May 3, 2019

Ms. Andrea Wing
Equilon Enterprises LLC
Shell Oil Products US
20945 South Wilmington Ave.
Carson, CA 90810

**GENERAL WASTE DISCHARGE REQUIREMENTS FOR IN-SITU GROUNDWATER REMEDIATION AT FORMER SHELL #204-4482-1209
5095 EAST PACIFIC COAST HIGHWAY, LONG BEACH (FILE NO. 908040107, GLOBAL ID NO. T0603701743, ORDER NO. R4-2014-0187, SERIES NO. 134, CI-10463)**

Dear Ms. Wing:

The Los Angeles Regional Water Quality Control Board (Regional Board) is in receipt of your application for coverage under the General Waste Discharge Requirements to inject potassium sulfate for remediation of petroleum hydrocarbons impacted groundwater. The application was prepared by your consultant Wayne Perry, Inc. on behalf of Former Shell #204-4482-1209 (The Discharger).

The site is currently occupied by a restaurant in Long Beach (Latitude: 33.784239, Longitude: 118.134261) that includes a patio and drive-through. It is located in the Coastal Plain of Los Angeles - Central groundwater basin. The soil beneath the site consists mainly of sand, silt, sandy silt, silty sand, silt with sand, silt with clay, and clayey silt. The nearest production well is located approximately 3,398 feet from the site.

Several site assessments were conducted at the site since 1979. In 1979, two 3,000-gallon, one 4,000-gallon, one 6,000-gallon, and one 8,000-gallon gasoline and one 550-gallon waste oil underground storage tanks (USTs) were removed from the site. In 2002, three 12,000-gallon gasoline USTs were removed from the site.

Semi-annual groundwater monitoring was initiated in January 1993. According to the latest groundwater monitoring report conducted in October 2018, there are fourteen groundwater monitoring wells (MW-1 through MW-4, B-4, B-5, B-6, B-8, B-10, B-11, B-12, B-13, B-14R and B-15) at the site. Maximum concentrations of 91,000 micrograms per Liter (µg/L) total petroleum hydrocarbon as gasoline, 16,000 µg/L benzene, 21,000 µg/L toluene, 5,100 µg/L ethylbenzene, 28,000 µg/L total xylenes were detected in the groundwater samples. Groundwater depths were measured between 47.05 to 65.02 feet below ground surface (bgs) with flow direction toward north and northeast.

A remedial action plan (RAP) dated February 12, 2018, was approved for this site on May 21, 2018 (copy attached). In the approval letter, Regional Board staff concur with plan to inject potassium sulfate with sodium bromide or sodium fluoride tracer to five existing wells (AS-1, AS-2, AS-3, VE-1 & B-13) as a pilot test for enhanced anaerobic bioremediation.

We have completed the review of your application for coverage under General Waste Discharge Requirements (WDR) and determined that the proposed injection of potassium sulfate with sodium bromide or sodium fluoride tracer meets the conditions specified in Order No. R4-2014-0187, "General Waste Discharge Requirements for In-Situ Groundwater Remediation and Groundwater Re-Injection" adopted by the Regional Board on September 11, 2014.

The injection of potassium sulfate with sodium bromide or sodium fluoride tracer is permitted under the General WDRs, Order No. R4-2014-0187. For guidance, refer to http:www.waterboards.ca.gov/losangeles/water_issues/programs/ust/guidelines/Subsurface_injection_of_ISRR.pdf.

Enclosed are your WDRs, consisting of Regional Board Order No. R4-2014-0187 (Series No.134) and Standard Provisions Applicable to Waste Discharge Requirements, and Monitoring and Report Program (MRP) No. CI-10463. The proposed discharge shall not cause the mineral constituents of the receiving groundwater at the compliance point, downgradient outside the application area, to exceed applicable limits (West Coast Basin of the Los Angeles Coastal Plain Groundwater Basin) given in Attachment B of Order No. R4-2014-0187.

The MRP No. CI-10463 requires you to implement the monitoring program on the effective date of this enrollment under Regional Board Order No. R4-2014-0187. When submitting monitoring or technical reports to the Regional Board per these requirements, please do not combine other reports with your monitoring reports. Submit each type of report as a separate document.

In accordance with regulations adopted by the State Water Resources Control Board regarding electronic submittal of information, UST Program monitoring reports have been electronically submitted to the State Board GeoTracker system under the UST Global ID T0603701743. To comply with the MRP under this WDR, the Discharger shall upload the WDR monitoring reports to GeoTracker under both Global IDs T0603701743 (continuing) and WDR100040113 (new).

For all parties who upload electronic documents to the State GeoTracker Database, the Regional Board will no longer accept documents (submitted by either hard copy or email) that already have been uploaded to GeoTracker.

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 1st and ending June 30th, 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 beginning July 1st.

If you have any questions, please contact Dr. Eric Wu at (213) 576-6683 or via email at ewu@waterboards.ca.gov for issues regarding the WDRs, and Mr. Nhan Bao at (213) 576-6703 or via email at nhan.bao@waterboards.ca.gov for issues regarding the USTs.

Sincerely,

Hugh Marley for RP
Executive Officer

Enclosures:
1. General Waste Discharge Requirements Order No. R4-2007-0187
2. Monitoring and Reporting Program No. CI-10463
3. Regional Board Directive Letter dated May 21, 2018
4. Figure No. 2, Current Plot Plan

Cc w/o enclosure:
Mr. Brian Partington, Water Replenishment District of Southern California
Ms. Carmen Piro, City of Long Beach, Department of Health and Human Services
Mr. Louie Christopoulos, Landowner
Mr. John Huff, Wayne Perry Inc.

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

MONITORING AND REPORTING PROGRAM NO. CI-10463
FOR
FORMER SHELL #204-4482-1209
5095 E. PACIFIC COAST HIGHWAY, LONG BEACH, CA
(INJECTION OF POTASSIUM SULFATE WITH SODIUM BROMIDE OR SODIUM FLUORIDE TRACER)
ENROLLMENT UNDER REGIONAL BOARD
(ORDER NO. R4-2014-0187, SERIES NO. 134)

I. REPORTING REQUIREMENTS

A. Former Shell #204-4482-1209 (hereinafter Discharger) shall implement this monitoring program on the effective date of this Monitoring and Reporting Program (MRP). The first monitoring report under this program shall be received at the Regional Board by July 15, 2019. Subsequent monitoring reports shall be received at the Regional Board according to the following schedule:

Monitoring Period	Report Due
January – June	July 15th
July- December	January 15th

The Discharger shall comply with the Electronic Submittal of Information (ESI) requirements by submitting all reports required under the MRP to the State Water Resources Control Board (SWRCB) Geo Tracker database, Attention: Information Technology Unit.

If there is no discharge or injection during any reporting period, the report shall so state.

B. Laboratory analyses - all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the State Water Resources Control Board (the State Board) Division of Drinking Water - Environmental Laboratory Accreditation Program (ELAP). A copy of the laboratory certification shall be provided each time a new and/or renewal certification is obtained from ELAP.

C. The method limits (MLs) employed for effluent analyses shall be lower than the permit limits established for a given parameter, unless the Discharger can demonstrate that a particular ML is not attainable and obtains approval for a higher ML from the Regional Board Executive Officer (Executive Officer). The Discharger shall submit a list of the analytical methods employed for each test and the associated laboratory quality assurance/quality control (QA/QC) procedures upon request by the Regional Board.

D. Groundwater samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136. All QA/QC samples must be run on the same dates when samples were actually analyzed. The Discharger shall make available for inspection and/or submit the QA/QC documentation upon request by Regional Board staff.

E. Each monitoring report must affirm in writing that "All analyses were conducted at a laboratory certified for such analyses by the State Board ELAP and in accordance with current United States Environmental Protection Agency guideline procedures or as specified in this Monitoring Program." Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report.

F. Each monitoring report shall contain a separate section titled "Summary of Noncompliance" which discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with WDRs. This section shall be located at the front of the report and shall clearly list all non-compliance with WDRs, as well as all excursions of effluent limitations.

G. The Discharger shall maintain all sampling and analytical results: date, exact place, and time of sampling; dates analyses were performed; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.

H. If the Discharger performs analyses on any groundwater samples more frequently than required by this MRP using approved analytical methods, the results of those analyses shall be included in the report.

I. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized to demonstrate compliance with the requirements and, where applicable, shall include results of receiving water observations.

J. The Discharger should not implement any changes to the Monitoring and Reporting Program prior to receiving the Executive Officer's written approval.

K. In accordance with regulations adopted by the SWRCB regarding ESI, Underground Storage Tank (UST) Program monitoring reports have been electronically submitted to the State Board GeoTracker system under UST Global ID T0603701743. To comply with the MRP under this WDR, the Discharger shall upload the WDR monitoring reports to the Geotracker under both Global ID T0603701743 (continuing) and Global ID WDR100040113 (new).

II. POTASSIUM SULFATE WITH SODIUM BROMIDE OR SODIUM FLUORIDE TRACER (POTASSIUM SULFATE) INJECTION MONITORING REQUIREMENTS

The reports shall contain the following information regarding injection activities:

1. A map showing the injection points used for potassium sulfate injections.

2. To avoid groundwater monitoring network reduction, data bias, and well screen clogging or alteration, no groundwater monitoring wells shall be used as injection points. Separate sparge points/wells must be used for injection program.

3. A written and tabular summary defining the quantity of potassium sulfate injected per month to groundwater and a summary describing the days on which the injection system was in operation.

4. A bi-annual visual inspection at each injection well shall be conducted to evaluate the well casing integrity. The monitoring report shall include a summary of the visual inspection.

III. GROUNDWATER MONITORING PROGRAM

The Discharger shall conduct groundwater monitoring at the site.

For the pilot test, groundwater samples shall be collected from wells AS-1, AS-2, B-4, B-5, B-6, B-8, B-10, B-11, B-12, B-13, B-14R, B-15, and MW-1 through MW-4 one or two weeks prior to the potassium sulfate injection activities. Groundwater monitoring parameters for the limited pilot test were proposed in the Remedial Action Plan, which the Regional Board approved on May 21, 2018.

During the pilot test, to monitor the effectiveness of the potassium sulfate injection, groundwater samples shall be collected from B-4, B-5, B-6, B-12, B-14R, and B-15 (refer to attached Figure No. 2); or other wells that may be added or deleted to this MRP once the proposed full-scale injection locations are proposed and approved. The existing monitoring wells shall not be used as injection points, and potassium sulfate injection points shall not be used as monitoring points.

Groundwater shall be monitored for the duration of the remediation in accordance with the following discharge monitoring program:

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS[1]
Total petroleum hydrocarbon as gasoline (TPHg)	µg/L	Grab	Semi-Annually
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	µg/L	Grab	Semi-Annually
Methyl tertiary butyl ether (MTBE), Tertiary butyl alcohol (TBA), Tertiary amyl methyl ether (TAME), Di-isopropyl ether (DIPE), Ethyl tertiary butyl ether (ETBE),	µg/L	Grab	Semi-Annually
Naphthalene Ethanol Formaldehyde Acetone	µg/L	Grab	Semi-Annually
Total dissolved solids, Arsenic, Boron, Chloride, Bromide, Sulfate, Lead, Nickel, Cadmium, Manganese	mg/L	Grab	Semi-Annually
Oxidation-reduction potential	millivolts	Grab	Semi-Annually
Dissolved Oxygen	µg/L	Grab	Semi-Annually

Total ferrous iron	µg/L	Grab	Semi-Annually
Total Chromium and hexavalent chromium[2]	µg/L	Grab	Semi-Annually
pH	pH units	Grab	Semi-Annually
Temperature	^{0}F/^{0}C	Grab	Semi-Annually
Groundwater Elevation	Feet, mean sea level, and below ground surface	In situ	Semi-Annually

[1] One week before injection and semi-annually thereafter.
[2] The Discharger is required to monitor for total chromium and hexavalent chromium in the baseline, second and forth semi-annually sampling. If detected at any of these sampling events, the total chromium six must be monitored semi-annually thereafter.
[3] µg/L= micrograms per liter.
[4] mg/L = milligrams per liter.

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

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

IV. MONITORING FREQUENCIES

Specifications in the MRP are subject to periodic revisions. Monitoring frequencies may be adjusted to a less frequent basis or parameters dropped by the Executive Officer if the Discharger makes a request and the Executive Officer determines that the request is adequately supported by statistical trends of monitoring data submitted.

V. CERTIFICATION STATEMENT

"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)"

VI. 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 Regional Board, upon request by interested parties.

Ordered by: _____ Date: May 3, 2019
Executive Officer