

STATE OF CALIFORNIA

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 W. 4th Street, Suite 200, Los Angeles

FACT SHEET
WASTE DISCHARGE REQUIREMENTS
for
UNION OIL COMPANY OF CALIFORNIA, DBA UNOCAL
(Former Unocal La Mirada Facility 0510)

NPDES Permit No.: CA0063975
Public Notice No.: 05-040

FACILITY ADDRESS
14445 Alondra Boulevard
La Mirada, CA 90638

FACILITY MAILING ADDRESS
276 Tank Farm Road
San Luis Obispo, CA 93406
Contact: Jim Dean
Telephone: (805) 784-0737

I. Public Participation

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the above-referenced facility. As an initial step in the WDR process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

A. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should be submitted either in person or by mail to:

Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Written comments regarding this tentative Order must be submitted to the Regional Board staff no later than 5 p.m. on July 7, 2005, in order to be evaluated by Board staff and included in the Board's agenda folder. The Regional Board chair may exclude from the record written materials received after this date. (See Cal. Code Regs., tit. 23, § 648.4.).

B. Public Hearing

The Regional Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: September 1, 2005
Time: 9:00 A.M.
Location: City of Agoura Hills
City Council Chambers
30001 Ladyface Court
Agoura Hills, California

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

Please be aware that dates and venues may change. Our web address is <http://www.waterboards.ca.gov/losangeles/> where you can access the current agenda for changes in dates and locations.

C. Waste Discharge Requirements Appeals

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board
P.O. Box 100, 1001 I Street
Sacramento, CA 95812

D. Information and Copying

The Report of Waste Discharge (ROWD), related documents, tentative effluent limitations and special conditions, comments received, and other information are on file and may be inspected at 320 West 4th Street, Suite 200, Los Angeles, California 90013, at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Los Angeles Regional Board by calling (213) 576-6600.

E. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Board, reference this facility, and provide a name, address, and phone number.

II. Introduction

Union Oil Company of California (hereinafter Unocal or Discharger), operates a soil remediation system at the La Mirada Site 0510 and discharges treated wastewater from a soil vapor incinerator scrubber system to a storm drain located at Heron Avenue and Alondra Boulevard. The wastewater is then conveyed to Coyote Creek, which merges with the San Gabriel River, a water of the United States. Wastes discharged from Unocal are regulated by WDRs and a NPDES permit contained in Board Order No. 99-138 (NPDES Permit No. CA0063975). Order No. 99-138 expired on November 10, 2004.

Unocal filed a Report of Waste Discharge and applied for renewal of its WDRs and a NPDES permit on June 14, 2004. The tentative Order is the reissuance of the WDRs and a NPDES permit for discharges from Unocal. The Regional Board requested additional information on February 28, 2005, and the Discharger submitted the additional information on March 9, 2005. A compliance evaluation inspection (CEI) was conducted on September 1, 2004, to observe operations and collect additional data to develop permit limitations and conditions.

III. Description of Facility and Waste Discharge

Unocal formerly owned and operated a chemical distribution and polymer production facility located at 14445 Alondra Boulevard, La Mirada, California. The current property owner is Rohm and Haas Company, and operates the polymer production facility.

Soil and groundwater contamination was discovered on-site. On September 18, 1995, the Regional Board issued WDRs (Order No. 95-129) to Unocal for the remediation of solvent-contaminated soils associated with the removal of underground solvent tanks. The contamination was reported to be primarily due to volatile organic compounds (VOCs), semi-volatile organic compounds, and total petroleum hydrocarbons (TPH). Unocal is currently implementing a soil cleanup program by utilizing a soil vapor extraction/incineration system. Soil vapor extraction treatment involves the use of vacuum blowers and extraction wells to strip VOCs from the soil. Following extraction, gas vapors flow through a scrubber system to remove particulates and additional gases. City-supplied water is the source water for the soil vapor extraction incinerator scrubber system. The scrubber wastewater is treated with an activated carbon filter prior to discharge.

Unocal discharges up to 7,200 gallons per day (gpd) of treated scrubber wastewater through Discharge Serial No. 001. The facility reported an average discharge of 5,572 gpd during the permit term (First Quarter 2000 through the Fourth Quarter 2003). During the CEI on September 1, 2004, the facility representative stated that there was no discharge during the monitoring periods in 2004. In addition, the ROWD indicated that the remediation system has not been operating since December 2003. However, the remediation system operations will be resumed in the future.

The treated scrubber wastewater produced from the soil vapor incineration system is discharged through Discharge Serial No. 001 (Latitude 33° 53' 27" and Longitude 118°01' 26"), into a storm drain, thence to Coyote Creek which is tributary to the San Gabriel River, a water of the United States, at a location above the San Gabriel River Estuary.

The Regional Board and the U.S. Environmental Protection Agency (U.S. EPA) have classified the Unocal facility's discharge as a minor discharge.

The Discharger provided monitoring data, previously submitted with the 1st Quarter discharge monitoring report (February 10, 2003), with the NPDES permit renewal application. These data are included in the summary Table below. Effluent data submitted as part of discharge monitoring reports to the Regional Board for the dates between November 1999 and June 2004 (1st Quarter 2004 was not available for review) are summarized in the following Table (unregulated pollutants that were not detected in the effluent are not included):

Pollutant	Units	Daily Maximum Effluent Limitations	Average Monthly Effluent Limitations	Range of Reported Values
Total Flow ¹	Gallons	--	--	2,037 – 98,183
Flow Rate	Gpd	7,200 ²	--	679 – 7,924
Temperature	°F	100	--	76 - 112
PH	s.u.	6.0 - 9.0		6.36 – 8.23
Turbidity	NTU	150	50	0.1 – 3.8
Biochemical Oxygen Demand (BOD) ³	mg/L	30	20	1.0 – 4.1
	lbs/day	1.8	1.2	0.0143 – 0.202
Oil and Grease	mg/L	15	10	2.1 ⁴
	lbs/day	0.79	0.6	0.104 ⁴
Total Suspended Solids (TSS)	mg/L	150	50	0.5 – 5.0
	lbs/day	7.92	3	0.012 - 0.293
Settleable Solids	ml/L	0.3	0.1	<0.1 - <0.2
Total Sulfides	mg/L	1	--	<0.05 - <0.1
Total Petroleum Hydrocarbons (TPH) ⁵	mg/L	0.1	--	9.5 - 32
Benzene	µg/L	1	--	1.1 ⁴
Bromoform	µg/L	100	--	0.23 – 5.7
Carbon tetrachloride	µg/L	0.5	--	<0.057 - <0.5
Chlorobenzene	µg/L	30	--	<0.048 - <1
Chlorodibromomethane	µg/L	100	--	0.51 - 13
Chloroethane	µg/L	100	--	<0.061 - <1
Chloroform	µg/L	100	--	0.46 – 8.8
Dichlorobromomethane	µg/L	100	--	0.94 - 11
1,1-dichloroethane	µg/L	5	--	<0.061 - <1
1,2-dichloroethane	µg/L	0.5	--	<0.081 - <0.5
1,1-dichloroethene	µg/L	6	--	<0.054 - <1
1,2-dichloropropane	µg/L	5	--	<0.03 - <1
1,3-dichloropropylene	µg/L	0.5	--	<0.092 - <0.5
Ethylbenzene	µg/L	700	--	<0.03 - <1

Pollutant	Units	Daily Maximum Effluent Limitations	Average Monthly Effluent Limitations	Range of Reported Values
Ethylene dibromide	µg/L	0.05	--	<0.05 - <0.5
Methyl bromide	µg/L	10	--	<0.068 - <1
Methyl chloride	µg/L	3	--	<0.057 - <1
1,1,2,2-tetrachloroethane	µg/L	1.0	--	<0.07 - <1
Tetrachloroethylene	µg/L	5	--	1.3 ⁴
Toluene	µg/L	150	--	0.09 – 0.12
1,2-trans-dichloroethylene	µg/L	10	--	<0.082 - <1
1,1,1-trichloroethane	µg/L	200	--	<0.072 - <1
1,1,2-trichloroethane	µg/L	5	--	<0.076 - <1
Trichloroethylene	µg/L	5	--	<0.092 - <1
Vinyl chloride	µg/L	0.5	--	<0.092 - <0.5
Xylene	µg/L	1,750	--	<0.14 - <2
Methyl ethyl ketone	µg/L	700	--	<1 - <20
Methyl tertiary butyl ether	µg/L	13	--	<0.054 - <10
Acute toxicity	% survival	⁶	--	100
Cis-1,2-dichloroethene	µg/L	--	--	0.13 ⁴
Arsenic	µg/L	--	--	1.7 - 7
Chromium, hexavalent	µg/L	--	--	<10 - 61
Copper	µg/L	--	--	<10 – 16.6 ⁴
Lead	µg/L	--	--	<2 – 3.8
Nickel	µg/L	--	--	<1 - 120
Selenium	µg/L	--	--	<10 – 0.81 ⁴
Thallium	µg/L	--	--	<1 - 0.24 ⁴
Zinc	µg/L	--	--	<50 - 33.1 ⁴

- 1 Denotes total flow per quarter.
- 2 The existing Order established 7,200 gpd as the maximum flow to determine mass-based effluent limitations.
- 3 5-day biochemical oxygen demand at 20°C.
- 4 Only reported detection.
- 5 As gasoline.
- 6 Acute toxicity shall be such that the average survival in the undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90 percent, with no single test less than 70 percent survival.

Data submitted indicate that the discharger violated the temperature limitation (100 degrees Fahrenheit) on three different occasions: April 29, 2003 (112 degrees); May 6, 2003 (109 degrees); and, December 29, 2003 (101 degrees). Monitoring data collected on January 16, 2001 indicated a value of benzene of 1.1 µg/L that exceeded the effluent limitation of 1.0 µg/L. No other effluent limitation violations were documented during the permit term. Further, effluent temperature values during the 4th Quarter 1999 and 1st Quarter 2000 were reported as 88 degrees Fahrenheit.

IV. Applicable Plans, Policies, and Regulations

The requirements contained in the proposed Order are based on the requirements and authorities contained in the following:

1. The federal Clean Water Act (CWA). The federal Clean Water Act requires that any point source discharges of pollutants to a water of the United States must be in conformance with an NPDES permit. NPDES permits establish effluent limitations that incorporate various requirements of the CWA designed to protect water quality.
2. Code of Regulations, Title 40 (40 CFR) – Protection of Environment, Chapter I, Environmental Protection Agency, Subchapter D, Water Programs, Parts 122-125 and Subchapter N, Effluent Guidelines. These CWA regulations provide effluent limitations for certain dischargers and establish procedures for NPDES permitting, including how to establish effluent limitations for certain pollutants discharged by Unocal.
3. On June 13, 1994, the Regional Board adopted a revised *Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan). The Basin Plan contains water quality objectives and beneficial uses for inland surface waters and for the Pacific Ocean. The Basin Plan contains beneficial uses and water quality objectives for Coyote Creek (Hydrologic Unit 405.15).

Existing Uses: preservation of rare and endangered species.

Potential Uses: municipal and domestic supply, industrial service supply, industrial processing supply, water contact recreation¹, warm freshwater habitat, wildlife habitat.

Intermittent Uses: non-contact water recreation.

¹ Access only prohibited by Los Angeles County Department of Public Works in concrete-channelized areas.

4. **Ammonia Basin Plan Amendment.** The 1994 Basin Plan provided water quality objectives for ammonia to protect aquatic life, in Tables 3-1 through Tables 3-4. However, those ammonia objectives were revised on April 25, 2002, by the Regional Board with the adoption of Resolution No. 2002-011, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters (Including Enclosed Bays, Estuaries and Wetlands) with Beneficial Use Designations for Protection of Aquatic Life*. The ammonia Basin Plan amendment was approved by the State Board, the Office of Administrative Law, and United States Environmental Protection Agency (U.S. EPA) on April 30, 2003, June 5, 2003, and June 19, 2003, respectively. Although the revised ammonia water quality objectives may be less stringent than those contained in the 1994

Basin Plan, they are still protective of aquatic life and are consistent with U.S. EPA's 1999 ammonia criteria update.

5. The State Water Resources Control Board (State Board) adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters.
6. The objective of the proposed Order is to protect the beneficial uses of receiving waters. To meet this objective, the proposed Order requires Unocal to develop a Storm Water Pollution Prevention Plan (SWPPP) consistent with the SWPPP requirements in the NPDES General Permit for Storm Water Discharges Associated with Industrial Activity [State Water Resources Control Board (State Board) Order No. 97-03-DWQ, NPDES Permit No. CAS000001]. The SWPPP will outline site-specific management practices for minimizing storm water runoff contamination and for preventing contaminated storm water runoff from being discharged into surface waters. The proposed Order includes the relevant requirements contained in the attached *Storm Water Pollution Prevention Plan Requirements* (Attachment A).
7. On May 18, 2000, the U.S. EPA promulgated numeric criteria for priority pollutants for the State of California [known as the *California Toxics Rule* (CTR) and codified as 40 CFR § 131.38]. In the CTR, U.S. EPA promulgated criteria that protect the general population at an incremental cancer risk level of one in a million (10^{-6}), for all priority toxic pollutants regulated as carcinogens. The CTR criteria for freshwater or human health for consumption of organisms, whichever is more stringent, are used to develop the effluent limitations in this Order to protect the beneficial uses of the Coyote Creek. The CTR also allows a schedule of compliance not to exceed five years from the date of permit issuance for a point source discharge if the Discharger demonstrates that it is infeasible to promptly comply with the CTR criteria. CTR's Compliance Schedule provisions sunset on May 18, 2005. After this date, the provisions of the SIP allow for Compliance Schedules not to exceed five years from issuance or past May 17, 2010, whichever is sooner.
8. On March 2, 2000, State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP was effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through National Toxics Rule (NTR) and to the priority pollutant objectives established by the Regional Boards in their Basin Plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by the U.S. EPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP was effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The SIP requires the dischargers' submittal of data sufficient to conduct the determination of priority pollutants requiring water quality-based effluent limitations (WQBELs) and to calculate the effluent limitations.

On February 9, 2005, the State Board revised the SIP, and the Office of Administrative Law approved the SIP amendments on May 31, 2005. The SIP amendments will be in effect upon the approval of the U.S. EPA.

9. 40 CFR section 122.44(d)(vi)(A) requires the establishment of numeric effluent limitations to attain and maintain applicable narrative water quality criteria to protect the designated beneficial uses. Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR section 122.44(d) specifies that water quality-based effluent limitations (WQBELs) may be set based on U.S. EPA criteria and supplemented, where necessary, by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.
10. State and Federal antibacksliding and antidegradation policies require that Regional Board take actions to protect the water quality of a water body to ensure that the waterbody will not be further degraded. The antibacksliding provisions are specified in sections 402(o) and 303(d)(4) of the CWA and in the 40 CFR section 122.44(l). Those provisions require a reissued permit to be as stringent as the existing Order with some exceptions where effluent limitations may be relaxed.
11. Effluent limitations are established in accordance with sections 301, 304, 306, and 307 of the federal CWA, and amendments thereto. These requirements, as they are met, will maintain and protect the beneficial uses of the Coyote Creek.
12. On March 30, 2000, U.S. EPA revised its regulation that specifies when new and revised State and Tribal water quality standards (WQS) become effective for Clean Water Act (CWA) purposes (40 CFR 131.21, 65 FR 24641, April 27, 2000). Under U.S. EPA's new regulation (also known as the Alaska rule), new and revised standards submitted to U.S. EPA after May 30, 2000, must be approved before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to U.S. EPA by May 30, 2000, may be used for CWA purposes, whether or not approved by EPA.
13. Existing waste discharge requirements contained in Board Order No. 99-138, adopted by the Regional Board on December 9, 1999. In some cases, permit conditions (effluent limitations and other special conditions) established in the existing waste discharge requirements have been carried over to this permit.

V. Regulatory Basis for Effluent Limitations

The CWA requires point source discharges to control the amount of conventional, nonconventional, and toxic pollutants that are discharged into the waters of the United States. The control requirements for the discharge of pollutants is established through NPDES permits that contain effluent limitations and standards. The CWA establishes two principal bases for effluent limitations. First, dischargers are required to meet technology-based effluent limitations

that reflect the best controls available considering costs and economic impact. Second, they are required to meet water quality-based effluent limitations (WQBELs) that are developed to protect applicable designated uses of the receiving water.

The CWA requires that technology-based effluent limitations be established based on several levels of control:

1. Best practicable treatment control technology (BPT) is based on the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and nonconventional pollutants.
2. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and nonconventional pollutants.
3. Best conventional pollutant control technology (BCT) is a standard for the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering the "cost reasonableness" of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.
4. New source performance standards (NSPS) that represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires EPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BCT, BAT, and NSPS. Section 402(a)(1) of the CWA and 40 CFR section 125.3 of the NPDES regulations authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern or do not consider certain pollutants.

If a reasonable potential to exceed water quality standards exists for pollutants in a discharge, WQBELs are also required under 40 CFR section 122.44(d)(1)(i). WQBELs are established after determining that technology-based limitations are not stringent enough to ensure that state water quality standards are met for the receiving water. WQBELs are based on the designated use of the receiving water, water quality criteria necessary to support the designated uses, and the state's antidegradation policy. For discharges from this facility to inland surface waters, enclosed bays, and estuaries, the SIP establishes specific implementation procedures for determining reasonable potential and establishing WQBELs for priority pollutant criteria promulgated by U.S. EPA through the CTR and NTR, as well as priority pollutant objectives in the Basin Plan.

There are several other specific factors affecting the development of limitations and requirements in the proposed Order. These are discussed as follows:

1. **Pollutants of Concern**

The CWA requires that any pollutant that may be discharged by a point source in quantities of concern must be regulated through an NPDES permit. Further, the NPDES regulations require regulation of any pollutant that (1) causes; (2) has the reasonable potential to cause; or (3) contributes to the exceedance of a receiving water quality criterion or objective.

Unocal uses soil vapor extraction technology for VOC-contaminated soils at the site. City-supplied water is the source water for the soil vapor extraction incinerator scrubber system and the discharge consists of scrubber wastewater. Pollutants expected in the discharge may include solids, VOCs, semi-volatile organic compounds, and petroleum hydrocarbons. The existing Order established effluent limitations for pollutants believed to be present in the discharge of incinerator scrubber wastewater. The existing regulated pollutants are still considered pollutants of concern in this Order.

Solids may be present in the effluent because they are naturally occurring in soils, and may become concentrated in the scrubbing process; therefore, total suspended solids, settleable solids, and turbidity are considered pollutants of concern in this discharge. Oil and grease and BOD are pollutants typically used to characterize industrial wastewater discharges. Further, oil and grease may be present if the scrubber water contacts joints or fittings in the system where oil and grease may be used. The underground solvent tanks that previously existed at the site and used as part of the polymer production processes contained VOCs, semi-volatile organic compounds and TPH. In addition, these pollutants are considered pollutants of concern because the soil was contaminated by historical release of solvents from underground storage tanks. Effluent limitations for Discharge Serial No. 001 in the existing Order were established for total suspended solids, turbidity, BOD, oil and grease, settleable solids, TPH, benzene, bromoform, carbon tetrachloride, chlorobenzene, chlorodibromomethane, chloroethane, chloroform, dichlorobromomethane, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,2-dichloropropane, 1,3-dichloropropylene, ethylbenzene, ethylene dibromide, methyl bromide, methyl chloride, 1,1,2,2-tetrachloroethane, tetrachloroethylene, toluene, 1,2-trans-dichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, vinyl chloride, xylene, methyl ethyl ketone, and methyl tertiary butyl ether. These pollutants may still be present in the incinerator scrubber water and are therefore considered pollutants of concern. Sulfides may be present in the discharge as a result of decomposition of organic materials; therefore, continues to be a pollutant of concern.

The Basin Plan contains water quality objectives for pH and temperature. Further, treated scrubber wastewater has the potential to affect the pH and temperature of the receiving water body; therefore, effluent limitations for pH and temperature are established in this permit.

2. **Technology-Based Effluent Limitations**

There are currently no national ELGs for soil vapor extraction incinerator scrubber system wastewater. The existing Order established limitations for certain pollutants because of the nature of operations at the site (i.e., remediation of solvent-contaminated soils associated with the removal of underground solvent tanks). The effluent limitations established in the previous Order represent the BAT for this facility; and they are carried over in the proposed Order.

3. **Water Quality-Based Effluent Limitations**

As specified in 40 CFR section 122.44(d)(1)(i), permits are required to include WQBELs for toxic pollutants (including toxicity) that are or may be discharged at levels which cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses for the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria (that are contained in other state plans and policies, or U.S. EPA water quality criteria contained in the CTR and NTR). The specific procedures for determining reasonable potential and, if necessary, for calculating WQBELs are contained in the SIP.

The CTR contains both saltwater and freshwater criteria. According to 40 CFR section 131.38(c)(3), freshwater criteria apply at salinities of 1 part per thousand (ppt) and below at locations where this condition occurs 95 percent or more of the time; saltwater criteria apply at salinities of 10 ppt and above at locations where this occurs 95 percent or more of the time; and at salinities between 1 and 10 ppt the more stringent of the two apply. The CTR criteria for freshwater or human health for consumption of organisms, whichever is most stringent, are used to prescribe the effluent limitations in this Order to protect the beneficial uses of the Coyote Creek.

Some water quality criteria are hardness dependent. The Discharger did not provide hardness data for the receiving water (Coyote Creek) nor for the effluent. Further, there are no hardness data available which are representative of the discharge location; therefore, the default hardness value of 100 mg/L as CaCO₃ was assumed for evaluation of reasonable potential.

(a) Reasonable Potential Analysis (RPA)

The Regional Board conducts a reasonable potential analysis for each priority pollutant with an applicable criterion or objective to determine if a WQBEL is required in the permit. The Regional Board analyzed effluent data to determine if a pollutant in a discharge has a reasonable potential to cause or contribute to an excursion above a state water quality standard. For all pollutants that have a reasonable potential, numeric WQBELs are required. The RPA considers water quality objectives outlined in the CTR, NTR, as well as the Basin Plan. To conduct the RPA, the Regional Board has identify the maximum

observed effluent concentration (MEC) for each pollutant, based on data provided by the Discharger.

Section 1.3 of the SIP provides the procedures for determining reasonable potential to exceed applicable water quality criteria and objectives. The SIP specifies three triggers to complete a RPA and determine that a WQBEL is needed:

- 1) Trigger 1 – If the MEC is greater than or equal to the CTR water quality criteria or applicable objective (C), a limitation is needed.
- 2) Trigger 2 – If $MEC < C$ and background water quality (B) $> C$, a limitation is needed.
- 3) Trigger 3 – If other related information such as CWA 303(d) listing for a pollutant, discharge type, compliance history, etc. indicates that a WQBEL is required.

Sufficient effluent and ambient data are needed to conduct a complete RPA. If data are not sufficient, the Discharger is required to gather the appropriate data for the Regional Board to conduct the RPA. Upon review of the data, and if the Regional Board determines that WQBELs are needed to protect the beneficial uses, the permit is reopened for appropriate modification.

The RPA was performed for the priority pollutants for which effluent data were available from sampling collected as required by the existing permit. These data are summarized in Attachment D.

Based on the RPA, there is reasonable potential to exceed water quality criteria at Discharge Serial No. 001 for hexavalent chromium, copper, lead, and nickel.

It should be noted that sampling events for many priority pollutants utilized method detection limits that were higher than the applicable water quality criteria. Therefore, the potential to exceed these criteria is unclear.

The effluent limitations for chlorobenzene, chloroethane, 1,1-dichloroethane, 1,3-dichloropropylene, ethylbenzene, methyl bromide, 1,2-trans-dichloroethane, trichloroethylene, benzene, bromoform, carbon tetrachloride, chlorodibromomethane, chloroform, dichlorobromomethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,2-dichloropropane, ethylene dibromide, methyl chloride, 1,1,2,2-tetrachloroethane, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, and vinyl chloride in the existing Order are carried over to the proposed Order as they are toxic pollutants and are expected to be present in the discharge from the facility. Because of the nature of operations at the site (i.e., remediation of solvent-contaminated soils associated with the removal of underground solvent tanks), these pollutants have reasonable potential to cause or contribute to exceed water quality standards.

(b) Calculating WQBELs

If a reasonable potential exists to exceed applicable water quality criteria or objectives, then a WQBEL must be established in accordance with one of three procedures contained in Section 1.4 of the SIP. These procedures include:

- 1) If applicable and available, use of the wasteload allocation (WLA) established as part of a total maximum daily load (TMDL).
- 2) Use of a steady-state model to derive maximum daily effluent limitations (MDELs) and average monthly effluent limitations (AMELs).
- 3) Where sufficient effluent and receiving water data exist, use of a dynamic model which has been approved by the Regional Board.

(c) Impaired Water Bodies on 303 (d) List

Section 303(d) of the CWA requires states to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources. For all 303(d)-listed water bodies and pollutants, the Regional Board plans to develop and adopt TMDLs that will specify WLAs for point sources and load allocations (LAs) for non-point sources, as appropriate.

The U.S. EPA approved the State's 2002 303(d) list of impaired water bodies on July 25, 2003. Certain receiving waters in the Los Angeles and Ventura County watersheds do not fully support beneficial uses and therefore have been classified as impaired on the 2002 303(d) list and have been scheduled for TMDL development.

The 2002 State Board's California 303(d) List classifies the Coyote Creek as impaired. The pollutants of concern, detected in the water column, in the sediment, and in the fish tissue, include: copper, lead, selenium, zinc, coliform and toxicity. No TMDLs for Coyote Creek have been completed. Thus, no conditions in the proposed Order are based on TMDLs.

(d) Whole Effluent Toxicity

Whole Effluent Toxicity (WET) requirements protect the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative "no toxics in toxic amounts" criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over short time period and measures mortality. A chronic toxicity test is conducted over a longer period of time and measures mortality, reproduction, and growth.

The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota. The existing permit contains acute toxicity limitations and monitoring requirements. Acute toxicity test results from four different tests were submitted by the facility to the Regional Board during the previous permit term. Each test resulted in 100 percent survival.

In accordance with the Basin Plan, acute toxicity limitations dictate that the average survival in undiluted effluent for any three consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test having less than 70% survival. Consistent with Basin Plan requirements, this Order continues to include acute toxicity limitations.

In addition to the Basin Plan requirements, Section 4 of the SIP states that a chronic toxicity effluent limitation is required in permits for all discharges that will cause, have the reasonable potential to cause, or contribute to chronic toxicity in receiving waters.

The discharges of incinerator scrubber wastewater from the Unocal facility occur continuously when the treatment system is operating, and, due to the types of pollutants present in the soil treated at the site, could contribute to long-term toxic effects. However, no chronic toxicity data are available for the discharge. Therefore, the Discharger will be required to conduct chronic toxicity testing in order to determine reasonable potential and establish WQBELs as necessary. In addition, the Order includes a chronic testing trigger defined as the monthly median exceeding 1.0 toxic units chronic (TU_c) in a critical life stage test for 100% effluent. If the chronic toxicity of the effluent exceeds 1.0 TU_c, the Discharger will be required to immediately implement accelerated chronic toxicity testing according to Monitoring and Reporting Program, Item IV.D.1. If the results of two of the six accelerated tests exceed 1.0 TU_c, the Discharger shall initiate a toxicity identification evaluation (TIE).

4. Specific Rationale for Each Numerical Effluent Limitation

The Regional Board has determined that reasonable potential exists for all pollutants that are regulated under the current Order; therefore, effluent limitations have been established for these pollutants. Furthermore, the requirements in the proposed Order for certain conventional and non-conventional pollutants (i.e., total suspended solids, BOD, oil and grease, turbidity, settleable solids, sulfides, TPH, and xylene) are based on limitations specified in Unocal's existing permit and other similar permits issued by the Regional Board. The effluent limitations for pH and temperature have been revised based on the Basin Plan and the Thermal Plan, respectively.

Section 402(o) of the Clean Water Act and 40 CFR section 122.44(l) require that effluent limitations standards or conditions in re-issued permits are at least as stringent as in the

existing permit. Therefore, existing effluent limitations for many of the regulated pollutants are carried over to this permit. In addition to these limitations, the Regional Board is implementing the CTR and SIP, and additional effluent limitations are required for those regulated priority pollutants that show reasonable potential to exceed water quality standards. For those that do show reasonable potential and for which existing effluent limitations exist, a comparison between existing permit limitations and CTR-based WQBELs was made and the most stringent limitation included in the Order. New CTR-based WQBELs are established for hexavalent chromium, copper, lead, and nickel because these pollutants show reasonable potential to exceed state water quality standards and were not regulated in the existing Order.

The effluent limitations for chlorobenzene, chloroethane, 1,1-dichloroethane, 1,3-dichloropropylene, ethylbenzene, methyl bromide, 1,2-trans-dichloroethane, trichloroethylene, benzene, bromoform, carbon tetrachloride, chlorodibromomethane, chloroform, dichlorobromomethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,2-dichloropropane, ethylene dibromide, methyl chloride, 1,1,2,2-tetrachloroethane, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, and vinyl chloride included in the existing Order have been carried over as well. Monitoring data for the existing permit term did not demonstrate reasonable potential for these pollutants. However, because of the nature of operations at the site (i.e., remediation of solvent-contaminated soils associated with the removal of underground solvent tanks), these pollutants have reasonable potential to cause or contribute to exceed water quality standards. Therefore, the existing effluent limitations were carried over in the proposed Order.

The following Table presents the effluent limitations and specific rationales for pollutants that are expected to be present in the discharge:

Pollutant	Units	Average Monthly Effluent Limitation ¹	Maximum Daily Effluent Limitation	Rationale ²
Temperature	°F	86 ³		TP
PH	Standard units	6.5 – 8.5 ³		BP
Total Suspended Solids	Mg/L	50	75	E, BPJ
Turbidity	NTU	50	75	E, BPJ
BOD ¹	Mg/L	20	30	E
Oil and Grease	Mg/L	10	15	E
Settleable Solids	MI/L	0.1	0.3	E
Sulfides	Mg/L	---	1	E
Phenols	Mg/L	---	1.0	BPJ
Total Petroleum Hydrocarbons (as Gasoline)	µg/L	---	100	E
Benzene	µg/L	---	1	E
Bromoform	µg/L	---	100	E
Carbon tetrachloride	µg/L	---	0.5	E

Pollutant	Units	Average Monthly Effluent Limitation ¹	Maximum Daily Effluent Limitation	Rationale ²
Chlorobenzene	µg/L	---	30	E
Chlorodibromomethane	µg/L	---	100	E
Chloroethane	µg/L	---	100	E
Chloroform	µg/L	---	100	E
Dichlorobromomethane	µg/L	---	100	E
1,1-dichloroethane	µg/L	---	5	E
1,2-dichloroethane	µg/L	---	0.5	E
1,1-dichloroethylene	µg/L	---	6	E
1,2-dichloropropane	µg/L	---	5	E
1,3-dichloropropylene	µg/L	---	0.5	E
Ethylbenzene	µg/L	---	700	E
Ethylene dibromide	µg/L	---	0.05	E
Methyl bromide	µg/L	---	10	E
Methyl chloride	µg/L	---	3	E
1,1,2,2-tetrachloroethane	µg/L	---	1	E
Tetrachloroethylene	µg/L	---	5	E
Toluene	µg/L	---	150	E
1,2-trans-dichloroethylene	µg/L	---	10	E
1,1,1-trichloroethane	µg/L	---	200	E
1,1,2-trichloroethane	µg/L	---	5	E
Trichloroethylene	µg/L	---	5	E
Vinyl chloride	µg/L	---	0.5	E
Xylenes	µg/L	---	1,750	E
Methyl ethyl ketone	µg/L	---	700	E
Methyl tertiary butyl ether	µg/L	---	5	MCL
Tertiary butyl alcohol (TBA)	µg/L	---	12	MCL
Hexavalent chromium ⁴	µg/L	8.12	16.29	CTR, SIP
Copper ⁴	µg/L	6.98	14	CTR, SIP
Lead ⁴	µg/L	2.61	5.23	CTR, SIP
Nickel ⁴	µg/L	42.71	85.69	CTR, SIP
Acute Toxicity	% survival	⁵		E, BP
Chronic	TU _c	⁶		BP

¹ The monthly average concentration shall be the arithmetic average of all the values of daily concentrations calculated using the results of analyses of all samples collected during the month. If only one sample is taken within that month, compliance shall be based on this sample result.

² BP – Limitations are established in the Basin Plan; CTR, SIP - Water quality-based effluent limitations established based on the procedures in the SIP; E - Existing permit limitation; BPJ – Best Professional Judgment

³ Temperature: This value represents an instantaneous maximum, not to be exceeded at any time. The pH must remain within this range at all times.

- ⁴ Effluent limitations for these metals are expressed as total recoverable.
- ⁵ Any three consecutive 96-hour static or continuous flow bioassay tests must be at least 90%, with no single test producing less than 70% survival (more information can be found in Section I.B.3.a. of the tentative permit).
- ⁶ This Order includes a chronic testing trigger defined as the monthly median for chronic toxicity of 100% effluent shall not exceed 1 TUC in a critical life stage test (more information can be found in Section I.B.3.b. of the proposed Order).

5. **Interim Effluent Limitations and Compliance Schedule for Discharge Serial No. 001**

Based on effluent monitoring data submitted by the Discharger, a comparison between the MEC and calculated WQBELs indicates that the Discharger will be unable to consistently comply with effluent limitations established in the proposed Order for hexavalent chromium, copper, lead, and nickel.

40 CFR section 131.38(e) provides conditions under which interim effluent limitations and compliance schedules may be issued. The CTR allows for a schedule of compliance not to exceed five years from the date of permit issuance for a point source discharge if the Discharger demonstrates that it is infeasible to promptly comply with effluent limitations derived from the CTR criteria. However, CTR's Compliance Schedule provisions sunset on May 18, 2005. After this date, the provisions of the SIP allow for Compliance Schedules not to exceed five years from issuance or past May 1, 2011, whichever is sooner. Interim effluent limitations have been included in the proposed Order for hexavalent chromium, copper, lead, and nickel for Discharge Serial No. 001. The interim limits are based on the Facility's current treatment performance. During the compliance period, the Discharger shall comply with the interim effluent limits for hexavalent chromium, copper, lead, and nickel at Discharge Serial No. 001. The interim limits are applicable from the date of adoption of the Order through August 4, 2007, after which, the Discharger shall demonstrate compliance with the final effluent limitations.

The Order requires the Discharger to develop a pollutant minimization plan and/or source control measures, and participate in the activities necessary to achieve the final effluent limitations.

The Discharger is required to submit annual progress reports to describe the progress of studies and or actions undertaken to reduce hexavalent chromium, copper, lead, and nickel in the effluent, and to achieve compliance with the limitations in the Order by the deadline specified in provision I.B.5. The first annual progress report shall be received by the Regional Board at the same time the annual summary report is due, as required in section I.B of *MRP*.

From the effective date of this Order until August 4, 2007, the discharge from Discharge Serial No. 001 in excess of the following interim effluent limitations is prohibited:

Pollutants	Average Monthly Effluent Limitation	Maximum Daily Effluent Limitation	Rationale ¹
	(units) µg/L	(units) µg/L	
Hexavalent chromium ¹	---	61	MEC
Copper ¹	---	16.6	MEC
Lead ¹	3.8	---	MEC
Nickel ¹	---	120	MEC

¹ MEC - Based on the maximum effluent concentration reported by the Discharger.

² Expressed as total recoverable.

6. **Monitoring Requirements**

The existing Order for Unocal required daily monitoring for flow and monthly monitoring for pH, temperature, oil and grease, settleable solids, total suspended solids, turbidity, sulfides, total petroleum hydrocarbons, benzene, bromoform, carbon tetrachloride, chlorobenzene, chlorodibromomethane, chloroethane, chloroform, dichlorobromomethane, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,2-dichloropropane, 1,3-dichloropropylene, ethyl benzene, ethylene dibromide, methylbromide, methylchloride, 1,1,2,2-tetrachloroethane, tetrachloroethylene, toluene, 1,2-trans-dichloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, vinyl chloride, Xylene, methyl ethyl ketone, and methyl tertiary butyl ether. In addition, Order No. 99-138 required quarterly monitoring for BOD. Further, the existing Order required annual monitoring for acute toxicity and annual monitoring requirements for the remaining priority pollutants.

Monitoring requirements are discussed in greater detail in Section III of the Monitoring and Reporting Program (*MRP*) No. 7688. As described in the *MRP*, monitoring reports must be submitted quarterly.

(a) ***Effluent Monitoring***

To demonstrate compliance with effluent limitations established in the permit, and to assess the impact of the discharge on the beneficial uses of the receiving waters, this Order carries over the existing monitoring requirements for some pollutants and adds monitoring requirements for other pollutants.

Daily monitoring for total flow and monthly monitoring for pH, temperature, oil and grease, settleable solids, TSS, turbidity, sulfides and TPH have been carried over from the existing Order. The quarterly monitoring requirements for BOD have been carried over from the existing Order as well. The proposed Order requires monthly monitoring for hexavalent chromium, copper, lead, and nickel to ensure compliance with new effluent

limitations. Monitoring has been reduced from monthly to quarterly for certain pollutants that did not show reasonable potential based on the RPA of the available monitoring data. Therefore, to determine compliance with effluent limitations, quarterly monitoring is required for chlorobenzene, chloroethane, 1,1-dichloroethane, 1,3-dichloropropylene, ethylbenzene, methyl bromide, 1,2-trans-dichloroethane, trichloroethylene, benzene, bromoform, carbon tetrachloride, chlorodibromomethane, chloroform, dichlorobromomethane, 1,2-dichloroethane, 1,1-dichloroethylene, 1,2-dichloropropane, ethylene dibromide, methyl chloride, 1,1,2,2-tetrachloroethylene, tetrachloroethylene, toluene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, xylene, methyl tertiary butyl ether, methyl ethyl ketone, and vinyl chloride. The remaining priority pollutants are monitored in an annual basis.

The proposed Order carries over the annual monitoring requirement for acute toxicity. In addition, annual monitoring is required for chronic toxicity.

As required in Order No. 99-138, grab samples are required for all limited pollutants. This Order also requires the Discharger to collect the effluent sample prior to the effluent entering the storm drain.

(b) 2,3,7,8-TCDD Monitoring for Reasonable Potential Determination

The Regional Board is requiring, as part of the *MRP*, that the Discharger conduct effluent monitoring for 2,3,7,8-TCDD (or Dioxin) and the 16 congeners. The Discharger is required to calculate Toxic Equivalence (TEQ) for each congener by multiplying its analytical concentration by the appropriate Toxicity Equivalent Factors (TEF). The Discharger is required to monitor for dioxin and report results in accordance with Section II of the *MRP*.