
Central Valley Regional Water Quality Control Board

July 31, 2019

Mr. Gary Taylor
Taylor and Yenovkian, LLC
2701 Corabel Lane, Suite 1
Sacramento, CA 95821

***NOTICE OF APPLICABILITY OF GENERAL ORDER NO. R5-2015-0012-056,
FORMER SUNSHINE CLEANERS, 4317 MARCONI AVENUE, SACRAMENTO,
SACRAMENTO COUNTY***

Taylor and Yenovkian, LLC submitted a completed Notice of Intent, dated March 4, 2019, requesting coverage under Order No. R5-2015-0012, *Waste Discharge Requirements General Order for In-situ Groundwater Remediation and Discharge of Treated Groundwater to Land*. Based on information in the submittal, it is our determination that this project meets the required conditions to be approved under Order No. 2015-0012. All of the requirements contained in the general order are applicable to this project. The project is assigned Order No. R5-2015-0012-056.

Project Location:

The project is in Sacramento County, Township 9N, Range 6E, Section 19, Mount Diablo Baseline & Meridian. Assessor's Parcel Number 271-0111-051; Latitude 38°37'4" N, Longitude 121°21'49"W.

Project Description:

The former Sunshine Cleaners property is located on the north side of Marconi Avenue, east of Eastern Avenue in Sacramento. The property part of single strip mall building that includes four tenant spaces. Leaks and spills of tetrachloroethene (PCE) formerly used at the property contaminated soil and groundwater beneath the property.

Depth to groundwater is approximately 115 feet deep. The primary constituent of concern at the site impacting groundwater is tetrachloroethene. The highest groundwater concentrations of PCE are located near Marconi Avenue in the southwest corner of the property. High PCE concentrations associated with a separate release are also found on the adjacent former Shell Service Station property at 4301 Marconi Avenue.

The in-situ bioremediation field scale pilot test will use an application of GeoGene, a proprietary remediation amendment, to break down groundwater concentrations of PCE and its daughter products at the site. GeoSolve states that GeoGene supports indigenous bacteria in metabolizing chlorinated volatile organic compounds. Three 8-inch diameter soil borings will be drilled to a maximum depth of 150 feet below ground surface near groundwater monitoring well GS-4. The boreholes will be continuously logged at depths greater than 120 feet and drilling will stop if a confining layer is encountered. Each of the borings will be backfilled with a mix of sand and GeoGene between 113 and the bottom of the borehole. A bentonite seal will be placed from 110 to 113 feet and the upper 110 feet of the boring will be backfilled with neat cement. Up to 2 tons of GeoGene may be applied to the subsurface.

The Central Valley Water Board circulated a fact sheet describing the project. One comment was received from Wayne Perry, Inc., who is a consultant for the adjacent former Shell Service Station property at 4301 Marconi Avenue. Wayne Perry requested that GeoSolve continuously log to identify any confining layers and plan to prevent cross contamination of any possible deeper water bearing zone. Geosolve agreed to stop drilling at a confining layer, if encountered, and to apply the GeoGene in the first water bearing zone only.

The site monitoring wells GS-1 through GS-5 will be monitored and sampled on a quarterly basis as described in the attached Groundwater Monitoring and Reporting Program. Monitoring well GS-4 will also be sampled monthly for six months. Following the completion of the six-month remedial monitoring period, GeoSolve will prepare a report summarizing the results of the pilot study.

General Information:

1. The project will be operated in accordance with the requirements contained in the General Order and in accordance with the information submitted in the completed 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 revoked.
3. In-situ placement of materials other than the GeoGene and sand mixture into the subsurface is prohibited.
4. 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.
5. Taylor and Yenovkian, LLC shall comply with the attached Monitoring and Reporting Program, Order No. R5-2015-0012-056 and any revisions thereto as ordered by the Executive Officer.

If you have any questions regarding this matter, please call Nathan Casebeer at (916) 464-4665.

ORIGINAL SIGNED BY ANDREW ALTEVOGT FOR

PATRICK PULUPA
Executive Officer

Attachment

cc: Mr. Rob Campbell, GeoSolve, Inc., Pleasanton
Ms. Andrea Wing, Shell Oil Products US, Carson
Ms. Erica Rodriguez, Wayne Perry, Inc., Buena Park

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2015-0012-056

FOR
IN-SITU GROUNDWATER REMEDIATION
AND DISCHARGE OF TREATED GROUNDWATER TO LAND

FORMER SUNSHINE CLEANERS
4317 MARCONI AVENUE
SACRAMENTO, SACRAMENTO COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring groundwater remediation for the former Sunshine Cleaners property. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. As appropriate, California Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board) staff shall approve specific sample station locations prior to implementation of sampling activities.

All samples should be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form.

GROUNDWATER MONITORING

As shown on Figure 3, there are 5 monitoring wells (GS-1 through GS-5) associated with this site. The groundwater monitoring program for these wells and any treatment system wells installed subsequent to the issuance of this MRP shall follow the schedule below. Sample collection and analysis shall follow standard EPA protocol. The monitoring wells shall be sampled according to the schedule in Table 1 below. The samples shall be analyzed by the methods listed in Table 2 below or equivalent methods EPA Method that achieves the maximum Practical Quantitation Limits. All concentrations between the Method Detection Limit and the Practical Quantitation Limit shall be reported as an estimated value.

Table 1: Sampling Frequency and Constituent Suite

Well Number	Frequency	Monitoring Objective
GS-4	Monthly for six months then Quarterly thereafter	Treatment Zone wells sampled to evaluate in-situ bioremediation progress inside the treatment zone.
GS-1, GS-3, GS-5	Quarterly	Compliance wells used to determine compliance with groundwater limitations.
GS-2	Quarterly	Background well used to develop background concentrations

Table 2: Analytical Methods

Constituent	Method	Maximum Practical Quantitation Limit (ug/L)
Volatile Organic Compounds	EPA 8260B	0.5
Total Dissolved Solids	EPA 160.1	10,000
Total Organic Carbon	EPA 415	300
Iron, Total and Dissolved	EPA 200.7	100
Chemical Oxygen Demand	EPA 410.4	varies
Nitrate	EPA 6500	300
Ammonia	EPA 350.1	20,000
Arsenic, Total and Dissolved	EPA 200.7	10
Manganese, Total and Dissolved	EPA 200.7	100

FIELD SAMPLING

In addition to the above sampling and laboratory analyses, field sampling and analysis shall be conducted each time a monitoring well or extraction well is sampled. The sampling and analysis of field parameters shall be as specified in Table 3.

Table 3: Field Sampling Requirements

Parameters	Units	Practical Quantitation Limit	Analytical Method
Groundwater Elevation	Feet, Mean Sea Level	0.01 feet	Measurement
Oxidation-Reduction Potential	Millivolts	10 millivolts	Field Meter
Electrical Conductivity	uhmos/cm	50 μ S/cm ²	Field Meter
Dissolved Oxygen	mg/L	0.2 mg/L	Field Meter
pH	pH Units (to 0.1 units)	0.1 units	Field Meter
Temperature	°F/°C	0.1 °F/°C	Field Meter

All wells that are purged shall be purged until pH, temperature, conductivity and dissolved oxygen are within 10% of the previous value.

Field test instruments (such as those used to test pH and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are calibrated prior to each monitoring event;
3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in item (b) of the "Reporting" section of this MRP.

AMENDMENT ANALYSIS

Prior to use, amendments shall be analyzed for the constituents listed in Table 4 using the listed method or an equivalent EPA Method that achieves the maximum Practical Quantitation Limit. The analysis should be done on a mixture of the amendment and deionized water at the estimated concentration that would be injected during the pilot project. All concentrations between the Method Detection Limit and the Practical Quantitation Limit shall be reported, and reported as an estimated value.

Table 4: Amendment Analytical Requirements

Constituent	Method	Maximum Practical Quantitation Limit (ug/L)
Volatile Organic Compounds	EPA 8260B	0.5
General Minerals including alkalinity, bicarbonate, potassium, chloride, sulfate, total hardness, nitrate, nitrite, ammonia.	Various	Various
Metals, Total and Dissolved, including arsenic, barium, cadmium, calcium, total chromium, copper, iron, lead, manganese, magnesium, mercury, molybdenum, nickel, selenium and silica.	EPA 200.7, 200.8	Various
Semi-Volatile Organic Compounds	EPA 8270	5.0
Total Dissolved Solids	EPA 160.1	10,000
pH	meter	Not Applicable
Electrical Conductivity	meter	Not Applicable

REPORTING

When reporting the data, the Discharger shall arrange the information in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner as to illustrate clearly the compliance with this Order. In addition, the Discharger shall notify the Central Valley Water Board within 48 hours of any unscheduled shutdown of any soil vapor and/or groundwater extraction system. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall also be reported to the Central Valley Water Board.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all reports shall be prepared by a registered professional Civil Engineer or Geologist or their subordinate and signed by the registered professional.

The Discharger shall submit quarterly electronic data reports, which conform to the requirements of the California Code of Regulations, Title 23, Division 3, Chapter 30.

The semi-annual reports shall be submitted electronically over the internet to the Geotracker database system by the 1st day of the second month following the end of each calendar quarter by **1 February, 1 May, 1 August, and 1 November**, until such time as the Executive Officer determines that the reports are no longer necessary.

Each quarterly report shall include the following minimum information:

- (a) a description and discussion of the groundwater sampling event and results, including trends in the concentrations of pollutants and groundwater elevations in the wells, how and when samples were collected, and whether the pollutant plume(s) is delineated;
- (b) field logs that contain, at a minimum, water quality parameters measured before, during, and after purging, method of purging, depth of water, volume of water purged, etc.;
- (c) groundwater contour maps for all groundwater zones, if applicable;
- (d) pollutant concentration maps for all groundwater zones, if applicable;
- (e) a table showing well construction details such as well number, groundwater zone being monitored, coordinates (longitude and latitude), ground surface elevation, reference elevation, elevation of screen, elevation of bentonite, elevation of filter pack, and elevation of well bottom;
- (f) a table showing historical lateral and vertical (if applicable) flow directions and gradients;
- (g) cumulative data tables containing the water quality analytical results and depth to groundwater;
- (h) a copy of the laboratory analytical data report;
- (i) A discussion of the long-term trends in the concentrations of the pollutants in the groundwater monitoring wells;
- (j) An analysis of whether the pollutant plume is being effectively treated;
- (k) A description of all remedial activities conducted during the year, an analysis of their effectiveness in removing the pollutants, and plans to improve remediation system effectiveness;
- (l) The status of any ongoing remediation, including an estimate of the cumulative mass of pollutant removed from or treated in the subsurface, system operating time, the

effectiveness of the remediation system, and any field notes pertaining to the operation and maintenance of the system; and

(m) If applicable, the reasons for and duration of all interruptions in the operation of any remediation system, and actions planned or taken to correct and prevent interruptions.

A letter transmitting the monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.








The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

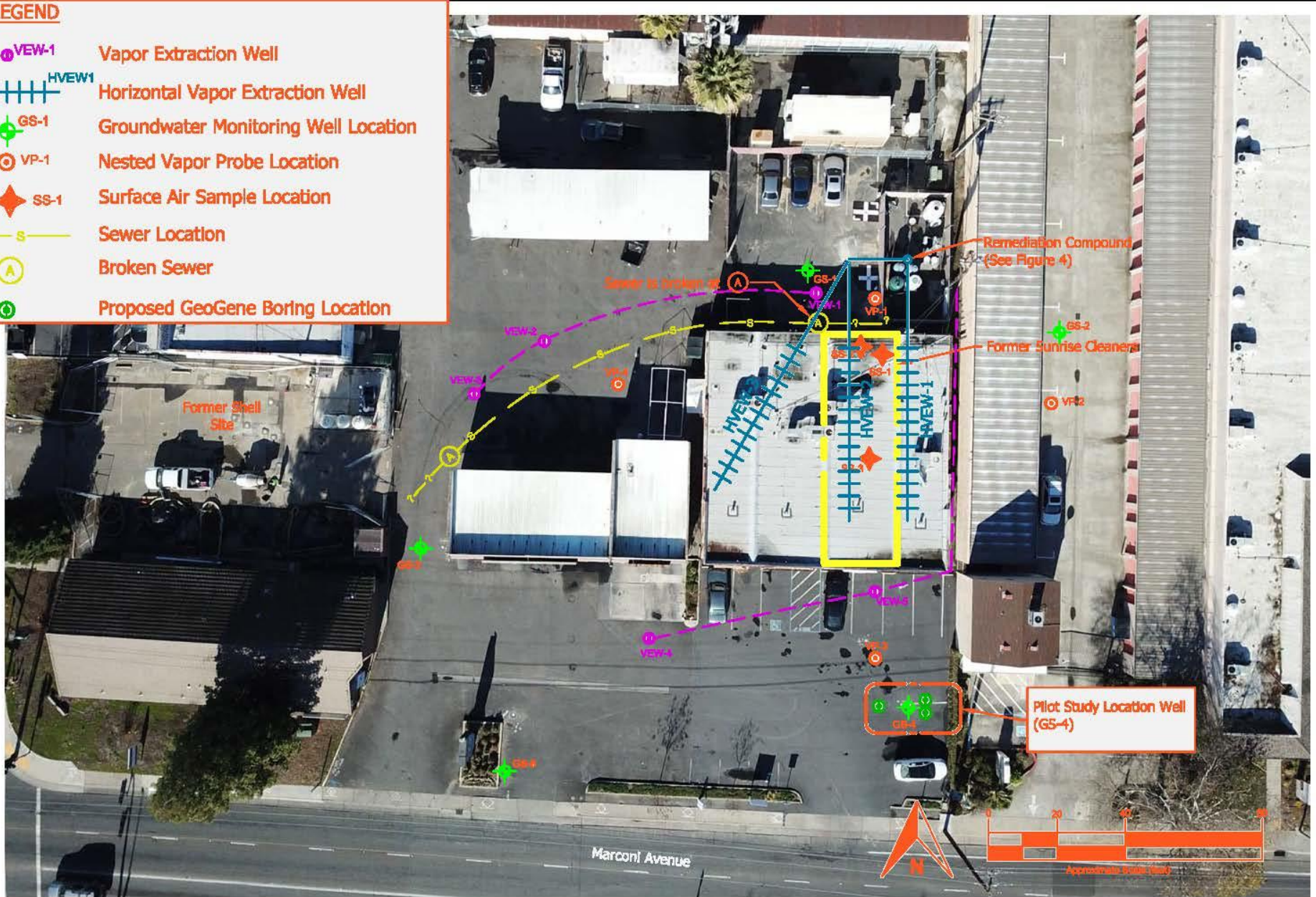
Ordered by:

PATRICK PULUPA Executive Officer

(Date)

LEGEND

-  VEW-1 Vapor Extraction Well
-  HVEW1 Horizontal Vapor Extraction Well
-  GS-1 Groundwater Monitoring Well Location
-  VP-1 Nested Vapor Probe Location
-  SS-1 Surface Air Sample Location
-  S Sewer Location
-  A Broken Sewer
-  G Proposed GeoGene Boring Location



GeoSolve, Inc.
Geoscience solutions rather than Status-Quo
 Address: 1807 Santa Rita Rd, Suite D-165
 Pleasanton, California 94566

PROPOSED GEOGENE BORING LOCATIONS

WORKPLAN FOR IN-SITE GROUNDWATER REMEDIATION PILOT STUDY
FORMER SUNSHINE CLEANERS
 4317 MARCONI AVENUE
 SACRAMENTO, CALIFORNIA

Project No.	2017-04	Drawn by:	GC
Scale:	AS SHOWN	Date:	12/2018

Figure No.

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