

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2019-0906

CALIFORNIA WATER CODE SECTION 13267
FOR
BP AMERICA
SAN JOAQUIN COUNTY

This Order is issued to BP America (hereafter Discharger) pursuant to California Water Code section 13267, which authorizes the Executive Officer of the California Regional Water Quality Control Board, Central Valley Region (hereafter Central Valley Water Board) to issue a Monitoring and Reporting Order (Order).

The Executive Officer finds:

INTRODUCTION

1. Applied Aerospace Structures is located at 3437 S. Airport Way in Stockton, San Joaquin County (Site). Applied Aerospace Structures was acquired by BP America, formerly known as BP Chemicals, which was renamed BP America. Investigations have shown that discharges of waste resulting from past operations at the Site have adversely affected Site groundwater. BP America is performing cleanup at the Site.
2. Existing data and information about the Site show the presence of various chemicals, including trichloroethylene (TCE), emanating from the property under the control of the Discharger. The Discharger is responsible for the discharge because the Discharger formerly owned the property.
3. Investigations have shown that elevated levels of volatile organic compounds (VOCs) are present in groundwater at the Site. Groundwater flows generally to the east and is approximately 40 feet below ground surface (ft-bgs). This pollution has impaired the beneficial use of groundwater resources at the Site.
4. The Discharger implemented corrective action measures in 1999, including a soil vapor extraction (SVE) system to remove pollutants from the vadose zone. The SVE system operated until December 2000, at which time the vadose zone met soil standards.

The Discharger implemented a groundwater extraction and treatment system (GWETS) in 1999 to control groundwater gradient.

5. The extracted groundwater was treated by carbon filters and discharged under permit to the City of Stockton sanitary sewer system until January 2019 when the permit was not renewed due to discontinuation of the GWETS. GWETS operation was suspended on 20 December 2016 due to diminished VOC recovery efficiency from 20-pounds per year (lbs/yr) in 2008 to less than 1 lb/yr in 2016. Monitoring conducted since GWETS suspension has indicated conditions suitable to implement Monitored Natural Attenuation (MNA) corrective action.

6. This Monitoring and Reporting Program (MRP) is issued by the Central Valley Water Board, pursuant to California Water Code (CWC) section 13267 and is necessary to determine whether remediation efforts are effective.
7. Existing data and information about the Site show the presence of various chemicals, including trichloroethylene (TCE), emanating from the property under the control of the Discharger. The Discharger is responsible for the discharge because the Discharger formerly owned the property.
8. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. This MRP replaces the requirements listed in MRP No. R5-2010-0808, which was issued in 2010.
9. Prior to construction of any new groundwater monitoring or extraction wells, and prior to destruction of any groundwater monitoring or extraction wells, the Discharger shall submit plans and specifications to the Central Valley Water Board for review and approval. Once installed, all new wells shall be added to the monitoring program and shall be sampled and analyzed according to the schedule below.

LEGAL PROVISIONS

10. CWC section 13267 states, in part:

(b)(1) In conducting an investigation, the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or, discharging, or who proposes to discharge waste within its region . . . shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports and shall identify the evidence that supports requiring that person to provide the reports.

The reports required herein are necessary for the reasons described in this Order, to assure protection of waters of the state, and to protect public health and the environment.

11. CWC section 13268 states, in part:

(a)(1) Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of Section 13267 . . . or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in accordance with subdivision (b).

(b)(1) Civil liability may be administratively imposed by a regional board in accordance with Article 2.5 (commencing with Section 13323) of Chapter 5 for a violation of subdivision (a) in an amount which shall not exceed one thousand dollars (\$1,000) for each day in which the violation occurs.

Failure to submit the required reports to the Central Valley Water Board according to the schedule detailed herein may result in enforcement action(s) being taken against the

Discharger, which may include the imposition of administrative civil liability pursuant to CWC section 13268. Administrative civil liability of up to \$1,000 per violation per day may be imposed for non-compliance with the directives contained herein.

REQUIRED ACTIONS

IT IS HEREBY ORDERED that, pursuant to California Water Code section 13267, BP America shall conduct monitoring and reporting in compliance with new Monitoring and Reporting Order No. R5-2019-0906 according to the following specifications.

GROUNDWATER MONITORING

- As shown in Table 1 and Figure 1, there are 15 monitoring wells, 7 (seven) groundwater extraction wells, and 3 (three) observation wells associated with the site. The Monitoring Program for these 25 wells and any wells installed subsequent to the issuance of this Order shall comply with the schedule in Table 2, analytes in Table 3, and Field Parameters in Table 4. The Discharger shall purge wells and collect samples using standard Environmental Protection Agency (EPA) protocol.

Table 1. Monitoring Locations (Analytical Methods are listed in Table 3)

| Groundwater Wells | Monitoring Locations |
|--------------------------|---|
| Extraction Wells | GW-1, GW-2R, GW-4, GW-5, GW-6, GW-7 |
| Monitoring Wells | MW-2, MW-3, MW-4, MW-5R, MW-6, MW-7, MW-9 through MW-17 |
| Observation Wells | OB-1, OB-2, OB-3 |

- Sampling Event Frequency:** Sampling shall occur starting in the fourth quarter of 2019, in accordance with schedule shown in Table 2. The sampling frequency shall be reduced to a semi-annual frequency for two sampling events, followed by annual sampling for two sampling events, and biennial sampling events until the end of the remediation as determined by the Regional Water Board. Sampling frequencies may be increased if review by Regional Water Board staff determines that concentrations are not stable or decreasing.

Table 2: Summary of Monitoring and Reporting Schedule

| Sampling Frequency | Sampling Events |
|---------------------------|--|
| Quarterly | Fourth Quarter 2019 through Third Quarter 2020 |
| Semi-Annually | First Quarter 2021 through Third Quarter 2021 |
| Annually | Third Quarter 2022 through 2025 |
| Biennially | Third Quarter 2025 through End of Project |

3. **Groundwater Monitoring:** For each sampling event, groundwater samples will be collected from each of the following five groundwater extraction wells GW-1, GW-2R, GW-4, and GW-5, and twelve monitoring wells MW-2 through MW-4, MW-5R, MW-6, MW-7, MW-10, MW-12 through MW-17. Analytical constituents and methods for the samples are listed in Table 3.
4. **Analytical Methods:** Equivalent EPA or Standard Methods that achieves the maximum Practical Quantitation Limit may be substituted for the Method listed. All concentrations between the Method Detection Limit and the Practical Quantitation Limit shall be reported as an estimated value.

Table 3: Analytical Methods

| Constituent | Method | Maximum Practical Quantitation Limit (ug/L) |
|----------------------------|-----------|---|
| Volatile Organic Compounds | EPA 8260C | 0.5 |
| Sulfide | SM 4500 | |
| Chloride, nitrate, sulfate | EPA 300 | 200 |
| Ethene, Ethane | SW3810M | 10,000 |
| Alkalinity | SM2320B | 2,000 |
| Chemical Oxygen Demand | SM5220D | 10,000 |
| Biochemical Oxygen Demand | SM2320B | Various |
| Total Organic Carbon | SW9060 | |
| Manganese | EPA 200.7 | |

5. **Field Parameter Monitoring:** For each sampling event, groundwater samples will be analyzed for field parameters. Field sampling requirements for field parameter monitoring are summarized in Table 4.
6. **Groundwater Level Monitoring:** For each sampling event, groundwater levels must be measured at all 25 existing wells. Field sampling requirements for groundwater level monitoring are listed in Table 4.

Table 4: Field Sampling Requirements

| Parameters | Units | Practical Quantitation Limit | Type of Sample |
|-------------------------------|-------------------------------|------------------------------|----------------|
| Groundwater Elevation | Feet, Mean Sea Level | 0.01 feet | Measurement |
| Oxidation-Reduction Potential | Millivolts | millivolts | Field Meter |
| Electrical Conductivity | micro Siemens/cm ² | 50 µS/cm ² | Field Meter |
| Dissolved Oxygen | mg/L | 0.01 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 |
| Turbidity | Nephelometric Turbidity Units | NTU | Field Meter |

7. **Well Purging:** For each sampling event, all wells that are purged shall be purged until pH, temperature, conductivity and dissolved oxygen are within 10% of the previous value.
8. **Field Test Instruments:** For each sampling event, field test instruments (such as those used to test pH and dissolved oxygen) may be used provided that:
 - (a) The operator is trained in proper use and maintenance of the instruments;
 - (b) The instruments are calibrated prior to each monitoring event;
 - (c) Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
 - (d) Field calibration reports are submitted as described in item (b) of the "Reporting" section of this MRP.

REPORTING

1. **Reporting Data:** 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. 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 Central Valley Water Board staff.
2. **Business and Professions Code:** 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.
3. **Quarterly and Semi-annual Reports:** Electronic data reports, which conform to the requirements of the California Code of Regulations, Title 23, Division 3, Chapter 30. Quarterly reports shall be submitted electronically over the internet to the Geotracker database system by **1 February, 1 May, 1 August, 1 November**. While on the Semi-annual schedule, Semi-annual Reports shall be submitted by **1 May and 1 November**. Monitoring Reports shall be submitted until such time as the Executive Officer determines that the reports are no longer necessary. The monitoring and reporting schedules are summarized in Table 4.
4. **Quarterly and Semi-annual Reports** shall consist of tabulated data submittal, laboratory analytical reports, and an email cover which shall be submitted electronically to Central Valley Water Board staff. This is in addition to the electronic data submittals to the Geotracker database. The data reports shall be formally presented in the subsequent Annual Monitoring Report.
5. **Annual Reports:** Each Annual Report shall be submitted to the Central Valley Water Board by **1 November** of each year. This report shall be uploaded to the Geotracker database and may be submitted for the Quarterly or Semi-annual Report provided that all information that must be submitted in the Quarterly and Semi-Annual Reports is included along with 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, whether the pollutant plume is delineated, details of remediation actions and interpretation of results;
- (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(s).
 - (i) MNA evaluation of the effectiveness and progress of the MNA remediation shall be evaluated with the following minimum information:
 - 1) graphical summaries of pollutant concentration data;
 - 2) groundwater contour maps and pollutant concentration maps containing all data obtained during the previous year;
 - 3) a discussion of the long-term trends in the concentrations of the pollutants and remediation indicators in the groundwater monitoring wells;
 - 4) an analysis of whether the pollutant plume is being effectively treated;
 - 5) 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 in addition to the following:
 - (i) Demonstrate that natural attenuation is occurring according to expectations;
 - (ii) Detect changes in the environmental conditions (e.g., hydrogeologic, geochemical, microbiological, and other changes) that may reduce the efficacy of any of the natural attenuation processes;
 - (iii) Identify any potentially toxic and/or mobile transformation products;
 - (iv) Verify that the plume is shrinking;
 - (v) Verify that no unacceptable impacts to downgradient receptors;
 - (vi) Detect new releases of contaminants to the environment that could impact the effectiveness of the MNA remedy;
 - (vii) Verify attainment of remediation objectives;

- (viii) Address any needs of implementation of the Contingency Plan
- 6) an identification of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program; and
- 7) if desired, a proposal and rationale for any revisions to the groundwater sampling plan frequency and/or list of analytes.
6. **Monitoring and Reporting Schedule:** In accordance with the schedule shown in Table 2, sampling is scheduled to begin in the fourth quarter of 2019. Monitoring and reporting sampling frequencies are scheduled to decrease from quarterly, semi-annual, annual, and biennial, unless written notice from the Regional Water Board requires additional sampling following review of the Annual Reports and MNA evaluation submittals.

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, if any, 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:

Original signed by

ANDREW ALTEVOGT, Assistant Executive Officer

6 November 2019

(Date)

