



EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

18 February 2016

Mr. Floyd Barnes
9744 Fountain Valley Drive
Stockton, CA 95209

CERTIFIED MAIL
7010 0290 0000 8536 1529

NOTICE OF APPLICABILITY OF GENERAL ORDER NO. R5-2015-0012 Waste Discharge Requirements General Order for In-Situ Remediation and Discharge of Treated Groundwater to Land, Barnes Trucking, 1817 South Fresno Avenue, Stockton, San Joaquin County

A Report of Waste Discharge Permit Application and Notice of Intent (NOI) were submitted on your behalf by Stratus Environmental, Inc. (Stratus), on 29 April 2015 requesting coverage under General Order No. R5-2008-0149, *General Waste Discharge Requirements for In-situ Groundwater Remediation at Sites with Volatile Organic Compounds, Nitrogen Compounds, Perchlorate, Pesticides, Semi-Volatile Organic Compounds, Hexavalent Chromium, and/or Petroleum Compounds*. The application fee was received 1 May 2015. Additional information and revisions to the scope of work were presented in the *Addendum to Notice of Intent Application* dated 6 August 2015, the *Addendum #2 to Notice of Intent Application* (Addendum #2) dated 21 December 2015, and by email discussion, summarized in an email dated 12 February 2016, all submitted on your behalf by Stratus. The applicable general order is now General Order R5-2015-0012, *Waste Discharge Requirements General Order for In-Situ Groundwater Remediation and Discharge of Treated Groundwater to Land* (General Order R5-2015-0012). Based on information in your submittals, it is our determination that this project does meet the requirements of General Order R5-2015-0012. All of the requirements contained in the General Order are applicable to your project. You are assigned site specific Order No. R5-2015-0012-014.

Project Location:

The project is in the City of Stockton in San Joaquin County
Assessor's Parcel No.163-060-14.

Township 1 North, Range 6 East, Section 13, Mount Diablo Baseline and Meridian
Latitude 37°, 55', 52.10" North, Longitude 121°, 18', 44.46" West

Project Description:

Former operations of an underground tank system at the former Barnes Trucking facility in Stockton, in San Joaquin County (Site), caused petroleum pollution of the soil and groundwater. The primary pollutants of concern are petroleum hydrocarbons, including total petroleum hydrocarbons as gasoline,

benzene, toluene, ethylbenzene, and total xylenes (BTEX), and naphthalene. The Site is currently used as a RV and boat storage facility.

Ozone injection was proposed to address elevated concentrations of petroleum hydrocarbons in groundwater. San Joaquin County approved the ozone injection in its letter dated 23 April 2015. Lead regulatory status was transferred to the Central Valley Water Board in July 2015.

For this project, the Discharger submitted the following documents:

- *Remedial Action Work Plan* dated 9 March 2015
- *Notice of Intent and Monitoring and Reporting Plan (NOI)* dated 29 April 2015
- *Addendum to Notice of Intent Application* dated 6 August 2015
- *Semi-Annual Groundwater Monitoring Report – Third Quarter 2015* dated 10 November 2015
- *Addendum #2 to Notice of Intent* dated 21 December 2015

Five injection wells (OZ-1 through OZ-5) will be used for ozone injection. Injection will occur continuously at an average rate of 2.7 pounds per day (lbs/day), with a maximum injection rate of 3 lbs/day and a monthly maximum volume of 80 pounds of ozone.

The maximum injection volume was calculated based on recent groundwater analytical data for the Site and the calculated ozone demand required to treat gasoline range organics, benzene, toluene, ethylbenzene, and total xylenes. The calculated total ozone demand is 2,080 pounds of ozone.

To be conservative, Stratus proposes to operate the remediation system for the first 8 weeks at approximately 60-percent capacity, which will consist of injecting ozone into the five ozone wells for 75 minutes (15 minutes each well) followed by 45 minutes of no ozone injection, on a 2-hour cycle. If no adverse water quality conditions are observed during the 8-week start-up period, ozone injection is proposed to be injected at 15 minute intervals at each well, resulting in a 75-minute cycle.

There are 25 existing Site wells associated with this Site, 11 existing groundwater monitoring wells, 12 wells formerly used for oxygen injection by iSOC, re-purposed for groundwater monitoring, and 1 existing air sparge and 1 dual phase extraction well. The Monitoring and Reporting Program, incorporated with this permit, requires monitoring and sampling of 12 of the 25 wells associated with the UST investigation and cleanup project. Monitoring and reporting of remaining Site wells is under the direction of the lead regulatory agency, the Central Valley Water Board. No additional construction of groundwater monitoring wells is needed or anticipated at this time. Installation of five ozone injection wells is proposed and approved as part of the injection project. Mr. Floyd Barnes will be responsible for conducting groundwater sampling, and reporting of the results as described in the attached Monitoring and Reporting Program Order No. R5-2005-0012-014.

A Contingency Plan was submitted by Stratus in Addendum #2 and refined via emails exchanged between 21 January 2016 and 12 February 2016, final agreements were summarized in an email dated 12 February 2016. Stratus proposes that if concentrations of deleterious byproducts in compliance zone wells exceed action levels, listed below, that ozone injection will be stopped. If byproducts or mobilization of metals do not decrease to concentrations below action levels naturally within 60 days of cessation of ozone injections, batch extraction of groundwater will be implemented.

The Contingency Plan to address any unforeseen negative impacts is as follows:

1. The following wells are classified as compliance wells: MW-6, MW-7, and MW-8.

- For the purposes of this Contingency Plan, action levels are established in the table below. Action levels are based on naturally occurring background concentrations and the allowance of a 20% increase if naturally occurring levels, not to exceed the constituent's water quality objective (WQO). Action levels are shown in the table below.

Barnes Trucking- Action Levels			
Constituent	Maximum Background Concentration (ug/L)	WQO (ug/L)	Action Level (ug/L)
Arsenic	53 ^{a,b}	10	53
Barium	3,100 ^a	1000	3,100
Bromate	<1.0 ^b	10	1.2
Bromide	840 ^b	2,300	1,008
Cadmium	<2 ^{a,b}	10	2.88
Calcium	88,000 ^b	NA	NA
Chromium, total	21 ^a	50	25.2
Cr VI	<1 ^{a,b}	10	1.2
Copper	<20 ^b	300	24
Lead	<5 ^{a,b}	15	6
Mercury	<1 ^{a,b}	2	1.2
Molybdenum	51 ^a	35	51
Nickel	91 ^a	100	100
TDS	650,000 ^a	500,000	650,000

a – June 2015 sample data from background well MW-2

b – September 2015 background sample data

- If water quality concentrations exceed action levels in compliance wells, the ozone injection system will be shut down and the well(s) will be sampled 30-days after shut-down. If concentrations still exceed action levels, a second round of confirmation samples will be collected after 30 days (60-days total after shut-down). If concentrations still exceed action levels, groundwater extraction will be initiated.
- Extraction wells will be determined based on the location of exceedance(s) and concentrations in treatment and transition zone wells.
- Groundwater extraction will continue until concentrations in compliance wells reduce to less than action levels. Quarterly sampling will be performed to determine if concentrations in compliance wells have dropped to below action levels. Once concentrations have decreased in compliance wells to below extraction levels, batch extraction will end, and two quarters of post-batch extraction monitoring will be performed to confirm that water quality has been restored.

If the Responsible Party desires to modify the injectants and/or volume of injectants, a revised Notice of Intent must be submitted and a new Notice of Applicability issued prior to proceeding with the additional/modified injection.

The scope of work for this project is covered by the CEQA documentation for the General Order. Additional CEQA activities are not needed.

No comments were received on the draft Notice of Applicability and Monitoring and Reporting Program during the 30-day public comment period from 29 June 2015 to 31 July 2015.

General Information:

1. The project will be operated in accordance with the requirements contained in General Order No. R5-2015-0012 and in accordance with the information submitted in the Notice of Intent.
2. The required annual fee (as specified in the annual billing you will receive from the State Water Resources Control Board) shall be submitted until this Notice of Applicability is officially rescinded.
3. The Responsible Party shall comply with the attached General Order No. R5-2015-0012, General Waste Discharge Requirements for In-situ Groundwater Remediation and Discharge of Treated Groundwater to Land.
4. Injection of materials other than ozone, into the subsurface is prohibited, unless analysis, as specified in Order No. R5-2015-0012, of the injectant is provided and approval is given by the Central Valley Water Board staff.
5. Failure to abide by the conditions of the General Order could result in an enforcement action as authorized by provisions of the California Water Code.
6. The Responsible Party will implement the final Contingency Plan, included as part of the Notice of Intent, within 30-days of it being triggered.
7. The Responsible Party shall comply with the attached Monitoring and Reporting Program, Order No. R5-2015-0012-014 and any revisions thereto as ordered by the Executive Officer.

If you have any questions or concerns please contact Vera Fischer at (916) 464-4792 or contact her at vera.fischer@waterboards.ca.gov.

 For
Pamela C. Creedon
Executive Officer

Attachment: General Order No. R5-2015-0012
Monitoring and Reporting Program No. R5-2015-0012-014

cc: Sriram Iyer, State Water Resources Control Board, UST Cleanup Fund, Sacramento
Jovel Vossler, Regional Water Quality Control Board, Sacramento
Nuel Henderson, San Joaquin County Environmental Management, Stockton
Scott Bittenger, Stratus, Cameron Park