Central Valley Regional Water Quality Control Board

29 July 2024

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NOTICE OF APPLICABILITY OF GENERAL ORDER R5-2015-0012, FORMER WICKES FOREST INDUSTRIES SITE, 147 A STREET, ELMIRA, SOLANO COUNTY

On 12 February 2023, the Department of Toxic Substances Control (DTSC) submitted a Notice of Intent (NOI) 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* (General Order) for the facility located at 147 A Street in Elmira (Site). DTSC submitted additional information in emails dated 26 March and 13 May 2024. The NOI along with the following documents comprise the NOI submittal:

- *Pilot Study Workplan for Hexavalent Chromium Reduction* (Work Plan), dated 15 November 2023, prepared by Geocon Consultants, Inc. (Geocon) for DTSC;
- *3-D Microemulsion® Factory Emulsified Technical Description* (3DMe Fact Sheet), dated 2015, prepared by Regenesis;
- *Final Sampling and Analysis Plan* (SAP), dated 18 September 2015, prepared by Geocon for DTSC;
- *Report of Findings: Bench Scale Evaluation of 3DME for Removal of Hexavalent Chromium*, dated 23 June 2023, prepared by Prima Environmental for Geocon for DTSC;
- *Draft Contingency Plan for In-Situ Pilot Test*, dated May 2024, prepared by Geocon for DTSC.

DTSC submitted the NOI to request regulatory coverage to implement the scope of work described in the Work Plan. Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff reviewed the information provided and have determined that this project qualifies for coverage under the General Order. DTSC is now assigned Order No. R5-2015-0012-083 for the Site. All of the requirements contained in the General Order and those listed in the General Information section below are applicable to your project. A copy of the General Order is enclosed with this

notice and is also available at the Central Valley Water Board Adopted Orders webpage (https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2015-0012.pdf).

Project Location

The Site is located on Solano County Assessor's Parcel Numbers (APNs) 142-010-140, 142-010-130, and 142-040-042. The Site is bounded along the northwest by active railroad tracks owned by the Union Pacific Railroad Company, to the south by Holdener Road, and to the southeast by A Street (Figure 1, below). Residences are present east of the Site and beyond Holdener Road to the south and also to the northwest, beyond the railroad tracks at the southern end of the Site. Undeveloped agricultural land borders the Site to the northeast, and on the far side of the railroad tracks to the north-northwest. The Site is generally level and is paved with asphalt. There are three large metal-sided buildings located on the Site, a former office building, a former wood treatment process building, and a storage building. The nearest surface water body is Alamo Creek, approximately 1300 feet to the south.

Project Description

The project is a pilot test to determine the effectiveness of 3D-Microemulsion to reduce concentrations of hexavalent chromium, Cr(VI), in groundwater.

Results of ongoing groundwater monitoring by DTSC at the Site show that the highest Cr(VI) concentrations (exceeding100 micrograms per liter [µg/L]) in groundwater are beneath the former wood preserving area in the southern portion of the Site and extend southeast to A Street. The highest arsenic concentrations in groundwater are also beneath and adjacent to the former wood preserving area and extend northeast beneath A Street and beyond. DTSC reports that the hydraulic gradient is to the east-northeast of the Site. The primary shallow zone hydraulic gradient will be more clearly defined as part of the proposed project.

It is known that Cr(VI) more readily breaks down under anaerobic conditions than under aerobic conditions. The Regenesis product 3DMe is an organic substrate that can stimulate microbial activity, which can lead to reducing conditions, which in turn will enable water-soluble Cr(VI) to transform to insoluble trivalent chromium, Cr(III). In May 2023 Geocon collected soil and groundwater samples from the Site for bench-scale testing with 3DMe. Prima Environmental (Prima) conducted the bench-scale test and determined that reducing conditions were established within seven days of application of the organic substrate test to the Site samples, and Cr(VI) concentrations decreased in that time.

The pilot test will consist of injecting 1,917 pounds of an approximately 5 weight percent aqueous 3DMe solution into five direct-push application points spaced approximately eight feet (ft) apart around the Site monitoring well E-6B which shows the highest concentrations of Cr(VI). E-6B is in the southern portion of the Site beneath and adjacent to the former wood preserving area. The amount of product that is planned for use is very similar to the "low dose" used in the bench test. The locations of the injection

points are shown in Figures 2 and 3, below. The application via injection will occur from 5 ft to 20 ft below ground surface (bgs).

The project will include activities before the on-Site work. These activities include health and safety planning, permitting for injection point (well) development, utility clearance, and subcontractor procurement. The field activities and laboratory analysis associated with the project include, but are not limited to, the following: advancing soil borings, solution make-up, injection of 3DMe, collection of post-injection groundwater samples, and laboratory chemical analysis of groundwater samples. DTSC will submit a *Hexavalent Chromium Reduction Pilot Test Report* following the conclusion of the pilot test.

If the pilot test is successful, this notice of applicability (NOA) may be amended to include additional injection locations and amounts.

On 11 June 2024, the Central Valley Water Board circulated a fact sheet describing the project and providing interested parties 30 days to submit comments or questions. No substantive comments were received by 16 July 2024, or as of the date of this letter.

Contingency Plan

The General Order requires a contingency plan for corrective actions be implemented if the water quality exceeds the requirements of the Order at the points of compliance. The General Order prohibits concentrations of metals, total dissolved solids (TDS), or electrical conductivity that are more than 20% greater than their respective baseline levels at points of compliance if the baseline levels are below their respective maximum contaminant levels (MCLs). If a baseline level is equal to the MCL, no concentration increase at points of compliance is acceptable.

Baseline concentrations of Cr(VI), total chromium, dissolved arsenic, dissolved iron, dissolved manganese, and TDS in compliance wells, as listed in the monitoring and reporting program (MRP) for this Order, will be determined prior to the injections based on groundwater sampling and analyses. Electrical conductivity (EC) will be measured in the field at the time of sampling. If a compound is not detected above the laboratory reporting limit (RL), then the reporting limit will serve as the baseline concentration for that compound.

As part of regular monitoring following the injections, if there is an exceedance of a trigger level or concentration is more than 20% above the baseline concentration at any compliance well a confirmation sample will be collected within 10 days of exceedance notification from the analytical laboratory and appropriately analyzed. If the exceedance is confirmed, Central Valley Water Board staff will be notified in writing within 10 days and DTSC will increase the monitoring frequency and expand the monitoring network to evaluate the extent of the impacts caused by the pilot test activities.

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.

Reporting

Under this NOA's monitoring and reporting program (MRP), data shall be reported electronically to the California State Water Resources Control Board's GeoTracker Database (https://geotracker.waterboards.ca.gov/), Global ID SLT5S1033144.

General Information

1. DTSC and its agents need to operate the project in accordance with the requirements contained in the General Order, and in accordance with the information submitted in the completed NOI and as specified in this notice of NOA.

2. Injection of materials other than those specified in the NOI into the subsurface is prohibited unless analysis, as specified in the General Order, of the injectant is provided to and concurred with by Central Valley Water Board staff prior to injection.

3. DTSC and its agents shall comply with the attached Monitoring and Reporting Program, Order No. R5-2015-0012-083 MRP, and any revisions thereto as ordered by the Executive Officer.

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. Central Valley Water Board staff concurrence with the use of the proposed remedial technology within this NOA does not constitute an endorsement or requirement of its specific use. It is the explicit responsibility of the applicant/discharger (DTSC) to obtain all relevant legal rights of its use.

If you have any questions regarding this matter, please contact Maxine Cottrell at (916) 464-4623 or via email at maxine.cottrell@waterboards.ca.gov.

Original Digitally Signed by John J. Baum
Date: 2024.07.29 09:52:19 -07'00'

for Patrick Pulupa
Executive Officer

enclosures: R5-2015-0012-083 MRP
General Order R5-2015-0012

cc via email: McKinley Lewis, Jr., DTSC
David Van Over
Jeffrey Bell, Solano County Dept. of Environmental Resources