

**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**

**SANTA MONICA MUNICIPAL BUS LINES MAINTENANCE FACILITY
ORDER NO. R4-2002-0030: SERIES NO. 049
(UST ID# 904010043)**

FACILITY ADDRESS

Santa Monica Bus Maintenance Yard
1620 Sixth Street
Santa Monica, CA 90401

FACILITY MAILING ADDRESS

Mr. Brian Johnson
Environmental Programs Division
200 Santa Monica Pier, Suite C
Santa Monica, CA 90401-3126

PROJECT DESCRIPTION

The site is currently used as a Santa Monica municipal bus line (SMMBL) maintenance yard for the City of Santa Monica (CSM). It is located at 1620 Sixth Street in Santa Monica. Four 20,000-gallon diesel and one 10,000-gallon gasoline tanks were located onsite at the northwest of the property. As a result of leaks from former underground storage tanks (USTs), the groundwater is impacted with petroleum hydrocarbons, primarily diesel fuel, methyl tertiary butyl ether (MTBE) and volatile organic compounds (VOCs). Free product is also present in groundwater monitoring wells (MW-2, MW-15, and MW-28). The MTBE plume is located in the area south of the former UST area. A quarterly groundwater monitoring program has been implemented since 1997. Currently 14 groundwater monitoring wells are included in the quarterly groundwater monitoring program.

Since 1999, a groundwater pump-and-treat system was initiated to clean up the groundwater contamination. Groundwater was extracted from wells MW4, MW5, MW17B, and MW18B. In addition, since 2000, an air-injection bioventing system has been in operation at the site.

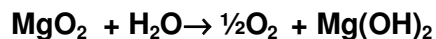
In the Remedial Action Plan Addendum (RAPA), dated January 29, 2004, CSM proposes to:

- a) Prevent the MTBE plume from migrating further downgradient by injecting ORC into the saturated zones south of the SMMBL property,
- b) Complete 16, 2-inch diameter injection points to 70 feet below ground surface (bgs),
- c) Dispense Oxygen Release Compounds (ORC) to the injection points, and
- d) Monitor natural attenuation.

Board staff concur with the RAPA with a condition requiring CSM to install additional groundwater monitoring wells MW-29 and MW-30 as marked on the Attachment 1 in order to adequately monitor the groundwater quality downgradient of the ORC injection area. The construction of the groundwater monitoring wells shall conform to the workplan dated January 30, 2001 submitted by Komex Inc. for the site, and approved by the Regional Board on February 28, 2001. The two downgradient wells shall be installed and sampled for all constituents and parameters contained in Item III, Page T-2 of the Monitoring and Reporting Program No. CI-8748, prior to the injection of any ORC materials.

ORC PRODUCT DESCRIPTION

ORC is a proprietary formulation of magnesium peroxide designed to provide a timed release of oxygen. ORC contains both magnesium oxide and magnesium peroxide. A few percent of food-grade potassium phosphate is also present. ORC is designed to produce a slow and sustained release of oxygen when in contact with groundwater or moist soil. ORC offers a passive, cost-effective, low intensity approach to accelerating aerobic bioremediation in the oxygen-limited contaminated subsurface. The timed-release oxygen of ORC is environmentally safe when hydrated in accordance with the following chemical reaction:



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

ORC will be injected into the saturated zone between 50 and 70 feet bgs. Approximately 7 pounds of ORC will be injected into every foot of the saturated zone for a total of 140 pounds of ORC per injection point. For each injection point, the 140 pounds of ORC will be mixed with approximately 40 gallons of water to create a solution with 30% solids and the ORC/water mixture will be injected into the saturated zone through the injection point.

Attachment 1 is the plot plan showing well and injection points.

GROUNDWATER MONITORING PROGRAM

Currently, a quarterly groundwater monitoring program under the UST program is being implemented at the Site. CSM will continue the groundwater monitoring program. The groundwater will be sampled and analyzed for TPHd, oxygenates, redox potential (ORP), pH, and dissolved oxygen as part of the monitoring program to assess the effectiveness of the ORC treatment.