



California Regional Water Quality Control Board

Los Angeles Region



Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

Alan C. Lloyd, Ph.D.
Agency Secretary

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

Arnold Schwarzenegger
Governor

October 20, 2005

Mr. Mark Allen
The Boeing Company
Rocketdyne Propulsion & Power
P.O. Box 7922
Conoga Park, CA 91303

**WASTE DISCHARGE REQUIREMENTS FOR PILOT TESTS TO EVALUATE
BIOREMEDIATION OF VOLATILE ORGANIC COMPOUNDS (VOCS) IN GROUNDWATER
FORMER COMPTON FACILITY, THE BOEING COMPANY, COMPTON (SLIC NO. 462,
558A, 558B) (FILE NO. 96-056 AND 96-057)**

Dear Mr. Allen:

Pursuant to Division 7 of the California Water Code, this Regional Board at a public hearing held on October 6, 2005, reviewed the tentative requirements, considered all factors in the case, and adopted Order No. R5-2005-0068 (copy attached) relative to this waste discharge. Section 13263 (e) of the California Water Code provides that all Requirements shall be reviewed periodically and, upon such review, may be revised by the Regional Board.

The "Monitoring and Reporting Program" requires you to implement the monitoring program on the effective date of this Order. All monitoring reports should be sent to the Regional Board, ATTN: Information Technology Unit.

When submitting monitoring or technical reports to the Regional Board per these requirements, please include a reference to Compliance File CI-8974 and Order No. R4-2005-0068, which will assure that the reports, are directed to the appropriate file and staff. Please do not combine your discharge monitoring reports with other reports. Submit each type of report as a separate document.

Please call Ms. Ana Townsend at (213) 576-6738, or Dr. Rebecca Chou at (213) 576-6733 if you have any questions.

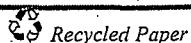
Sincerely,

Jonathan Bishop
Executive Officer

Enclosures.

cc: See Mailing List

California Environmental Protection Agency



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

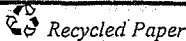
Mr. Allen

- Mailing List -

October 20, 2005

Robert Sams, State Water Resources Control Board, Office of Chief Counsel
John Youngerman, State Water Resources Control Board, Division of Water Quality
Cheryl Ross, West Basin Municipal Water District
Chris Nagler, Watermaster - California Department of Water Resources
City of Compton, Department of Health Services
United States Environmental Protection Agency, Region 9, Permits Branch (WTR-5)
United States Army Corps of Engineers
Tom Cota, Department of Toxic Substances Control, Cypress
Kurt Souza, Department of Health Services, Drinking Water Field Operation Branch
Los Angeles County, Department of Public Works, Waste Management Division
Los Angeles County, Department of Health Services
South Coast Air Quality Management District
California Department of Transportation
Jack Caldwell, GeoSyntec Consultants
Scott Zachary, Haley & Aldrich

California Environmental Protection Agency



Recycled Paper

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

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

RESOLUTION NO. R05-011

APPROVING THE ENVIRONMENTAL CHECKLIST AND
ADOPTING A MITIGATED NEGATIVE DECLARATION FOR
PILOT TESTS TO EVALUATE IN-SITU BIOREMEDIATION OF VOLATILE ORGANIC
COMPOUNDS IN SHALLOW GROUNDWATER, THE BOEING COMPANY, FORMER
COMPTON FACILITY, COMPTON, CALIFORNIA
(FILE NO. 96-056 and 96-057)

WHEREAS, the California Regional Water Quality Control Board, Los Angeles Region finds that:

1. California Water Code (CWC) section 13260(a)(1) requires that any person discharging wastes, or proposing to discharge wastes other than into a community wastewater collection system, which could affect the quality of the waters of the State, shall file a report of waste discharge (ROWD) with the Regional Water Quality Control Board (Regional Board) exercising jurisdiction in the area, and that Regional Board shall then prescribe requirements for the discharge or proposed discharge of wastes.
2. The Boeing Company (Discharger) previously owned the Former Compton Facility located at 233 East Manville Street and 157 and 200 East Stanley Street in Compton, Los Angeles County, California (Facility). The Facility is 10 acres and was formerly used between approximately 1955 and 1969 by North American Aviation (NAA), Rockwell International's (Rockwell) Autonetics Division, and Rockwell's Space Division (collectively: NAA/Rockwell) for aerospace manufacturing operations, production of military electronic components including radar and missile guidance systems, and manufacturing of electronic components for the National Aeronautics and Space Administration (NASA) rocket programs. Since 1969 the site has been occupied by various companies and has been used primarily for industrial manufacturing of airplane parts, electronic components, automobile service, precision tool manufacturing, the roofing industry, distribution of SCUBA gear, and the molding of plastic products. The Discharger sold the property in 2004 but is continuing assessment and remediation activities. The new owner is redeveloping the property.
3. Soil and groundwater beneath the Facility is contaminated with volatile organic compounds (VOCs) including trichloroethene (TCE), perchloroethene (PCE), and cis-1,2-dichloroethene (cis-1,2,-DCE).
4. The Discharger conducted a pilot test at the Facility to evaluate the remediation of chlorinated VOCs in shallow groundwater by enhanced in-situ bioremediation with bioaugmentation to remediate selected source areas. In-situ bioremediation involves the addition of carbon source amendments (i.e. lactate, edible oils, ethanol, etc.) to the shallow groundwater. Bioaugmentation involves the addition of selected non-pathogenic (naturally derived, not genetically engineered) chlorinated ethene-degrading *Dehalococcoides ethenogenes* culture, referred to as KB-1, in select areas to facilitate reductive dechlorination. Details of the remediation and methods are included in the pilot test work plan, "Former Compton Site In-Situ Reactive Zone Pilot Test Workplan," dated February 3, 2003, prepared by Arcadis G&M, approved on February 26, 2003.

5. Carbohydrate solutions are being used to induce in-situ bioremediation in a number of similar remediation efforts throughout this Region. Therefore, on January 24, 2002, This Regional Board adopted Order No. R4-2002-0030 "General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel and/or Volatile Organic Compound Impacted Sites"(General WDR).
6. The Discharger has filed a Report of Waste Discharge and applied for General Waste Discharge Requirements to use carbohydrate solution at this Facility. To expedite groundwater remediation at the Facility, the Regional Board, through its Executive Officer, granted the Discharger coverage under the General WDR on July 22, 2003, and issued a Monitoring and Reporting Program No. CI-~~8520~~²⁵³⁰ for the injection of carbohydrate solution.
7. The General WDR allows the injection of carbohydrate solution, but does not specifically provide for the addition of KB-1. The Discharger has filed a Report of Waste Discharge and applied for Site-Specific Waste Discharge Requirements (WDR) to add KB-1 to the shallow groundwater. Site-Specific WDR have been developed for the addition of KB-1 at this Facility in conjunction with the existing General WDR. These Site-Specific WDR will also cover the injection of the carbohydrate solution currently covered under the existing General WDR, which will be rescinded once the Site-Specific WDR has been issued.
8. Groundwater beneath the Facility is unconfined and the direction of flow varies across the Facility but is generally toward the north-northwest. The Discharger shall monitor presence and concentration of injection solution and contaminants and evaluate flow conditions and any potential for migration of contaminants outside the remediation areas. As specified in the Waste Discharge Requirements and Notice of Preparation of Mitigated Negative Declaration, the Discharger will provide hydraulic control, if necessary, to prevent offsite migration. Monitoring of groundwater quality and flow conditions across the entire Facility is required by a comprehensive separate Facility-wide groundwater monitoring program.
9. The injection of the carbohydrate solution with KB-1 to the groundwater is a discharge of waste pursuant to section 13260 of the California Water Code. However, the discharge of the carbohydrate solution with KB-1 is intended to provide more efficient remediation of VOC-contaminated groundwater and is anticipated to reduce cleanup time and costs.
10. The Water Quality Control Plan (Basin Plan) for the Los Angeles Region designates the beneficial uses of groundwater in the Central Basin for municipal and domestic supply, industrial process supply, industrial service supply, and agricultural supply.
11. The permitted discharge is consistent with the anti-degradation provisions of State Water Resources Control Board Resolution No. 68-16 (Anti-degradation Policy). The discharge may result in some localized exceedance of background concentrations of constituents such as total organic carbon, VOCs, and total dissolved solids (TDS), but this is not anticipated to result in any long-term groundwater degradation.
12. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations. The Regional

Board, in a public meeting on October 6, 2005, heard and considered all comments pertaining to the discharge and to the tentative requirements.

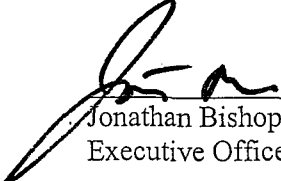
13. This Regional Board has assumed lead agency role for this project under the California Environmental Quality Act (Public Resources Code section 21000 et seq.) and has conducted an Initial Study (in the format of an expanded Environmental Checklist) in accordance with title 14, California Code of Regulations, section 15063, titled Guidelines for Implementation of the California Environmental Quality Act. Based on the Initial Study, Regional Board prepared a Mitigated Negative Declaration that the project will not have a significant adverse effect on the environment.
14. Copies of the Environmental Checklist and proposed Mitigated Negative Declaration were transmitted to the State Clearing House, all agencies and interested parties. All comments received have been addressed by Regional Board staff. The Regional Board considered all testimony and evidence at a public hearing held on October 6, 2005, at the Metropolitan Water District of Southern California, Board Room, 700 North Alameda, Los Angeles, California, and good cause was found to approve the Environmental Checklist and adopt a Mitigated Negative Declaration.
15. The Regional Board has reviewed the Initial Study and Mitigated Negative Declaration concerning this Resolution prepared by staff in compliance with the California Environmental Quality Act (Public Resources Code section 21000 et seq.). The Regional Board concurs with the staff findings that a Mitigated Negative Declaration should be adopted. The Initial Study and Mitigated Negative Declaration were circulated for public review and comment.

THEREFORE, BE IT RESOLVED that the Regional Board:

1. Adopts the Environmental Checklist, Initial Study and Mitigated Negative Declaration and directs the Executive Officer to file a Notice of Determination with the State Clearinghouse within 30 days as required by the California Code of Regulations.
2. Directs that a copy of this Resolution shall be forwarded to the State Water Resources Control Board and all interested parties.
3. Directs that the discharge of amendments and microorganisms into the soil and groundwater shall conform with all the requirements, conditions, and provisions set forth in A. "Discharge Limits" and B. "Discharge Specifications" of the ORDER NO. R~~0~~5-2005-0068.

CERTIFICATION

I, Jonathan Bishop, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Los Angeles Region on October 6, 2005.


Jonathan Bishop
Executive Officer

10/27/05
Date

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. R4-2005-0068

WASTE DISCHARGE REQUIREMENTS
FOR
THE BOEING COMPANY
PILOT TESTS TO EVALUATE IN-SITU BIOREMEDIATION OF
VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
FORMER COMPTON SITE

(FILE NO. 96-056 and 96-057)

The California Regional Water Quality Control Board, Los Angeles Region, (hereafter Regional Board) herein finds that:

1. The Boeing Company (hereafter Discharger) has filed a Report of Waste Discharge and applied for Waste Discharge Requirements to use a non-pathogenic (naturally derived, not genetically engineered) chlorinated-ethene degrading microbial consortium containing Dehalococcoides ethenogenes culture, referred to as KB-1, to bioremediate chlorinated volatile organic compounds (VOCs) in shallow groundwater through reductive dechlorination to environmentally acceptable, non-toxic ethene in groundwater at the Former Compton Site (Site) identified below.
2. The Site encompasses approximately 10 acres on four adjacent former parcels of land and is located at 233 East Manville Street (former Parcel 1), 157 East Stanley Street (former Parcel 3), and 200 East Stanley Street (former Parcels 2 and 4), Compton, California (Latitude 33° 52'00" North, Longitude 118° 13'00" West, see Figure 1). The site is located in an industrial area and was formerly used between approximately 1955 and 1969 by North American Aviation (NAA), Rockwell International's (Rockwell) Autonetics Division, and Rockwell's Space Division (collectively: NAA/Rockwell) for aerospace manufacturing operations, production of military electronic components including radar and missile guidance systems, and manufacturing of electronic components for the National Aeronautics and Space Administration (NASA) rocket programs. Since 1969 the site has been occupied by various companies and has been used primarily for industrial manufacturing of airplane parts, electronic components, automobile service, precision tool manufacturing, the roofing industry, distribution of SCUBA gear, and the molding of plastic products. The Discharger sold the property in 2004 but is continuing assessment and remediation activities. The new owner is redeveloping the property.
3. In 1991, other parties began soil and groundwater investigations at the Site and discovered soil and groundwater pollution on the site near former processing pits, clarifiers, associated piping, and chemical use, handling and storage areas. The Discharger submitted soil and groundwater investigation reports to the Los Angeles County Department of Public Works and the Regional Board.
4. Shallow groundwater beneath the Site is first encountered at depths ranging from approximately 60 to 68 feet below ground surface, although perched groundwater conditions have been encountered at depths ranging from 20 to 50 feet in portions of the site. Shallow groundwater is unconfined and occurs within the Bellflower Aquitard. The Exposition and Gage Aquifers are present beneath the Bellflower Aquitard. The Bellflower Aquitard comprises the upper portion of the Lakewood Formation and generally occurs from land surface to depths of approximately 105 to 130 feet beneath the Site and appears to be laterally continuous across the Site. The Bellflower Aquitard is comprised primarily of a heterogeneous mixture of low permeability silts and clays, with lenses and layers of

WASTE DISCHARGE REQUIREMENTS NO. R4-2005-0068

FILE NO. 96-056 and 96-057

The Boeing Company

Former Compton Site

sandy or gravelly clay, silty sand, and sand identified in some areas. The Bellflower Aquitard is known to have relatively low hydraulic conductivities and regional groundwater supply wells are not screened in and do not produce from this unit.

5. The Discharger has conducted a comprehensive Site-wide soil and groundwater investigation. The investigation consisted of drilling more than 600 soil borings, collecting and analyzing over 2,000 soil samples, collecting and analyzing 59 soil gas samples, installation of over 64 groundwater monitoring wells, 16 hydropunch groundwater sampling points, and collection and analysis of approximately 800 groundwater samples.
6. The Site-wide investigations show that the primary contaminants detected in soil and groundwater are trichloroethene (TCE), tetrachloroethene (PCE), and cis-1,2-dichloroethene (cis-1,2-DCE), trichlorofluoromethane (Freon 11), 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113), and toluene. Concentrations of volatile organic compounds (VOCs) range from non-detect up to 34,000 micrograms per liter ($\mu\text{g}/\text{l}$) TCE, up to 503 $\mu\text{g}/\text{l}$ PCE, up to 1,210 $\mu\text{g}/\text{l}$ cis-1,2-DCE, up to 1,700 $\mu\text{g}/\text{l}$ Freon 11, up to 33 $\mu\text{g}/\text{l}$ Freon 113, and up to 66 $\mu\text{g}/\text{l}$ toluene. Three relatively discrete plumes have been identified on site; a plume is present beneath each of the former Parcels 1, 2, and 3 (see Figure 2).
7. The Discharger has implemented various soil and groundwater remedial programs. In 2003, a detailed and comprehensive Regional Board-approved review and evaluation program was performed by Haley & Aldrich, Inc. to identify historical Environmental Features (EFs) at the Site. A total of 85 identified potential EFs were assessed through an extensive soil assessment and delineation investigation. The assessment program identified 32 locations with elevated concentrations of VOCs and metals in the shallow soil. Soil from these 32 locations were excavated and removed. In addition, a post-demolition assessment confirmation and monitoring program identified eight EFs that were investigated and removed. Following excavation, post-remediation sampling confirmed that the impacts were removed and remediation of the shallow soil was complete. Upon completion of the remediation program, a total of 11,800 cubic yards of soil was excavated and disposed of off-site to the following locations; Lancaster Landfill in San Bernadino County, California, Apple Valley Landfill in Palmdale, California and McKittrick Landfill in McKittrick, California. The Regional Board issued an unrestricted no further action for the shallow soil (0 to 12 feet below ground surface) at the Site on December 12, 2003.
8. The Discharger installed a soil vapor extraction remediation system (VES) at 157 E. Stanley (former Parcel 3) to reduce the concentration and mass of VOCs in the deep soil (greater than 12 feet bgs). The Discharger submitted a "Soil Vapor Extraction Extended Pilot Test Work Plan" (Extended VES Work Plan) prepared by Haley & Aldrich. The Regional Board approved the Extended VES Work Plan in a letter dated December 20, 2002. Operation of the VES removed approximately 71 pounds of VOCs from deep soils and VOC concentrations decreased significantly during VES operation (as reported in confirmation soil samples). The Regional Board issued a no further action for the deep soil (12 to 65 feet below ground surface) at 157 E. Stanley (former Parcel 3) on January 24, 2005.
9. There are thirteen water supply wells located within an approximate 1 mile radius of the Site (Figure 3). Three of the wells were identified as City of Compton wells, seven are Dominguez Water Corporation wells, two are Southern California Edison wells, and one is a Dominguez Memorial Seminary well. Available well construction information indicates that the depths to the tops of the screened intervals for these wells range from approximately 256 to 554 feet and are located in the

WASTE DISCHARGE REQUIREMENTS NO. R4-2005-0068

FILE NO. 96-056 and 96-057

The Boeing Company

Former Compton Site

deep aquifer system. The water supply well closest to the site is Compton Well No. 14 with the top of the screened interval at a depth of 436 feet, but this well is not currently an active water supply well. VOCs have not been detected in this well.

10. The Discharger proposes to remediate VOCs in shallow groundwater (Bellflower Aquitard) at the Site using carbon source amendments (i.e. lactate, edible oils, ethanol, etc.) and KB-1. A pilot test remediation work plan (identified below) involving the use of carbon source amendments and KB-1 has been submitted by the Discharger and approved by the Executive Officer on February 26, 2003. The carbon sources are all approved for use under Regional Board Order No. R4-2002-0030 "General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel and/or Volatile Organic Compound Impacted Sites" (General WDR). This Site-Specific WDR will also cover the use of carbon sources, therefore, once this permit is adopted a letter rescinding the General WDR will be issued. KB-1 requires a carbon source amendment (food), VOCs, and anaerobic conditions to survive. Given these growth requirements, KB-1 will not survive indefinitely after the residual carbon sources have been consumed or the VOCs have been depleted following the last delivery of carbon source amendment.
11. The Discharger submitted a "Former Compton Site In-Situ Reactive Zone Pilot Test Workplan" (Arcadis Workplan) prepared by Arcadis dated February 3, 2003. The Arcadis Work Plan was approved by the Executive Officer on February 26, 2003. The Arcadis Work Plan presents the rationale and procedures for pilot-scale implementation of enhanced in-situ bioremediation at the subject treatment area at the Site. The Discharger proposes to conduct a pilot study in order to evaluate the effectiveness of in-situ remediation of dissolved chlorinated volatile organic compounds, primarily TCE, in the groundwater beneath the site. The pilot study is proposed to be conducted by introducing a solution of selected amendments, including sodium lactate, soybean oil, ethanol, and acetate, (amendments specified in the General WDR Permit package) and KB-1. The combination of amendments and KB-1 will henceforth be referred to as the Solution. The Solution will be injected through permanently installed wells to evaluate the effectiveness of delivery and biologic reduction of chlorinated VOCs. The composition of the Solution was chosen to reduce dissolved TCE to ethene. The results of the pilot study will be evaluated in accordance with the monitoring and reporting schedule presented in the approved Arcadis Work Plan.
12. The Arcadis Work Plan presents the procedures for monitoring the remediation program, evaluating the injection volume and concentrations, and the frequency of injection will be adjusted based on the results of field monitoring. Groundwater conditions will be monitored during the operation to evaluate the efficiency of the injection.
13. The Discharger submitted a "General Waste Discharge Requirements (WDR) Permit Application, Enhanced In-Situ Bioremediation, The Boeing Company, Former Compton Site, Compton, CA" on 1 April 2003 and "Addendum No. 1 to the Application" on June 5, 2003 to inject a carbohydrate solution into groundwater at the Site for use in in-situ bioremediation pilot tests to address the VOCs in the groundwater. It was determined on July 22, 2003 by the Regional Board staff and the Executive Officer that the proposed discharge meets the conditions specified in Regional Board Order No. R4-2002-0030.
14. The Discharger submitted a "Former Boeing Compton Site, General Waste Discharge Requirements Schedule Update and New Property Owner Notification" letter prepared by Haley & Aldrich, Inc. dated March 1, 2004. In this document, the Discharger requested an extension of the WDR schedule

WASTE DISCHARGE REQUIREMENTS NO. R4-2005-0068

FILE NO. 96-056 and 96-057

The Boeing Company

Former Compton Site

due to redevelopment of the Site. The Discharger proposed to submit a revised sampling and reporting schedule to the Regional Board by October 31, 2004. The Regional Board granted an extension to the schedule in a letter dated March 9, 2004.

15. The Discharger submitted a "Proposed Modifications to General Waste Discharge Requirements Permit Order No. R4-2002-0030 (Series No. 24) and Monitoring and Reporting Program No. CI-8586" (Workplan Modification) prepared by Geosyntec Consultants dated September 29, 2004. In this document, the Discharger proposed to use emulsified soybean oil (in addition to the molasses that was previously approved), request modification of the existing monitoring and reporting program, conduct a pre-injection biofoul test at four injection wells prior to full scale operation, and test biofouling control agents. The proposal was approved by the Executive Officer in a letter dated December 24, 2004.
16. Groundwater will be treated using enhanced in-situ bioremediation as presented in the Arcadis Workplan and the Workplan Modification. An amendment solution will be injected into three areas within the Site presented in the remediation work plan where it will promote biological reduction of TCE to ethene as groundwater flows through the amendment area. The Discharger proposes to include control measures for source area remediation. The control measures related to amendment solution without the addition of KB-1 were presented as part of the General WDR permit application package and will continue to be used throughout this project. The control measures related to KB-1 would be implemented if carbon source amendment and Dehalococcoides ethenogenes (DHE) associated with the KB-1 culture were detected in monitoring points outside the treatment zone. This control measure would involve stopping further addition of amendments to the groundwater. 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 and anaerobic conditions. The contingency plan, should indications of offsite migration occur, is the installation of a hydraulic containment system. The slow rate of groundwater flow within and down gradient of the pilot test areas allows for sufficient time to complete design, installation, and implementation of a hydraulic containment system if necessary.
17. Any injection of a solution into the groundwater is a discharge of waste as defined by the California Water Code. However, the discharge of carbohydrate solution with chlorinated-ethene degrading consortium KB-1 is intended to provide more effective remediation of chlorinated VOC-impacted groundwater and is expected to significantly reduce the anticipated site cleanup time as compared to pump-and-treat technology or enhanced in-situ bioremediation without addition of KB-1.
18. The application of carbon source amendments independent of the addition of KB-1 to groundwater may result in temporary adverse impacts to groundwater quality, but impacts that may result will be localized, and of short-term duration, and will not impact any existing or prospective uses of groundwater. The addition of a carbohydrate solution with KB-1 will improve groundwater conditions by ensuring complete degradation of TCE to ethene.
19. On January 24, 2002, this Regional Board adopted General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel and/or Volatile Organic Compound Impacted Sites (Order No. R4-2002-0030). This Order permits the injection of selected carbon source amendments (i.e. lactate, edible oils, ethanol, etc.) proposed for use at this Site. On July 22, 2003, the Discharger was granted coverage under the General WDR and issued Monitoring and

WASTE DISCHARGE REQUIREMENTS NO. R4-2005-0068

FILE NO. 96-056 and 96-057

The Boeing Company

Former Compton Site

Reporting Program No. CI-8586 for the injection of carbon source amendments. The General WDR does not cover the use of KB-1, therefore, these site-specific waste discharge requirements have been developed for the addition of KB-1 at this Site and will also cover the injection of the carbohydrate solution currently covered under the existing General WDR, which will be rescinded once the Individual permit has been issued. Currently, the addition of KB-1 is proposed at three locations within the Site, and the Regional Board has already approved the remedial action work plans that describe this work. The Discharger shall submit remedial action work plans for the use of enhanced in-situ bioremediation with KB-1 at any other areas within the Site. Once work plans are reviewed and approved by the Regional Board's Executive Officer, the expanded use of enhanced in-situ bioremediation with KB-1 will be included under the coverage of these site-specific waste discharge requirements and the monitoring and reporting program will be modified as appropriate.

20. The Regional Board adopted a revised Water Quality Control Plan for the Los Angeles Region on June 13, 1994. The Plan contains beneficial uses and water quality objectives for the Central Groundwater Basin. The requirements contained in this Order, as they are met, will be in conformance with the goals of the Plan.
21. The beneficial uses for the Central Groundwater Basin are municipal and domestic water supply, industrial service and process supply, and agricultural supply.
22. The permitted discharge is consistent with the anti-degradation provisions of State Water Resources Control Board Resolution No. 68-16 (Anti-degradation Policy). 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. Moreover, any parameter change resulting from the discharge:
 - a. Will be consistent with maximum benefit to the people of the State.
 - b. Will not unreasonably affect present and anticipated beneficial uses of such water, and
 - c. Will not result in water quality less than that prescribed in the Water Quality Control Plan for Central Groundwater Basin.
23. The Regional Board has assumed lead agency role for this project under the California Environmental Quality Act (Public Resources Code section 21000 et seq.) and has conducted an Initial Study in accordance with section 15063 of the "State CEQA Guidelines" at California Code of Regulations, title 14, section 15000 et seq. Based upon the Initial Study, the Regional Board prepared a Mitigated Negative Declaration that the project, as mitigated, will not have a significant adverse effect on the environment.
24. The Regional Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written comments and recommendations. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge and to the tentative requirements.

WASTE DISCHARGE REQUIREMENTS NO. R4-2005-0068

FILE NO. 96-056 and 96-057

The Boeing Company

Former Compton Site

IT IS HEREBY ORDERED that The Boeing Company, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted there under, shall comply with the following:

A. Discharge Limits

1. The Discharger shall not cause the groundwater outside of the remediation area to exceed background concentrations of chloride and TDS established prior to start of remediation.
2. The discharge of carbohydrate solution with chlorinated-ethene degrading consortium, referred to as KB-1, into the groundwater shall be only performed while this Order is in force.
3. During this remediation, the injection volume carbohydrate solution shall not exceed 1.9 million gallons and the injection volume of KB-1 shall not exceed 150 gallons at the Site, unless approved by the Executive Officer.
4. Discharge duration shall not exceed more than two years, unless approved by the Executive Officer.
5. The amendment solution shall be limited to potable water, extracted groundwater, amendments specified in the approved remediation work plans as approved under the General WDR permit, and KB-1. The amendments will consist of a mixture of food-grade vegetable/soybean-lactate and water at a maximum concentration of up to 2% or molasses and water at a concentration of up to 20%. The maximum concentration of KB-1 shall not exceed 0.1% (by pore water volume of the treatment area).

B. Discharge Specifications

1. The Discharger shall stop further addition of amendments to the groundwater if carbon source amendment and *Dehalococcoides* associated with 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.
2. The Discharger shall not cause KB-1, the amendment, and the by-products of the bioremediation process to migrate outside of the treatment area established by the Discharger and approved by the Executive Officer.
3. The discharge of carbohydrate solution with KB-1 or any by-products into any surface water or surface water drainage course is prohibited.
4. The Discharger shall not cause the groundwater to contain taste or odor producing substances in concentrations that cause nuisance or adversely affect beneficial uses outside the treatment area.
5. The Discharger shall not cause the groundwater to contain concentrations of chemical substances or its by-products, including KB-1 solution in amounts that adversely affect any designated beneficial use as a result of the injection of solution.

WASTE DISCHARGE REQUIREMENTS NO. R4-2005-0068

FILE NO. 96-056 and 96-057

The Boeing Company

Former Compton Site

6. The Discharger shall implement hydraulic control to prevent off-site migration if necessary.

C. Provisions:

1. This Order includes the attached "Standard Provisions Applicable to Waste Discharge Requirements," which are incorporated herein by reference. If there is any conflict between provisions stated herein before and the attached "Standard Provisions," those provisions stated herein shall prevail.
2. Discharge of wastes to any point other than specifically described in this Order is prohibited and constitutes a violation thereof.
3. In the event of any change in name, ownership, or control of the Site, the Discharger shall notify this Regional Board in writing and shall notify any succeeding owner or operator of the existence of this Order by a letter, a copy of which shall be forwarded to this Regional Board.
4. A copy of these requirements shall be maintained at an on-site office and be available at all times to operating personnel.
5. In accordance with section 13260 of the Water Code, the Discharger shall file a report of any material change or proposed change in the character, location or volume of discharge.
6. The Discharger shall notify Regional Board immediately by telephone of any adverse condition resulting from this discharge or from operations producing this waste discharge, such notifications to be affirmed in writing within one week from the date of such occurrence.
7. This Regional Board considers the property operator and owner to have continuing responsibility of correcting any problem that may arise in the future as a result of this discharge.
8. All work must be performed by or under the direction of a registered civil engineer, registered geologist, or certified engineering geologist. A statement is required in all technical reports that the registered professional in direct responsible charge actually supervised or personally conducted all the work associated with the project.
9. The use of a carbohydrate solution with KB-1 solution shall not cause a condition of pollution or nuisance as defined by California Water Code, section 13050.
10. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports as specified in the attached Monitoring and Reporting Program No. CI-8974. Violations of any conditions may result in enforcement action, including Regional Board or Court Order requiring corrective action or imposition of civil monetary liability, or revision, or rescission of the Order.
11. This Order does not exempt the Discharger from compliance with any other laws, regulations, or ordinances, which may be applicable. This Order does not legalize the waste treatment Site, and leaves unaffected any further restraints on the Site that may be contained in other statutes or required by other agencies.

WASTE DISCHARGE REQUIREMENTS NO. R4-2005-0068

FILE NO. 96-056 and 96-057

The Boeing Company

Former Compton Site

12. The Discharger shall cleanup and abate the effects of injecting amendment solution as specified in the General WDR permit, including extraction of any by-products which adversely affect beneficial uses, and shall provide an alternate water supply source for municipal, domestic or other water use wells that become contaminated in exceedance of water quality objectives as a result of using the solution.
13. In accordance with section 13263 of the California Water Code, these requirements are subject to periodic review and revision by this Regional Board.
14. After notice and opportunity for a hearing, this Order may be terminated or modified for cause including, but not limited to:
 - a. Violation of any term or condition contained in this Order.
 - b. Obtaining this Order by misrepresentation, or failure to disclose all relevant facts.
 - c. A change in any condition that requires either a temporary or permanent reduction or elimination of authorized discharge.
15. The Regional Board, through its Executive Officer, will modify the Monitoring and Reporting Program, as necessary. The California Environmental Quality Act (CEQA) initial study and associated public comment were conducted once as part of the Waste Discharge Requirement (WDR) permit application process and will not be required for the expansion or modification of this remediation program.

D. Expiration Date

This Order expires on October 6, 2010.

The Discharger must file a Report of Waste Discharge in accordance with title 27, California Code of Regulations, not later than 180 days in advance of such date as application for issuance of new waste discharge requirements.

I, Jonathan Bishop, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region on October 6, 2005.



Jonathan Bishop
Executive Officer

STANDARD PROVISIONS
APPLICABLE TO WASTE DISCHARGE REQUIREMENTS

1. DUTY TO COMPLY

The discharger must comply with all conditions of these waste discharge requirements. A responsible party has been designated in the Order for this project, and is legally bound to maintain the monitoring program and permit. Violations may result in enforcement actions, including Regional Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Regional Board. [CWC Section 13261, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350]

2. GENERAL PROHIBITION

Neither the treatment nor the discharge of waste shall create a pollution, contamination or nuisance, as defined by Section 13050 of the California Water Code (CWC). [H&S Section 5411, CWC Section 13263]

3. AVAILABILITY

A copy of these waste discharge requirements shall be maintained at the discharge facility and be available at all times to operating personnel. [CWC Section 13263]

4. CHANGE IN OWNERSHIP

The discharger must notify the Executive Officer, in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger. The notice must include a written agreement between the existing and new discharger containing a specific date for the transfer of this Order's responsibility and coverage between the current discharger and the new discharger. This agreement shall include an acknowledgement that the existing discharger is liable for violations up to the transfer date and that the new discharger is liable from the transfer date on. [CWC Sections 13267 and 13263]

5. CHANGE IN DISCHARGE

In the event of a material change in the character, location, or volume of a discharge, the discharger shall file with this Regional Board a new Report of Waste Discharge. [CWC Section 13260(c)]. A material change includes, but is not limited to, the following:

- (a) Addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the Waste.

Standard Provisions Applicable to
Waste Discharge Requirements

- (b) Significant change in disposal method, e.g., change from a land disposal to a direct discharge to water, or change in the method of treatment which would significantly alter the characteristics of the waste.
- (c) Significant change in the disposal area, e.g., moving the discharge to another drainage area, to a different water body, or to a disposal area significantly removed from the original area potentially causing different water quality or nuisance problems.
- (d) Increase in flow beyond that specified in the waste discharge requirements.
- (e) Increase in area or depth to be used for solid waste disposal beyond that specified in the waste discharge requirements. [CCR Title 23 Section 2210]

6. REVISION

These waste discharge requirements are subject to review and revision by the Regional Board. [CCR Section 13263]

7. TERMINATION

Where the discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Regional Board, it shall promptly submit such facts or information. [CWC Sections 13260 and 13267]

8. VESTED RIGHTS

This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the discharger from his liability under Federal, State or local laws, nor do they create a vested right for the discharger to continue the waste discharge. [CWC Section 13263(g)]

9. SEVERABILITY

Provisions of these waste discharge requirements are severable. If any provision of these requirements are found invalid, the remainder of these requirements shall not be affected. [CWC Section 92f]

Standard Provisions Applicable to
Waste Discharge Requirements

10. OPERATION AND MAINTENANCE

The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Order. [CWC Section 13263(f)]

11. HAZARDOUS RELEASES

Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State toxic disaster contingency plan adopted pursuant to Article 3.7 (commencing with Section 8574.7) of Chapter 7 of Division 1 of Title 2 of the Government Code, and immediately notify the State Board or the appropriate Regional Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of Section 13271 of the Water Code unless the discharger is in violation of a prohibition in the applicable Water Quality Control plan. [CWC Section 13271(a)]

12. PETROLEUM RELEASES

Except for a discharge which is in compliance with these waste discharge requirements, any person who without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) such person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State oil spill contingency plan adopted pursuant to Article 3.5 (commencing with Section 8574.1) of Chapter 7 of Division 1 of Title 2 of the Government Code. This provision does not require reporting of any discharge of less than 42 gallons unless the discharge is also required to be reported pursuant to Section 311 of the Clean Water Act or the discharge is in violation of a prohibition in the applicable Water Quality Control Plan. [CWC Section 13272]

Standard Provisions Applicable to
Waste Discharge Requirements

13. ENTRY AND INSPECTION

The discharger shall allow the Regional Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

- (a) Enter upon the discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;
- (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
- (d) Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order, or as otherwise authorized by the California Water Code, any substances or parameters at any location. [CWC Section 13267]

14. MONITORING PROGRAM AND DEVICES

The discharger shall furnish, under penalty of perjury, technical monitoring program reports; such reports shall be submitted in accordance with specifications prepared by the Executive Officer, which specifications are subject to periodic revisions as may be warranted. [CWC Section 13267]

All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices. Annually, the discharger shall submit to the Executive Officer a written statement, signed by a registered professional engineer, certifying that all flow measurement devices have been calibrated and will reliably achieve the accuracy required.

Unless otherwise permitted by the Regional Board Executive officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. The Regional Board Executive Officer may allow use of an uncertified laboratory under exceptional circumstances, such as when the closest laboratory to the monitoring location is outside the State boundaries and therefore not subject to certification. All analyses shall be required to be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" [40 CFR Part 136] promulgated by the U.S. Environmental Protection Agency. [CCR Title 23, Section 2230]

Standard Provisions Applicable to
Waste Discharge Requirements

15. TREATMENT FAILURE

In an enforcement action, it shall not be a defense for the discharger that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the discharger shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost. [CWC Section 13263(f)]

16. DISCHARGES TO NAVIGABLE WATERS

Any person discharging or proposing to discharge to navigable waters from a point source (except for discharge of dredged or fill material subject to Section 404 of the Clean Water Act and discharge subject to a general NPDES permit) must file an NPDES permit application with the Regional Board. [CCR Title 2 Section 22357]

17. ENDANGERMENT TO HEALTH AND ENVIRONMENT

The discharger shall report any noncompliance which may endanger health or the environment. Any such information shall be provided verbally to the Executive Officer within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. The following occurrence(s) must be reported to the Executive Officer within 24 hours:

- (a) Any bypass from any portion of the treatment facility.
- (b) Any discharge of treated or untreated wastewater resulting from sewer line breaks, obstruction, surcharge or any other circumstances.
- (c) Any treatment plant upset which causes the effluent limitation of this Order to be exceeded. [CWC Sections 13263 and 13267]

18. MAINTENANCE OF RECORDS

The discharger shall retain records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used

Standard Provisions Applicable to
Waste Discharge Requirements

to complete the application for this Order. Records shall be maintained for a minimum of three years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer.

Records of monitoring information shall include:

- (a) The date, exact place, and time of sampling or measurements;
 - (b) The individual(s) who performed the sampling or measurements;
 - (c) The date(s) analyses were performed;
 - (d) The individual(s) who performed the analyses;
 - (e) The analytical techniques or method used; and
 - (f) The results of such analyses.
19. (a) All application reports or information to be submitted to the Executive Officer shall be signed and certified as follows:
- (1) For a corporation -- by a principal executive officer or at least the level of vice president.
 - (2) For a partnership or sole proprietorship -- by a general partner or the proprietor, respectively.
 - (3) For a municipality, state, federal, or other public agency -- by either a principal executive officer or ranking elected official.
- (b) A duly authorized representative of a person designated in paragraph (a) of this provision may sign documents if:
- (1) The authorization is made in writing by a person described in paragraph (a) of this provision.
 - (2) The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity; and
 - (3) The written authorization is submitted to the Executive Officer.

Any person signing a document under this Section shall make the following certification:

Standard Provisions Applicable to
Waste Discharge Requirements

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. [CWC Sections 13263, 13267, and 13268]"

20. OPERATOR CERTIFICATION

Supervisors and operators of municipal wastewater treatment plants and privately owned facilities regulated by the PUC, used in the treatment or reclamation of sewage and industrial waste shall possess a certificate of appropriate grade in accordance with Title 23, California Code of Regulations Section 3680. State Boards may accept experience in lieu of qualification training. In lieu of a properly certified wastewater treatment plant operator, the State Board may approve use of a water treatment plant operator of appropriate grade certified by the State Department of Health Services where reclamation is involved.

Each plant shall be operated and maintained in accordance with the operation and maintenance manual prepared by the municipality through the Clean Water Grant Program. [CWC Title 23, Section 2233(d)]

ADDITIONAL PROVISIONS APPLICABLE TO
PUBLICLY OWNED TREATMENT WORKS' ADEQUATE CAPACITY

21. Whenever a publicly owned wastewater treatment plant will reach capacity within four years the discharger shall notify the Regional Board. A copy of such notification shall be sent to appropriate local elected officials, local permitting agencies and the press. The discharger must demonstrate that adequate steps are being taken to address the capacity problem. The discharger shall submit a technical report to the Regional Board showing flow volumes will be prevented from exceeding capacity, or how capacity will be increased, within 120 days after providing notification to the Regional Board, or within 120 days after receipt of notification from the Regional Board, of a finding that the treatment plant will reach capacity within four years. The time for filing the required technical report may be extended by the Regional Board. An extension of 30 days may be granted by the Executive Officer, and longer extensions may be granted by the Regional Board itself. [CCR Title 23, Section 2232]

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

MONITORING AND REPORTING PROGRAM NO. CI-8974

FOR
THE BOEING COMPANY
FORMER BOEING COMPTON SITE

FILE NOS. 96-056 AND 96-057

The Discharger shall implement this monitoring and reporting program on the effective date of this Order.

I. GROUNDWATER MONITORING PROGRAM

It is anticipated that the pilot test will be initiated in the third quarter of 2005. The following groundwater wells and amendment points will be included in the sampling program:

Group A: AW0003, AW0008, and AW0034
Group B1: MW0026, MW-16, MW0027, MW0028, and MW0029
Group B2: MW-7, TW-5, TW-1, and MW0037
Group C: TW-6,
Group D: MW-3, TW-12, TW-14

Figure 1 shows the location of the Site. Groundwater well and amendment point locations at the Site are shown in (Figures 4, 5 and 6). Group A sampling points are amendment points. The Group B points are monitoring wells within each treatment area. Group B1 wells consist of monitoring wells that are located in close proximity to oil distribution zones, and will be used to evaluate oil consumption and distribution. Group B2 wells are monitoring wells located somewhat farther from the amendment wells but within the treatment area; they will be used to evaluate the effectiveness of the biologically active zones over time. All Group A and B wells will be used for performance monitoring purposes. The Group C sampling point is a downgradient sample location, and Group D are upgradient sample points.

Baseline sampling will take place prior to injection. Upon completion of the injection of the emulsified oil, samples will be taken from Group A and Group B1 monitoring wells (Figures 4, 5 and 6) and will be analyzed for field parameters (oxidation-reduction potential, dissolved oxygen, pH, specific conductance, temperature, turbidity and groundwater elevation), chlorinated volatile organic compounds (VOCs), total organic carbon (TOC) and volatile fatty acids (VFAs) for process monitoring purposes and to provide post-injection baselines.

The required constituents to be analyzed and the monitoring schedule for each sample group for the 3-year pilot test are shown below.

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Total Daily Injections	Liters	Measurement	Per injection
Groundwater Elevation	Feet below ground surface (bgs)	In situ	Group A: Baseline, post oil injection and quarterly Group B1: Baseline, post oil injection and quarterly Group B2: Baseline and quarterly Group C: Baseline and quarterly Group D: Baseline and quarterly Group A-D: Semi-annually after four quarters
Dissolved Oxygen	mg/l	Grab	Group A: Baseline, post oil injection and quarterly Group B1: Baseline, post oil injection and quarterly Group B2: Baseline and quarterly Group C: Baseline and quarterly Group D: Baseline and quarterly Group A-D: Semi-annually after four quarters
Oxidation-Reduction Potential	Millivolts	Grab	Group A: Baseline, post oil injection and quarterly Group B1: Baseline, post oil injection and quarterly Group B2: Baseline and quarterly Group C: Baseline and quarterly Group D: Baseline and quarterly Group A-D: Semi-annually after four quarters
PH	pH units	Grab	Group A: Baseline, post oil injection and quarterly Group B1: Baseline, post oil injection and quarterly Group B2: Baseline and quarterly Group C: Baseline and quarterly Group D: Baseline and quarterly Group A-D: Semi-annually after four quarters
Temperature	Degrees C	Grab	Group A: Baseline, post oil injection and quarterly Group B1: Baseline, post oil injection and quarterly Group B2: Baseline and quarterly Group C: Baseline and quarterly Group D: Baseline and quarterly Group A-D: Semi-annually after four quarters
Specific Conductance	µS/cm	Grab	Group A: Baseline, post oil injection and quarterly Group B1: Baseline, post oil injection and quarterly Group B2: Baseline and quarterly Group C: Baseline and quarterly Group D: Baseline and quarterly Group A-D: Semi-annually after four quarters
Turbidity	NTU	Grab	Group A: Baseline, post oil injection and quarterly Group B1: Baseline, post oil injection and quarterly Group B2: Baseline and quarterly Group C: Baseline and quarterly Group D: Baseline and quarterly Group A-D: Semi-annually after four quarters
Chlorinated Volatile Organic Compounds (EPA Method 8260B)	µg/l	Grab	Group A: Baseline, post oil injection and quarterly Group B1: Baseline, post oil injection and quarterly Group B2: Baseline and quarterly Group C: Baseline and quarterly Group D: Baseline and quarterly Group A-D: Semi-annually after four quarters
Total Organic Carbon (EPA Method 9060 Modified) and Volatile Fatty Acids	mg/l	Grab	Group A: Baseline, post oil injection and quarterly Group B1: Baseline, post oil injection and quarterly Group B2: Baseline and semi-annually Group C: Baseline and semi-annually Group D: Baseline and semi-annually
<i>Dehalococcoides</i> PCR	presence or absence	Grab	Group A: Baseline and semi-annually Group B1: Baseline and semi-annually Group B2: Baseline and semi-annually Group C: Baseline and semi-annually Group D: Baseline and semi-annually

Dissolved Metals (Manganese, Iron and Arsenic) and Anions (sulfate, nitrate, nitrite and chloride) and Total Sulfides	mg/l	Grab	Group A: Baseline and semi-annually Group B1: Baseline and semi-annually Group B2: Baseline and semi-annually Group C: Baseline and semi-annually Group D: Baseline and semi-annually
Dissolved Hydrocarbon Gases (ethane, ethane, and methane)	mg/l	Grab	Group A: Baseline and quarterly Group B1: Baseline and quarterly Group B2: Baseline and quarterly Group C: Baseline and quarterly Group D: Baseline and quarterly Group A-D: Semi-annually after four quarters

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

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

II. AMENDMENT INJECTION MONITORING REQUIREMENTS

The reports shall contain the following information regarding injection activities:

1. Depth of injection points;
2. Quantity of amendment injected and dates injected; and
3. Total amount of amendment injected.

III. REPORTING REQUIREMENTS

The first monitoring report under this Program is due by 28 February 2006. This monitoring and reporting program supercedes previous requirements stated in work plan approval letters.

The Discharger is required to submit a preliminary report including baseline and oil injection data, plus quarterly reports for the first 4 quarters. Subsequently, semi-annual monitoring reports will be submitted for each additional year (two years estimated). The groundwater monitoring wells and amendment points will be gauged and sampled, and results will be reported to the Regional Water Quality Control Board (Regional Board) under the Monitoring and Reporting Program for the General Waste Discharge Requirements according to the following schedule:

Reporting Period	Sampling Month(s)	Report Due Date
September – February 2005 (Baseline and Post-Injection)	September-October 2005 (December 2005-January 2006)	February 28, 2006
March-May 2006	March 2006	June 30, 2006
June-August 2006	June 2006	September 29, 2006
September-November 2006	September 2006	December 31, 2006
December 2006-February 2007	December 2006	March 30, 2007
March-August 2007	June 2007*	September 28, 2007
September 2007-February 2008	December 2007	March 31, 2008
March 2008-August 2008	June 2008	September 30, 2008
September 2008-February 2009	December 2008	March 31, 2009

* Semi-annual sampling begins

The Discharger shall submit Reports detailing the results of the remediation. The reports should include an evaluation of the effectiveness of using the amendment and KB-1™ solution to remediate VOC-contaminated groundwater at the Site, the impact of any by-products on the receiving groundwater quality, and any other effects the *in situ* treatment may have. The Discharger is required to submit the following reports pursuant to their respective due dates:

Report	Due Dates
Preliminary Report	February 28, 2006
Final Report	June 30, 2009

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.

Whenever wastes associated with the discharge under this Order, are transported to a different disposal site, the following shall be reported in the monitoring report: type and quantity of wastes; name and address of the hauler (or method of transport if other than by hauling); and location of the final point(s) of disposal.

IV. 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)"

V. 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.

These records and reports are public documents and shall be made available for inspection during normal business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region.

Ordered by:



Executive Officer

Date: 12/19/05