California Regional Water Quality Control Board
Los Angeles Region

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

Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

September 30, 2011

Mr. Jerry Tucker
Pratt & Whitney-Rocketdyne
P.O. Box 7992
Canoga Park, CA 91303-7922

REVISED MONITORING AND REPORTING PROGRAM CI-9535 – PRATT & WHITNEY-ROCKETDYNE (FORMER BOEING CANOGA AVENUE FACILITY), 6633 CANOGA AVENUE, CANOGA PARK, CALIFORNIA (WDR NO. R4-2007-0019 SERIES NO. 119, MRP NO. CI-9535, FILE NO. 83-008, SCP NO. 0237A, SITE ID NO. 2040214)

Dear Mr. Tucker:

On August 31, 2009, Pratt & Whitney-Rocketdyne (Former Boeing Canoga Avenue Facility) was provided coverage under General Waste Discharge Requirements (WDR) No. R4-2007-0019, adopted by the Los Angeles Regional Water Quality Control Board (Regional Board) on March 1, 2007. The application of the proprietary mix HRC-Advanced (HRC-A)® as a pilot test for in-situ groundwater remediation was regulated under the WDR and its corresponding Monitoring and Reporting Program CI-9535.

On December 12, 2010, the Regional Board issued a letter suspending WDR sampling requirements after nine months pending injection of additional bioamendment as part of the approved full-scale groundwater remediation program.

On July 19, 2010, Haley & Aldrich, Inc. (Haley & Aldrich), on behalf of Pratt & Whitney-Rocketdyne, proposed to implement a groundwater remedial action which will consist of injecting HRC-A and Hydrogen Release Compound Primer (HRC Primer®) within locations identified as "hot spots" in the Upper, Intermediate, and Deep Sand Zones underlying the site. As a result, on July 15, 2011, you requested the current monitoring and reporting program (MRP) be modified to include this groundwater remedial action under the existing General WDR for the following reasons:

a. HRC-A and HRC Primer® application is covered under the General WDR (Order No. R4-2007-0019), which is the current permit in place for groundwater at this site.

b. The proposed groundwater remedial action will use the same remediation process as the pilot test but applied over a larger area of the site. The existing monitoring program was established and designed to monitor many indicators (such as contaminant mass reduction, carbon dioxide, total organic carbon, etc.) in wells located directly downgradient to evaluate the effectiveness of the pilot study. Since some monitoring locations are significant distances down gradient the travel times of the HRC-A will be significantly longer than those of the pilot test well locations. Further, treatment area is different and the pilot test data indicated that not as many indicators parameters tests are needed to

evaluate effectiveness for this phase. Therefore, a new monitoring program will be applied for this groundwater remedial action program.

You also requested that the current monitoring and reporting program (MRP) of the WDR be modified to include additional groundwater monitoring wells including: Upper Sand Zone wells: B-92U, PTW-2U; Intermediate Sand Zone wells: B-81I, B-82I, B-85I, B-87I, B-88I, B-90I, B-91I, B-92I, and B-98I; and Deep Sand Zone wells: B-81D, B-82D, B-85D, B-87D, B-88D, B-90D, B-91D, B-92D, and B-98D surrounding the injection area.

The revised MRP, which incorporates the requested modifications, is enclosed. All monitoring reports should be sent to the Regional Board, ATTN: Information Technology Unit. When submitting monitoring and technical reports to the Regional Board per these requirements, please include a reference to "Compliance File No. CI-9535", which will assure that the reports are directed to the appropriate file and staff. Also, please do not combine other reports with your WDR monitoring and reports. Submit each type of report as a separate document.

To avoid paying future annual fees, please submit a written request for termination of your enrollment under the general permit in a separate letter, when your project has been completed and the permit is no longer needed. Be aware that the annual fee covers the fiscal year billing period beginning July 1 and ending June 30, the following year. You will pay the full annual fee if your request for termination is made after the beginning of the new fiscal year.

In addition, you are required to comply with Electronic Submittal of Information (ESI) as specified in the June 20, 2011, letter (attached). You can also view the training video at **https://waterboards.webex.com/waterboards/ldr.php?AT=pb&SP=MC&rID=44145287&rKey=7dad4352c990334**

If you have any additional questions, please contact the Project Manager, Mr. David Koo at (213) 620-6155 or the Unit Chief of Groundwater Permitting, Dr. Eric Wu at (213) 576-6683 regarding this matter.

Sincerely,

Samuel Unger

Samuel Unger, P.E.
Executive Officer

Enclosures:

1. Monitoring and Reporting Program CI No. 9535 revised on September 28, 2011
2. June 20, 2011 ESI letter

cc: Ms. Ana Townsend, Regional Water Quality Control Board, Los Angeles
Mr. David Curnock, United Technologies
Mr. Thomas Tatnall, Haley & Aldrich, Inc.

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

MONITORING AND REPORTING PROGRAM NO. CI-9535
FOR
PRATT & WHITNEY-ROCKETDYNE
(FORMER BOEING CANOGA PARK FACILITY)
6633 CANOGA AVENUE
CANOGA PARK, CALIFORNIA

ORDER NO. R4-2007-0019 (Series No. 100)
FILE NO. 83-008, SCP NO. 0237A

I. MONITORING AND REPORTING REQUIREMENTS

A. Pratt & Whitney-Rocketdyne (hereinafter Discharger) shall implement this monitoring program on the effective date of the original enrollment (August 31, 2009) under Regional Board Order No. R4-2007-0019. Upon the initiation of monthly groundwater monitoring and sampling, the first monitoring report shall be submitted by the report date shown below depending on when in-situ injection and performance monitoring sampling for groundwater remediation begins. Subsequent monitoring reports shall be received at the Regional Board according to the following schedule:

Monitoring Period	Report Due
January – June[1]	July 31
July – December[1]	January 31
Annual Summary Report	June 30 of each year beginning in 2012

Note:
1) If sampling events for 1-month and 3-months post injection fall within date ranges, report will be submitted at due date, 6-month post injection and semi-annual events will be reported in Annual Summary Report in combination with Site-wide Annual Groundwater Monitoring Report.

B. 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 June 30 of each year, starting in 2012, the Discharger shall submit an annual summary report to the Regional Board. 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 (WDRs).

D. The Discharger shall comply with requirements contained in Section G. of Order No. R4-2007-0019 "*Monitoring and Reporting Requirements*" in addition to the aforementioned requirements.

II. DISCHARGE MONITORING

Prior to the start of the in-situ injection of Hydrogen Release Compound - Advanced (HRC-A) and Hydrogen Release Compound Primer (HRC Primer®), the Discharger shall sample for baseline groundwater parameters. Monitoring shall consist of samples collected from the following wells:

Group A (injection area wells):	B-81I, B-81D, B-90I, B-90D, B-91I, B-87I, B-87D
Group B (upgradient wells):	B-92U, B-92I, and B-93D
Group C (downgradient wells):	B-82I, B-85I, B-91D[1], B-88I, B-98I, B-98D, PTW-2U
Group D (far down gradient wells):	B-82D, B-85D
Group E (further down gradient well):	B-88D

Notes:
1) If no change is noted for B-91D, it will be eliminated from future sampling events.

Following the collection of baseline groundwater all these wells shall be monitored in accordance with the following discharge monitoring program:

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Total Daily Injection	liters/day	in situ	Daily during injection
Groundwater Elevation[1]	Feet, mean see level (msl) & below ground surface (bgs)	in situ	Group A, B & C: Baseline, one month after injection, three months after injection, and six months after injection, semi-annual thereafter. Group D: Baseline, three months after injection, six months after injection, semi-annual thereafter. Group E: Baseline, six months after injection, semi-annual thereafter.
pH	pH units	grab	Group A, B & C: Baseline, one month after injection, three months after injection, and six months after injection, semi-annual thereafter. Group D: Baseline, three months after injection, six months after injection, semi-annual thereafter. Group E: Baseline, six months after injection, semi-annual thereafter.

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Dissolved Oxygen	µg/l	grab	Group A, B & C: Baseline, one month after injection, three months after injection, and six months after injection, semi-annual thereafter. Group D: Baseline, three months after injection, six months after injection, semi-annual thereafter. Group E: Baseline, six months after injection, semi-annual thereafter.
Oxidation-reduction potential	Millivolts	grab	Group A, B & C: Baseline, one month after injection, three months after injection, and six months after injection, semi-annual thereafter. Group D: Baseline, three months after injection, six months after injection, semi-annual thereafter. Group E: Baseline, six months after injection, semi-annual thereafter.
Specific Conductivity	µmhos/cm	grab	Group A, B & C: Baseline, one month after injection, three months after injection, and six months after injection, semi-annual thereafter. Group D: Baseline, three months after injection, six months after injection, semi-annual thereafter. Group E: Baseline, six months after injection, semi-annual thereafter.
Temperature	°F	grab	Group A, B & C: Baseline, one month after injection, three months after injection, and six months after injection, semi-annual thereafter. Group D: Baseline, three months after injection, six months after injection, semi-annual thereafter. Group E: Baseline, six months after injection, semi-annual thereafter.
Turbidity	NTU	grab	Group A, B & C: Baseline, one month after injection, three months after injection, and six months after injection, semi-annual thereafter Group D: Baseline, three months after injection, six months after injection, semi-annual thereafter. Group E: Baseline, six months after injection, semi-annual thereafter.

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Major Anions (chloride, sulfate, nitrate) (EPA 300)*	µg/l	grab	Group A, B & C: Baseline, one month after injection, three months after injection, six months after injection, and semi-annual thereafter. Group D: Baseline, three months after injection, six months after injection, semi-annual thereafter Group E: Baseline, six months after injection, semi-annual thereafter. *Chloride only in baseline event.
Total Organic Carbon (EPA Method 9060 Modified)	µg/l	grab	Group A, B & C: One month after injection, three months after injection, and six months after injection, semi-annual thereafter. Group D: Three months after injection, six months after injection, semi-annual thereafter. Group E: Six months after injection, semi-annual thereafter.
Ferrous Iron (EPA SM-3500-Fe)	µg/L	grab	Group A, B & C: One month after injection, three months after injection, and six months after injection, semi-annual thereafter. Group D: Three months after injection, six months after injection, semi-annual thereafter. Group E: Six months after injection, semi-annual thereafter.
Total Iron (EPA 6010/236.1)	µg/L	grab	Group A, B & C: One month after injection, three months after injection, and six months after injection, semi-annual thereafter. Group D: Three months after injection, six months after injection, semi-annual thereafter. Group E: Six months after injection, semi-annual thereafter.
CO_2, CH_4, Ethane, Ethene* (RSK-175)	µg/L	grab	Group A, B & C: Baseline, one month after injection, three months after injection, and six months after injection, semi-annual thereafter. Group D: Baseline, three months after injection, six months after injection, semi-annual thereafter. Group E: Baseline, six months after injection, semi-annual thereafter. *Carbon Dioxide only in baseline event

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS
Metabolic Acids (HPLC/UV EPA M300)	µg/L	grab	Group A, B & C: One month after injection, three months after injection, and six months after injection, semi-annual thereafter. Group D: Three months after injection, six months after injection, semi-annual thereafter. Group E: Six months after injection, semi-annual thereafter.
Alkalinity (SM 2320B)	µg/L	grab	Group A, B & C: One month after injection, three months after injection, and six months after injection, semi-annual thereafter. Group D: Three months after injection, six months after injection, semi-annual thereafter. Group E: Six months after injection, semi-annual thereafter.
Volatile Organic Compounds (EPA Method 8260B)	µg/L	grab	Group A, B & C: Baseline, one month after injection, three months after injection, and six months after injection, semi-annual thereafter. Group D: Baseline, three months after injection, six months after injection, semi-annual thereafter. Group E: Baseline, six months after injection, semi-annual thereafter.

Footnotes:

1) Groundwater elevation data shall be collected from all monitoring wells listed above and from monitoring wells B-81U, B-82U, B-84U, B-85U, B-86U, B-87U, B-88U, B-89U, B-90U, B-91U, B-93U, B-99U, U-7, B-84D1, B-84D2, B-86D, B-89D, B-93D, and B-99D at the site during each monitoring event, and a groundwater potentiometric surface map created from the data shall be provided in the monitoring reports.

All groundwater monitoring reports must include, at a 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.

III. 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)"

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.

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.

V. PUBLIC DOCUMENTS

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.

VI. ELECTRONIC SUBMITTAL OF INFORMATION (ESI) TO GEOTRACKER

The Discharger shall submit all reports required under this Monitoring and Reporting Program, including groundwater monitoring data associated with the Waste Discharge Requirements, to the State Water Resources Control Board GeoTracker database, in addition to submitting hard copies to the Regional Board office. Once the Discharger demonstrates mastery of electronic submittal of reports to GeoTracker for the Site, it may request that the Regional Board waive the requirement of submitting hard copies of reports.

Ordered by: Samuel Unger

Samuel Unger, P.E.
Executive Officer

Date: September 30, 2011