

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

**FACT SHEET  
INDIVIDUAL WASTE DISCHARGE REQUIREMENTS  
FOR  
BOEING REALTY CORPORATION, FORMER C-1 FACILITY  
LONG BEACH, CALIFORNIA  
(FILE NO. 95-034)  
ORDER NO. R4-2003-XXXX**

**FACILITY ADDRESS**

3855 Lakewood Blvd  
Long Beach, CA 90846

**FACILITY MAILING ADDRESS**

3760 Kilroy Airport Way, Suite 500  
Long Beach, CA 90806

**PROJECT DESCRIPTION:**

The Boeing C-1 Site is located in Long Beach at Latitude: 33 degrees, 50 minutes North, Longitude: 118 degrees, 9 minutes West. The Boeing Realty Corporation (BRC) owns the Boeing C-1 Facility (Facility) at 3855 Lakewood Blvd which is used as an aircraft manufacturing and assembling facility. This Regional Board has required investigation and remediation at this Facility. BRC proposes to conduct three pilot tests (Buildings 1D, 3, and 36) and anticipates a fourth (Building 14) to evaluate the effectiveness of in-situ bioremediation in the saturated zone by adding amendment solutions made from carbohydrates (sodium lactate, soybean oil, ethanol, and/or acetate) and a group of microorganisms, known as KB-1 capable of reducing TCE to ethene, to remediate volatile organic compounds (VOCs) in groundwater. KB-1 is non-pathogenic and naturally derived (i.e., not genetically engineered). The carbohydrates in the amendment solutions will act as a food source for KB-1.

The use of carbohydrates to induce in-situ bioremediation is covered under the General Waste Discharge Permit (General Permit) and was approved for the Facility under Board Order No. R4-2002-0030, Series 8 on January 15, 2003). The use of KB-1 is not covered under the General Permit and requires an Individual Waste Discharge Permit (Individual WDR). The TCE plume at Building 1D extends over an area of approximately 1,300 feet by 400 feet. The TCE plume at Building 3 extends over an area of approximately 1,800 feet by 1,000 feet. The TCE plume at Building 14 extends over an area of approximately 1,450 feet by 700 feet. The TCE plume at Building 36 extends over an area of approximately 1,400 feet by 600 feet.

**DESCRIPTION OF DISCHARGE (INJECTION):**

Amendment solutions comprised of potable water, extracted groundwater, amendments specified in the approved remediation work plans as approved under the General WDR permit, and KB-1 will be introduced to the aquitard underlying the Facility. The maximum concentration of amendments other than KB-1 are specified in the General Permit. The maximum concentration of KB-1 shall not exceed 0.1% (by pore water volume of the treatment area). The solutions will be introduced into the subsurface through both injection points and injection wells. The discharge may result in some localized temporary exceedances of background concentrations of total organic carbon, iron, manganese, arsenic, TDS, and certain microorganisms. However, after the injection of amendments, these parameters are not anticipated to exceed the primary or secondary standards to the extent that these parameters do not already exceed the respective standard.

Groundwater quality will be monitored to evaluate the performance of the pilot tests. BRC shall stop further addition of amendments to the groundwater if carbohydrates or KB-1 are observed to be migrating off-site. After this control measure has been implemented the remaining amendments in the groundwater will naturally break down, effectively removing food source and allowing the groundwater system to

return to more aerobic conditions. The KB-1 will not survive due to the loss of the food source. Furthermore, KB-1 is sensitive to oxygenated water. The estimated duration of the four pilot tests range from approximately one year to two and a half years. Based on the results of these efforts, this technology may be used to remediate additional areas impacted by VOCs on the C-1 Facility pursuant to this General Permit. BRC will be required to submit additional work plans and receive approval prior to conducting additional pilot tests or full-scale remediation at any other areas at the Facility. These additional work plans will also be covered under this Individual WDR, by modifying the monitoring and reporting program as necessary.

The quantities of solution injected will be documented per the Monitoring and Reporting Program No. CI-xxxx.