

**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
CITY OF SIMI VALLEY PUBLIC SERVICES CENTER
ORDER NO. R4-2005-0030: SERIES NO. 037
UST FILE NO. VCEHD C-96012**

FACILITY ADDRESS

Ms. Velma Warne Property
1196 Patricia Avenue
Simi Valley, CA 93065

FACILITY MAILING ADDRESS

Ms. Velma Warne
Mr. Ron Warne
9001 Roseland Road
Moorpark, CA 93021

PROJECT DESCRIPTION

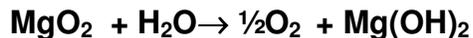
The Site is located at 1196 Patricia Avenue, Simi Valley, California and contains two parcels encompassing an area of approximately 2.0 acres. (Figures 1 and 2) (Latitude: N34° 27' 07", Longitude: E118° 77' 66").

The Site is located in the Simi Basin, which lies between the Santa Susana Mountains to the north and the Simi Hills to the south. The Simi Basin contains a relatively thick sequence of alluvial deposits derived from the surrounding mountains and foothills. Groundwater has been documented at depths ranging between approximately 5 and 15 feet depending upon rainfall and the proximity of measurements to the Arroyo Simi drainage.

The Site has been developed with a single-family residence in the eastern parcel and a equipment yard for a landscape service company in the western parcel. The equipment yard formerly contained two underground storage tanks (USTs), one 550-gallon diesel fuel tank and one 1,000-gallon gasoline tank. In March 1996, the two USTs were removed. Currently, there are no USTs at the Site. Upon removal of the USTs, five soil samples were collected and analyzed. The highest concentrations of petroleum hydrocarbons as gasoline (TPH_G) of 6,500 mg/kg and benzene of 47 mg/kg were detected. Subsequent site investigations indicated that the underlying soil and groundwater had been contaminated with fuel hydrocarbons. A Remedial Action Plan (RAP) dated October 14, 2005, was prepared by Padre Associates, Inc. (Padre). The Ventura County Environmental Health Division (VCEHD) approved the RAP on November 9, 2005. Padre proposes to inject a combination of ozone/oxygen/air aparing and hydrogen peroxide to enhance chemical oxidation and aerobic degradation of dissolved phase petroleum hydrocarbons and fuel oxygenates in the shallow groundwater. Padre proposes to install eight ozone and air spargin/hydrogen peroxide injection wells for the remediation system at the Site.

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 offers a passive, cost-effective, low intensity approach to accelerating aerobic bioremediation in the oxygen-limited contaminated subsurface. ORC is environmentally safe that time-releases oxygen when hydrated in accordance with the following reaction:



There have been no 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.

INSTALLATION OF ORC BARRIER

The proposed ORC barrier will be 300 feet long and ORC will be injected in 2 rows with 20 injection points per row on 15-foot centers (40 points total). The probes will be driven to 10 feet below the top of the groundwater table and ORC injected at a rate of approximately 5 pounds per vertical foot (50 pounds per injection point) as the probes are withdrawn. A total of 2,000 pounds of ORC will be used to construct the barrier. The borings will then be backfilled with cement-bentonite grout from the top of the ORC application zone to the ground surface.

The ORC will be applied using direct push hydraulic equipment. Drive rods will be pushed to the bottom of the contaminated saturated zone and an ORC/water slurry will be injected in the treatment zone as the rods are withdrawn.

MICROCOSM STUDIES

Two soil samples will be collected from beneath the groundwater table in the groundwater contamination plume for laboratory microcosm testing. Non-indigenous Bioremediation microbe degraders may be added to further enhance the remediation process.

GROUNDWATER MONITORING PROGRAM

Seven additional groundwater monitoring wells (MW-5 through MW-11) were installed in July 2002 for this project as follows:

- Two of the wells are located immediately upgradient of the ORC barrier, two wells immediately downgradient of the ORC barrier to evaluate the barrier performance;
- Two wells outside the estimate eastern and western extent of the groundwater contamination plume to monitor the cross gradient plume extent; and
- one well downgradient of estimate extent of the groundwater contamination plume to assess the downgradient extent of contamination.

The groundwater monitoring program will be performed for a total of 11 groundwater monitoring wells to assess the groundwater contamination plume and the effectiveness of the ORC treatment.

ADDITIONAL ORC TREATMENT

The ORC barrier project will be operated approximately nine to twelve months. Based on the results of this phase of treatment, the ORC source area treatment and refreshing injection to the ORC barrier may be conducted. The proposed ORC source area treatment array will consist of single row barriers constructed across the width of the contamination plume. The ORC will be injected in 12 rows on 10-foot centers for a total of 176 points. The probes will be driven to 10 feet below the top of water table and ORC injected at a rate of approximately 4 pounds per vertical foot (40 pounds per injection point) as the probes are withdrawn. A total of 7,040 pounds of ORC will be used for the source area treatment array.