



# California Regional Water Quality Control Board Los Angeles Region

Over 50 Years Serving Coastal Los Angeles and Ventura Counties

Recipient of the 2001 Environmental Leadership Award from Keep California Beautiful

Winston H. Hickox  
Secretary for  
Environmental  
Protection



Gray Davis  
Governor

320 W. 4th Street, Suite 200, Los Angeles, California 90013  
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.swrcb.ca.gov/rwqcb4>

✓  
CI 8572

June 12, 2003

Mr. Mark Bixby  
Bixby Land Company  
4525 Atherton Street  
Long Beach, CA 90815

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED  
CLAIM NO. 7002 2410 0006 3316 4548

RFV

Dear Mr. Bixby:

**GENERAL WASTE DISCHARGE REQUIREMENTS FOR GROUNDWATER REMEDIATION AT PETROLEUM HYDROCARBON FUEL AND/OR VOLATILE ORGANIC COMPOUND IMPACTED SITES - BIXBY LAND COMPANY, 5090 LOS COYOTES DIAGONAL, LONG BEACH, CALIFORNIA (FILE NO. 908150116)**

We have completed our review of your application for Waste Discharge Requirements to use Oxygen Release Compound (ORC<sup>®</sup>) to remediate the petroleum-contaminated groundwater at the subject site.

Bixby Land Company owns the property located at 5090 Los Coyotes Diagonal in Long Beach. A Union 76 gasoline station formerly occupied the site, which is now vacant. The site lies in the West Coast Basin of the coastal plain of Los Angeles County. The discharge point lies 118°8'3" longitude and 33°47'44" latitude.

A subsurface soil investigation found ethylbenzene, naphtalene, trimethylbenzene and methyl tertiary butyl ether (MTBE) in soil samples collected from a depth of 20 feet, but no residual contamination is present in the soil column above the groundwater table. Groundwater contamination related to the activities of the former gasoline station is found on the site. Gasoline, benzene, toluene, ethylbenzene, xylene (BTEX) and MTBE impact groundwater underneath the site.

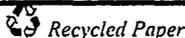
The Los Angeles Regional Water Quality Control Board approved the Remedial Action Plan to use ORC<sup>®</sup> to remediate the contaminated groundwater. ORC<sup>®</sup> is a patented formulation of magnesium peroxide that produces a sustained release of molecular oxygen when in contact with the groundwater. This aids the naturally occurring aerobic microorganisms to degrade pollutants, such as gasoline, BTEX and MTBE, to harmless by-products of carbon dioxide and water.

The treatment area encompasses about 1,600 square feet and targets MW1258 and MW1260, which have historically contained the highest concentrations of gasoline and MTBE. The dose rate is 162-216 pounds ORC<sup>®</sup> per injection point. ORC<sup>®</sup> will be injected into 16 different locations as shown in Figure 1.

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

**California Environmental Protection Agency**

\*\*\*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption\*\*\*  
\*\*\*For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>\*\*\*



Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

Mr. Mark Bixby  
Bixby Land Company

- 2 -

June 12, 2003

*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. 023) and Monitoring and Reporting Program No. CI-8572.

The Monitoring and Reporting Program requires you to implement the monitoring program on the effective date of this enrollment (June 12, 2003) 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, include a reference to No. CI-8572, 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 Ms. Dionisia Rodriguez at (213) 620-6122.

Sincerely,



Dennis A. Dickerson  
Executive Officer

Enclosures:

1. Board Order No. R4-2002-0030
2. Monitoring and Reporting Program No. CI-8572
3. Standard Provisions Applicable to Waste Discharge Requirements (addressee only)

cc: Mr. Robert Sams, Office of Chief Counsel, State Water Resources Control Board  
Mr. Michael Lauffer, Office of Chief Counsel, State Water Resources Control Board  
Mr. Tim Smith, County of Los Angeles Department of Public Works, Environmental Programs Division, Underground Tanks  
Mr. Hari Patel, State Water Resources Control Board, Underground Storage Tank Cleanup Fund  
Mr. Bruce Mowry, Water Replenishment District of Southern California  
Ms. Linda Norwood, Targhee, Inc.

**California Environmental Protection Agency**

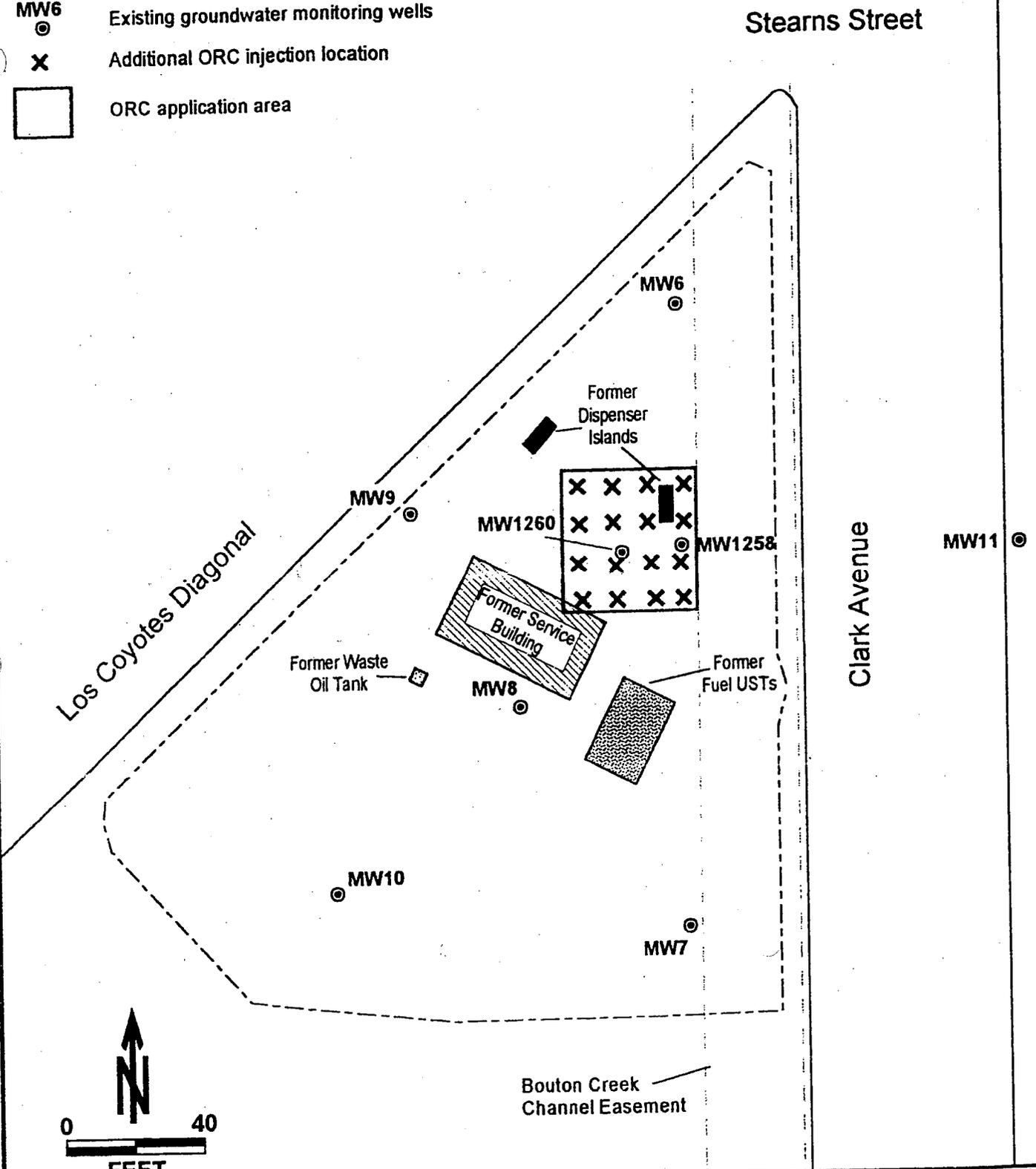
\*\*\*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption\*\*\*  
\*\*\*For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>\*\*\*



Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

# LEGEND

- MW6 Existing groundwater monitoring wells
- X Additional ORC injection location
- ORC application area



OXYGEN RELEASE COMPOUND (ORC)  
INJECTION LOCATION MAP

FIGURE 1

**STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION**

**MONITORING AND REPORTING PROGRAM NO. CI-8572  
FOR  
BIXBY LAND COMPANY**

**ENROLLMENT UNDER REGIONAL BOARD  
ORDER NO. R4-2002-0030 (Series No. 023)  
FILE NO. 908150116**

**I. MONITORING AND REPORTING REQUIREMENTS**

- A. Bixby Land Company (hereinafter Discharger) shall implement this monitoring program on the effective date of this enrollment (June 12, 2003) under Regional Board Order No. R4-2002-0030. The first monitoring report under this program for the monitoring period July-September 2003 shall be received at the Regional Board by October 15, 2003. Subsequent monitoring reports shall be received at the Regional Board according to the following schedule:

<u>Monitoring Period</u>	<u>Report Due</u>
January – March	April 15
April – June	July 15
July – September	October 15
October – December	January 15
Annual Summary Report	March 1 of each year

- B. Monitoring reports shall include technical information on total quantities of injected chemicals/fluids, composition of injected chemicals/fluids, and injection points/locations. If there is no discharge or injection, during any reporting period, the report shall so state. Monitoring reports must be addressed to the Regional Board, Attention: Information Technology Unit.
- C. By March 1 of each year, the Discharger shall submit an annual summary report to the Regional Board with the first annual report due March 1, 2004. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous calendar year. In addition, the Discharger shall discuss the compliance record and the corrective actions taken or planned, which may be needed to bring the discharge into full compliance with the waste discharge requirements.
- D. Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharger into full compliance with waste discharge requirements. This section shall be located at the front of the report and shall clearly list all non-compliance with discharge requirements as well as all excursions of effluent limitations.

- E. The Discharger shall comply with requirements contained in Section G. of Order No. R4-2002-0030 "Monitoring and Reporting Requirements" in addition to the aforementioned requirements.

II. OXYGEN RELEASE COMPOUND (ORC) INJECTION MONITORING REQUIREMENTS

The quarterly reports shall contain the following information regarding injection activities:

1. Location Map showing injection points(s) of the ORC used during the reporting period.
2. Boring log of each injection point(s) or vertical cross-section diagram of injection point(s) indicating the placement of the ORC during the reporting period.
3. Written supplemental summary including, but not limited to:
  - ❖ Depth of injection point(s);
  - ❖ Quantity of ORC injected at each point; and
  - ❖ Total amount of ORC injected.

III. GROUNDWATER MONITORING PROGRAM

A groundwater monitoring program shall be designed to detect and evaluate impacts associated with the ORC injection activities. The following shall constitute the monitoring program for Monitoring Well Nos. 6, 7, 8, and 9. The Discharger shall conduct initial sampling from all the monitoring wells for the following groundwater parameters within one week after the construction of Monitoring Well Nos. 6, 7, 8, and 9.

<u>CONSTITUENT</u>	<u>UNITS</u>	<u>TYPE OF SAMPLE</u>	<u>MINIMUM FREQUENCY OF ANALYSIS</u>
Total Petroleum Hydrocarbon as Gasoline (EPA Method 8015M)	µg/l	grab	Quarterly
Benzene, Toluene, Ethylbenzene and Xylene (BTEX), Methyl Tertiary Butyl Ether (MTBE) and other oxygenates (EPA Method 8260B)	µg/l	grab	Quarterly
Total Organic Carbon (EPA Method 9060 Modified)	µg/l	grab	Quarterly
Total dissolved solids	mg/l	grab	Quarterly
Biochemical Oxygen Demand	mg/l	grab	Quarterly

Chemical Oxygen Demand	mg/l	grab	Quarterly
pH	pH units	grab	Quarterly
Oxidation-reduction potential	millivolts	grab	Quarterly
Groundwater depth	Feet, below ground surface (bgs)	In situ	Quarterly
Dissolved Oxygen	µg/l	grab	Quarterly
Major Anions (chloride, sulfate, nitrate, nitrite, and sulfide)	µg/l	grab	Quarterly
Major Cations (Calcium, magnesium, potassium and sodium)	µg/l	grab	Quarterly
Carbon dioxide	µg/l	grab	Annually

All groundwater monitoring reports must include, at minimum, the following:

- a. Well identification, date and time of sampling;
- b. Sampler identification, and laboratory identification;
- c. Quarterly observation of groundwater levels, recorded to 0.01 feet mean sea level and groundwater flow direction.

IV. MONITORING FREQUENCIES

Specifications in this monitoring program are subject to periodic revisions. Monitoring requirements may be modified or revised by the Executive Officer based on review of monitoring data submitted pursuant to this Order. Monitoring frequencies may be adjusted to a less frequent basis or parameters and locations dropped by the Executive Officer if the Discharger makes a request and the request is backed by statistical trends of monitoring data submitted.

V. CERTIFICATION STATEMENT

Each report shall contain the following completed declaration:

"I certify under penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment.

Executed on the \_\_\_\_\_ day of \_\_\_\_\_

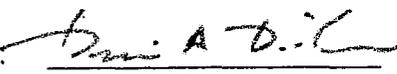
at \_\_\_\_\_

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Title)"

All records and reports submitted in compliance with this Order are public documents and will be made available for inspection during business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region, upon request by interested parties. Only proprietary information, and only at the request of the Discharger, will be treated as confidential.

Ordered by:

  
Dennis A. Dickerson  
Executive Officer

Date: June 12, 2003