

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 West 4th Street, Suite 200, Los Angeles, California 90013

FACT SHEET
WASTE DISCHARGE REQUIREMENTS
FOR
TESORO PETROLEUM COMPANY
FORMER FAST FUEL STATION
ORDER NO. R4-2005-0030 (SERIES NO. 015)
(UST ID# 916061625)

FACILITY ADDRESS

Former Fast fuel Station
11051 Victory Boulevard
North Hollywood, CA 90069

FACILITY MAILING ADDRESS

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PROJECT DESCRIPTION

The site is a parking lot for Target store located at 11051 Victory Boulevard, North Hollywood, California (Site). Prior to 1996, the Site was subleased from Tesoro petroleum company (Tesoro) to an independent gasoline station (Fast Fuel Station). Fast Fuel was a gasoline retailer operating the station under an illicit subleased with a now bankrupted operator (Alameda Management Company). The Site, encompassing approximately 1/2 acres, was formerly used as a county landfill and subsequently as a gasoline station. Currently, the site is owned and operated as parking lot for a Target Store. During the station demolition in February 1996, all underground storage tanks (USTs) and dispenser islands were removed and approximately 200 cubic yards of soils were excavated and disposed offsite.

Tesoro (hereinafter Discharger) is conducting the groundwater cleanup activities at a former facility commonly known as the Fast fuel site (Site). Site investigations indicate that soil and groundwater have been contaminated with petroleum hydrocarbons.

Analytical results of soil samples collected during the tank removal in 1996 indicated the presence of hydrocarbon-impacted soil at the site. Several site assessments have been conducted since 1996 to identify and delineate petroleum hydrocarbon contamination associated with the USTs. A quarterly groundwater monitoring program has been implemented since January 1997. Due to groundwater depletion of the aquifer, currently only 14 of the 25 groundwater monitoring wells are sampled in the quarterly groundwater monitoring program.

Historically, TPHg up to 280,000 µg/L, benzene up to 31,500 µg/L and MTBE up to 128,000 µg/L were detected in the groundwater onsite. It was determined that groundwater contamination plume has migrated offsite. In July 2004, TPHg up to 6,900 µg/L, and MTBE up to 5,900 µg/L were detected in the offsite groundwater monitoring well MW-19. The groundwater table was measured at approximately 212 feet below ground surface and the flow direction was toward the east-northeast.

A vapor extraction system (VES) has been operated at the site since October 2000 to cleanup soil contamination, and has removed approximately 22,000 pounds of hydrocarbons from the site.

Currently the system is operating on a cycle of "two-week on and one-week off" in order to optimize soil remediation.

Groundwater Pump and Treatment system was initiated to clean up the groundwater contamination. An interim remedial measure (IRM) has been implemented since April 2004 to mitigate groundwater contamination plume in the offsite area. The IRM is composed of a groundwater pump-and-treatment system using biologically activated granular activated carbon. The groundwater pump and treat system has been marginally successful in cleaning up the groundwater contamination. As of January 3, 2005, approximately 2,570,000 gallons of the impacted groundwater have been extracted and treated by the system.

The City of Los Angeles, Department of Water and Power (LADWP) reported that many production wells are located near to this site and the closest two active drinking water wells (Whitnall No.4 and No.5) are located at 932 and 1,100 feet, respectively southwest of the site. The well screens for these production wells are set at a depth of 150 to 504 feet bgs. LADWP indicated that other inactive production wells might be activated in the near future, which would affect the direction of groundwater flow that is currently to the southeast. Current and historical groundwater flow directions are towards the east/southeast, placing Erwin Street well No. 1 (1-3831 H) directly downgradient from the Site.

Tesoro propose to re-evaluate the groundwater treatment system in order to expedite treatment and to eliminate any further groundwater plume migration and potential impact to drinking water aquifer. Tesoro with conjunction and agreement of the Regional Board and the prospective regulatory agencies (Los Angeles City Department of Water and Power, and State Department of Health Services) have agreed to explore the option of groundwater Pump and Treatment system and re-injection to groundwater aquifer. Due to limited time frame available for site cleanup, a combination of options is proposed to clean up the groundwater contamination and prevent further groundwater plume migration. The Remedial Action Plan (RAP) dated December 20, 2004 contains a proposal to expand the IRM to fully capture the groundwater contamination plume. Base on the results of groundwater pumping test and numerical modeling, the RAP presented four scenarios of groundwater pump-and-treatment, each with various pumping rates and/or re-injection rates of four selected wells. During a meeting on January 18, 2005 at the Regional Board, Option 4 (extract 30 GPM and re-inject 20 GPM) was considered as the best option. This option would create a groundwater capture zone between MW-19 and MW-25, and prevent the groundwater contamination plume from traveling farther offsite. Regional Board staff suggested to revise Option 4 slightly to increase the re-injection rate to 30 GMP at MW-25 to expedite the cleanup process and minimize discharge of the treated groundwater. In a letter dated February 15, 2005, Regional Board staff approved the RAP.

GROUNDWATER TREATMENT

Recovered groundwater will be subject to pretreatment via biologically activated, granular activated carbon (BioGAC). BioGAC is a biological and physical treatment process wherein granular activated carbon (GAC) vessels are augmented with bacteria proven to be effective in completely degrading MTBE to carbon dioxide, water and microbial mass. This harbored MTBE degrader known as PM-1 and found in the target aquifer onsite. During the pretreatment process, PM-1 will be initially seeded in the GAC with active biomass that following startup and acclimation, the North Hollywood BioGAC treatment system utilized PM-1 strains of microbes, plus the adsorptive action of GAC has provided an excellent treatment capacity for this project. This treatment process has been tested and proven by Shell Oil Company in their Bakersfield site previously.

The BioGAC treatment train that is already in use since April 2004 is comprised of three 2,000-pound vessels filled with GAC and augmented with the referenced bacteria cultures. Two of the vessels are operated in parallel with third vessel serving as a polishing unit for both. Diluted hydrogen peroxide, and if needed, liquid nitrogen fertilizer will be added and mixed in-line to the influent to provide oxygen and nutrients to promote aerobic bacterial decomposition of the influent MTBE concentration. Treated groundwater will be stored in a 5,000-gallons Baker-tank for the reinjection process.

Influent and effluent monitoring is currently performed and documented to ensure effluent quality. During the last four quarters of treatment process, groundwater monitoring indicated that effluent quality is below laboratory detection limits for both MTBE and TBA. Currently, treated groundwater is discharged via sewer pipeline to the Hyperion Treatment Plant Public Owned Treatment Works (POTW) of up to 20 gpm.

There have been no reports of adverse impacts associated with these products for cleaning up dissolved hydrocarbon fuel plumes in groundwater. There may be small increases associated with soluble gases such as dissolved oxygen (DO) and carbon dioxide.

INJECTION PROCEDURES

During the last week of May 2005, a pilot test was performed on groundwater monitoring well MW-25 to assess the feasibility of injecting 40 gpm using this well. Approximately 5,000-gallons of clean tap water was injected into the aquifer under the supervision of DWP, and measures were taken from other monitoring well to assess any potential geochemical changes that may effect either the injection process or the aquifer. Preliminary results of the pilot test indicated that no measurable impact on the groundwater monitoring network or the aquifer from the injection.

Treated groundwater will be discharged to a re-injection well MW-25 at a rate of 40-gallons per minute, as part of the recirculation network used to prevent lateral migration of the groundwater plume under certain regional flow conditions and will create an oxygen enriched *in-situ* tertiary treatment zone. The oxygen enriched in-situ zone will enhance indigenous bacteria confirmed present by genetic testing to further reduce concentrations of the constituents of concern in groundwater including VOCs.

GROUNDWATER MONITORING PROGRAM

Currently, a quarterly groundwater monitoring program under the UST program is being implemented for fourteen groundwater monitoring wells at the Site.

The groundwater monitoring program CI-8907 will be performed for all upgradient and downgradient groundwater monitoring wells onsite and offsite to assess the groundwater contamination plume and the effectiveness of the BioGAC treatment.

JUSTIFICATION FOR GENERAL WASTE DISCHARGE REQUIREMENTS

- The proposed injection satisfies all the criteria for enrollment under Board Order No. R4-2005-0030, "*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, and revised on May 5, 2005, including:

- **Discharge to groundwater of remediation compounds** – BioGAC is a biological and physical treatment process wherein granular activated carbon (GAC) vessels are augmented with bacteria proven to be effective in completely degrading MTBE to carbon dioxide, water and microbial mass. It is also used as Oxidation/Aerobic Degradation Enhancement Compound for the treatment of VOC in the groundwater environment. BioGAC treatment process has been approved and allowed remediation procedure under Board Order No. R4-2005-0030.
- **Discharger must have an approved Remedial Action Plan** – In a letter dated February 15, 2005, Regional Board staff approved a remedial action plan to implement the In-Situ BioGAC for groundwater remediation at Fast Fuel site.
- **CEQA requirements** – The Regional Board has prepared an Initial Study and Mitigated Negative Declaration for the issuance of these general waste discharge requirements in accordance with the provisions of the California Environmental Quality Act (CEQA).
- **Discharge has a rating of 3-A** – 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.
- **Monitoring and reporting** - On May 10, 2005, Regional Board staff discussed with Mr. Jeff Baker of Tosoro, Mr. Mark Mackowski of LADWP, and agreed upon the monitoring and reporting schedule for the Discharger. The monitoring program, consisting of 14 existing wells is already established for the project, including the new groundwater monitoring well MW-25.
- **Application/Annual Fee** – A check from the Consultant Headquarter Office in the amount of \$800.00 was received by our office on May 13, 2005. On June 17, 2005, another check in the amount of \$3,684.20 was received. The State Board will bill to the RP for any remaining balance once the RP is enrolled under the General Permit.
- Staff concludes that the enrollment of the subject pilot case under General WDR No. R4-2005-0030 is appropriate.