



California Regional Water Quality Control Board

Los Angeles Region



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March 5, 2004

Mr. Tim Strawn
ExxonMobil Oil Corporation
Remedial Engineering
3700 West 190th Street, TPT-2
Torrance, CA 90509

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
CLAIM NO. 7000 0520 0020 1693 5541

Dear Mr. Strawn:

GENERAL WASTE DISCHARGE REQUIREMENTS FOR GROUNDWATER REMEDIATION AT PETROLEUM HYDROCARBON FUEL AND/OR VOLATILE ORGANIC COMPOUND IMPACTED SITES – FORMER MOBIL SERVICE STATION #18-LDM, 12054 WILSHIRE BOULEVARD, LOS ANGELES, CALIFORNIA (FILE NO. 900250070)

We have completed our review of your application for Waste Discharge Requirements to re-inject treated water from the pump-and-treat system back into the shallow aquifer at the subject site.

In September 1987, three groundwater monitoring wells were installed and total petroleum hydrocarbons as gasoline (TPH_G) was detected in the soil samples taken during well installation. A sheen of product was detected in one of the three wells. By 1993, fourteen (14) groundwater monitoring wells were installed on or adjacent to the site (Figure 2). In September 1996, methyl tertiary butyl ether (MTBE) was detected in an on-site well at a concentration of 100,000 micrograms per liter (µg/L).

Also in September 1996, MTBE was detected in the City of Santa Monica's Arcadia well field, immediately south of the site, at concentrations up to 86.5 µg/L. The drinking water supply wells in the well field were shut down due to the MTBE impact. Arcadia wells #4 and #5 are screened in the Production Aquifer, which is beneath the Shallow Aquifer, and separated from the Shallow Aquifer by a 15-foot thick silty-clay aquitard. In June 1997, the gasoline service station was closed and demolished, and the underground storage tanks (USTs) were removed. In October 1997, an Carbon Adsorption Treatment System (CATS) (Figure 3) became operational with groundwater extraction from the Shallow Aquifer, the first water-bearing zone beneath the site. By December 1998, the CATS had been expanded to include pumping from 12 Shallow Aquifer groundwater extraction wells. The maximum MTBE detection at the site was 120,000 µg/L in on-site well OW-5 in December 1997. The CATS treatment system consists of three 5,000-pound granular activated carbon (GAC) vessels operated in series. The treated water was initially discharged to the sanitary sewer under an Industrial Waste Discharge Permit issued by the City of Los Angeles, Department of Public Works, Bureau of Sanitation.

By 1998, the MTBE plume had migrated approximately 2,000 feet to the south, and impacted the Lower Aquifer. The maximum MTBE concentration in the Lower Aquifer was 5,000 µg/L in well MW-38B in June 1999. The Lower Aquifer to the south is separated from the Shallow and Production Aquifers to the north by the east-west running Brentwood Fault. An on-site soil

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vapor extraction system was operated for 10 months, from May 1999 through March 2000. During this period, approximately 9,200 pounds of hydrocarbons were removed from the vadose zone on-site, immediately above the Shallow Aquifer.

In April 2000, groundwater extraction from six Lower Aquifer monitoring wells began. The extracted water is currently being treated in the CATS, along with the water pumped from the 12 Shallow Aquifer extraction wells. Therefore, 18 groundwater extraction wells are being used as part of the pump-and-treat system to remediate the groundwater at the site, at an average flow rate of 20 gallons per minute. With this increase in flow, the discharge was shifted from the sanitary sewer to the storm drain, under NPDES Permit No. CA0064262, issued on June 1, 1999, and modified on March 8, 2001. In May 2000, a treatment system for the Arcadia well field drinking water wells began Demonstration Testing. The drinking water treatment system is called the Production Aquifer Remediation System (PARS). The testing continued for seven months, until December 2000, at which time the wells were shut off. In September 2000, soil vapor extraction (SVE) began from the vadose zone above the Lower Aquifer. At the same time, vapor extraction from above the Shallow Aquifer was restarted to confirm the results of the previous SVE remediation above the Shallow Aquifer. This round of SVE continued for 13 months, until October 2001, at which time SVE was terminated. During this period of SVE, approximately 3,200 pounds of hydrocarbons were removed from the subsurface. In March 2001, the drinking water wells were turned back on at a flow rate of approximately 300 gallons per minute to continue remediation of the Production Aquifer.

In May 2002, the City of Santa Monica received an amendment to their water supply permit from the Department of Health Services, and the City began serving water from the Arcadia well field that had been treated in the PARS. In April 2003, ExxonMobil submitted an application to re-inject a portion of the treated groundwater into the Shallow Aquifer. Any potential adverse water quality impacts that may result will be localized, of short-term duration, and will not impact any existing or prospective uses of groundwater. Groundwater quality will be monitored to verify no long-term adverse impact to water quality.

The subject site is located within the Pressure Area of the West Coast Groundwater Basin. The depth to groundwater in the Shallow Aquifer at the subject site is approximately 14.5 feet below ground surface (bgs), and the groundwater gradient is to the south at 0.04 feet/foot. The top of the Production Aquifer is present at a depth of approximately 50 feet bgs. Because the Production Aquifer is confined, the potentiometric surface within the Production Aquifer ranges from 26 to 40 ft bgs, and the groundwater gradient is to the south at 0.08 feet/foot. The depth to groundwater in the Lower Aquifer ranges from 70 to 162 feet bgs, and the groundwater gradient is to the south at approximately 0.06 feet/foot.

The remedial approach for the site currently consists of groundwater pumping from up to 20 wells screened in three water bearing zones – Shallow Aquifer, Production Aquifer, and Lower Aquifer. The Shallow Aquifer is being remediated using 12 extraction wells, and the Lower Aquifer is being remediated using six extraction wells. The groundwater pumped from these 18 wells is combined and treated in the CATS prior to discharge to the storm drain at a flow rate of approximately 20 gallons per minute (gpm). The Discharger proposes to take a portion of the treated water currently being discharged to the storm drain and re-injected it into the Shallow Aquifer through on-site monitoring wells LDM-1, LDM-4 and/or LDM-5. The treated groundwater

will be re-injected to depths of up to 27 feet bgs. The designed rate of injection is 7,200 gallons per day. The infiltration rate is estimated at 2 to 5 gallons per minute. The Production Aquifer is being remediated using up to two water supply wells, Arcadia #4 and/or Arcadia #5, operating at a total flow rate of up to 350 gpm. The groundwater pumped from these two wells is being treated in the PARS prior to discharge to the Santa Monica Water Treatment Plant (SMWTP) for distribution to the City's customers.

Regional Board staff have reviewed the information provided and have determined that the proposed discharge meets the conditions specified in Order No. R4-2002-0030, "*General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel and/or Volatile Organic Compound Impacted Sites*," adopted by this Regional Board on January 24, 2002.

Enclosed are your Waste Discharge Requirements, consisting of Regional Board Order No. R4-2002-0030 (Series No. 046) and Monitoring and Reporting Program No. CI-8713 and Standard Provisions. Please note that the discharge limits in Attachment A (Los Angeles Coastal Plain – West Coast Groundwater Basin) of Order No. R4-2002-0030 are applicable to your discharge.

The "Monitoring and Reporting Program" requires you to implement the monitoring program on the effective date of this enrollment (March 5, 2004) under Regional Board Order No. R4-2002-0030. All monitoring reports shall be sent to the Regional Board, ATTN: Information Technology Unit.

When submitting monitoring or technical reports to the Regional Board per these requirements, please include a reference to "Compliance File No. CI-8713", which will assure that the reports are directed to the appropriate file and staff. Do not combine other reports with your monitoring reports. Submit each type of report as a separate document.

We are sending a copy of Order No. R4-2002-0030 only to the applicant. A copy of the Order will be furnished to anyone who requests it.

If you have any additional questions, please contact Mr. David Koo at (213) 620-6155.

Sincerely,

Dennis A. Dickerson
Executive Officer

Enclosures:

1. Board Order No. R4-2002-0030
2. Monitoring and Reporting Program No. CI-8713
3. Standard Provisions applicable to Waste Discharge Requirements (addressee only)

California Environmental Protection Agency



Mr. Tim Strawn
ExxonMobil Oil Corporation

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March 5, 2004

cc: Steven Linder, United States Environmental Protection Agency, Region IX
Greg Lovato, United States Environmental Protection Agency, Region IX
Heather Collins, Drinking Water Field Operations, State Department of Health Services
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