of California, Leaking Underground Fuel Tank Task Force, established May 1988.