



# California Regional Water Quality Control Board

## Los Angeles Region



Alan C. Lloyd, Ph.D.  
Agency Secretary

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

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Arnold Schwarzenegger  
Governor

March 9, 2005

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED  
CLAIM NO. 7003 3110 0003 3258 3939

Ms. Elizabeth Brown  
Northrop Grumman Systems Corporation  
1840 Century Park East  
Los Angeles, CA 90067

Dear Ms. Brown:

**GENERAL WASTE DISCHARGE REQUIREMENTS FOR CARBOHYDRATE SOLUTION AND SODIUM BICARBONATE BUFFER SOLUTION INJECTIONS AT PETROLEUM HYDROCARBON FUEL AND/OR VOLATILE ORGANIC COMPOUND IMPACTED SITES – FORMER NORTHROP GRUMMAN NEWBURY PARK SITE (PILOT PROJECT), 1515 RANCHO CONEJO BLVD, NEWBURY PARK, CALIFORNIA (FILE NO. 94-18, CI NO. 8865)**

We have completed our review of your application for coverage under General Waste Discharge Requirements for the injection of carbohydrate solution and sodium bicarbonate buffer solution at the site referenced above in Newbury Park, California.

Northrop Grumman Systems Corporation (hereinafter Discharger) is conducting the groundwater cleanup activities at a former facility commonly known as the Northrop Grumman Newbury Park Site (Site) located at 1515 Rancho Conejo Boulevard in Newbury Park, California (Figure 1) (Latitude: 118° 55' 41", Longitude: 34° 12' 01"). DFC Investments, Inc., c/o Amgen Inc. owns the land. The Site, encompassing approximately 100 acres, was formerly used by the Discharger for manufacturing aircraft subassemblies. The manufacturing plant was built in the 1960s in the southern 48 acres of the site. The northern 52 acres were undeveloped. The industrial activities at the Site included the use of a variety of products such as fuels (including gasoline, diesel, and jet fuel), solvents including 1,1,1-trichloroethane (TCA) and tetrachloroethene (PCE), and hydraulic oil. Site investigations indicate that soil and groundwater have been contaminated with volatile organic compounds (VOCs). The VOCs identified in the groundwater include trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethane (1,1-DCA), and tetrachloroethene (PCE). Groundwater VOCs concentrations ranged from non-detect to 6,100 micrograms per liter ( $\mu\text{g/L}$ ) of TCE, to 200  $\mu\text{g/L}$  of 1,1-DCA, to 62  $\mu\text{g/L}$  of 1,1,1-TCA, to 140  $\mu\text{g/L}$  of PCE, to 170  $\mu\text{g/L}$  of 1,1-DCE, and to 450  $\mu\text{g/L}$  of 1,2-DCE.

Four hydrogeologic zones have been identified beneath the site. Unconfined groundwater occurs at depth ranging from 35 and 60 feet below ground surface (bgs) in the upper groundwater unit (Zone A). In this unit the groundwater flow direction is to the west-northwest in the western portion of the site and towards to the northwest in the northern portion of the site. Semi-confined to confined groundwater occurs within localized, thin, water bearing lenses at depths ranging from approximately 100 to 140 feet bgs (Zone B). In Zone B the groundwater flow direction has been reported as flowing towards the west. Confined groundwater has been reported in Zone C at depth ranging from approximately 150 to 200 feet bgs. In Zone C the

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groundwater flow toward the north-northeast with a high hydraulic gradient of approximately 150 to 200 feet per mile. At this zone the groundwater flow direction appears to be partially controlled by the underlying bedrock. Zone D underlies Zone C. Confined groundwater is found in fractures, seams, or vesicles of the bedrock and generally flow toward the north. There appear to be hydraulic communication between Zone C and D.

On November 23, 2004, Regional Board staff of the Site Cleanup I Unit approved the In-Situ Reactive Zone Pilot project in the North area of the Site. In the proposed Remediation Action Plan (RAP), the Discharger proposes to inject/infiltrate carbohydrate (cheese whey and water) solution into the confined groundwater zone (bottom of Zone B/top of Zone C) through well IRZ-I2 at a depth ranging from 125 feet to 145 feet bgs. The carbohydrate solution will be injected under pressure via a manifold with a flow rate meter and ball valve connected to quick connect/disconnect feeder lines.

The Discharger proposes to inject the carbohydrate solution into well IRZ-I2 at a depth ranging from 125 feet to 145 feet (Top Zone C) during six separate injection events. Initially, the carbohydrate solution will be injected into well IRZ-I2 once a month for three months. To maintain a reducing environment, the solution will subsequently be injected every two months over the next six months. Approximately 1,200 gallons of carbohydrate solution consisting of cheese whey and water will be injected into the well.

Potassium bromide (tracer) solution at 500 mg/L will be added to the carbohydrate solution that will be injected from the proposed confined groundwater well (IRZ-I2) during the first injection event. The potassium bromide will be used to evaluate the diffusion of the carbohydrate solution during the pilot test. To maintain neutral pH in groundwater, a buffering agent (sodium bicarbonate) will also be added.

Any potential adverse water quality impacts that may result shall be localized, of short-term duration, and shall not impact any existing or prospective uses of groundwater.

Regional Board staff 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 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. 058) and Monitoring and Reporting Program No. CI-8865 and Standard Provisions.

The Monitoring and Reporting Program requires you to implement the monitoring program on the effective date of this enrollment (March 9, 2005) 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, please include a reference to Compliance File No. CI-8865, which will assure that the reports

Ms. Elizabeth Brown  
Northrop Grumman Systems Corporation  
(Former Northrop Grumman Newbury Park Site)

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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 questions, please contact Mr. Orlando H. Gonzalez at (213) 620-2267 or Dr. Kwang Lee at (213) 620-2269.

Sincerely,

Jonathan S. Bishop  
Executive Officer

Enclosures: 1. Board Order No. R4-2002-0030  
2. Monitoring and Reporting Program No. CI-8865

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. Ted Johnson, Water Replenishment District of Southern California  
Mr. Mark Stewart, Central Basin Watermaster, California Department of Water Resources  
Mr. Michael T. Martin, Northrop Grumman Systems Corporation  
Mr. Steven R. Briggs, Vice President and Deputy, Air Combat Systems, Northrop Grumman Systems Corporation  
Mr. David Poley, project Scientist, ARCADIS  
Mr. James K. Nguyen, Project Manager, ARCADIS

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