



Maryland

Department of the Environment

Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor

Ben Grumbles, Secretary
Horacio Tablada, Deputy Secretary

November 18, 2020

Mr. John Schenkewitz
Manager, Remediation
Hess Corporation
Trenton-Mercer Airport
601 Jack Stephan Way
West Trenton NJ 08628

RE: APPROVAL OF CORRECTIVE ACTION PLAN ADDENDUM

Case No. 91-2100-BA
Hess Station No. 20204
1613 East Joppa Road, Towson
Baltimore County, Maryland
Facility I.D. No. 545

Dear Mr. Schenkewitz:

The Maryland Department of the Environment's (MDE) Oil Control Program (OCP) completed a review of the case file for the above-referenced property, including the *Corrective Action Plan Addendum*, dated September 17, 2020, submitted by your environmental consultant, WSP USA Corporation (WSP). The off-site property located along Yakona Road was redeveloped into a community park in 2014 and Hess continues to monitor groundwater monitoring wells and the subsurface water management system. The groundwater from the water management system discharges to a storm drain, which is treated prior to discharge using carbon filtration units due to dissolved petroleum concentrations detected. Additional investigations performed in 2017 were conducted to further evaluate subsurface soils and groundwater at the site for the potential design of an in-situ remediation plan to reduce petroleum concentrations to levels that would not require treatment prior to discharging to the storm drain. Based on the additional subsurface investigation and bench tests performed, WSP, on behalf of Hess, submitted the *Corrective Action Plan Addendum (CAPA)* proposing to inject in-situ chemical oxidation (ISCO) in areas of known petroleum contamination in order to reduce petroleum dissolve levels.

Non-activate persulfate and micronutrients (nitrogen and phosphorous) will be applied to three permanent injection wells. A Maryland-licensed well driller will install three 2-inch diameter injection wells using 10-foot continuous wrapped well screens ranging at depths of approximately 28 to 32 feet below the ground surface (bgs). Approximately 13,085 gallons of solution and water will be applied in total (4,362 gallons each well point) over a 7-day period. The injections are designed to treat a 25-foot radius of influence around each injection point. Monitoring of select monitoring

wells will be performed before (baseline), during, and after injection to evaluate effectiveness of the treatment and persulfate distribution. Injections will be gravity fed; however, applied pressures that will not exceed 40 pounds per square inch may be applied, if necessary. Monitoring wells within a 25-foot radius of influence will be capped. Flow rates are expected to be 5 gallons per minute (gpm) and injection volumes, pressures, and flow rates of the amendment application at each injection well will be recorded.

Baseline monitoring will be conducted at wells MW-4, OW-1, MW-7, YMW-7, MDE-4, and YP-1. The baseline samples will be collected within 30 days prior to injection. Water levels, temperature, pH, specific conductivity, turbidity, DO, and oxidation-reduction potential (ORP) will be measured at equal time intervals during low flow groundwater purging except MW-1, which only pH and ORP will be measured. Filtered and unfiltered groundwater samples will be collected and analyzed for volatile organic compounds (VOCs) using EPA Method 8260C; total petroleum hydrocarbons – diesel and gasoline range organics (TPH DRO and TPH GRO) using EPA Method 8015C, total and dissolved chromium and selenium using EPA Method 6020; total and dissolved hexavalent chromium using EPA Method 7196; and total and dissolved iron using a field test kit. Baseline samples will be collected for pH, ORP, and total iron concentrations of water collected at the storm water manholes MH-21 and MH-23 (bimonthly for at least 1 month before injections). During injection, wells MW-4, OW-1, MW-7, MW-1, and YMW-7 will be monitored for water levels, field parameters, and iron concentrations. If a well is capped, a pressure transducer will be installed to monitor influence.

Groundwater drainage system laterals will be monitored during injection to assess if diluted solution enters into the storm water management system. MH-23 will be monitored at regular intervals during injection and for pH, ORP, persulfate, and total iron concentrations. Water flow rates in MH-23 will be observed by field personnel during injections and, if any evidence of impact is observed, MH-21 will be monitored. If criteria have been met to warrant action, injection will be reduced and/or turned off. An emergency response contractor will be on call to pump out the system based on monitoring data and observations at MH-21 and MH-23.

Post-injection monitoring will begin the following day after injections are completed. Monitoring of MH-21 and MH-22 (parameters noted above) will continue daily for one week, then bimonthly for three months pending data results. Long-term monitoring must continue on a quarterly basis at MW-4, MW-7, YMW-7, MDE-4, OW-1, YP-1, and YMW-8 for one year for all parameters noted above. After two quarters of data evaluation, modification may be proposed.

The MDE hereby approves the *CAPA* contingent upon the following modifications:

1. Groundwater samples must continue to be analyzed for full-suite VOCs, including fuel oxygenates and naphthalene, using EPA 8260 and TPH-DRO and TPH-GRO using EPA Method 8015.
2. Include persulfate tests during treatment at wells MW-1, OW-1, YMW-7, and YMW-8 for radius of influence evaluation. Also include metals at MW-1 during injection.
3. Include water levels, field parameters, and metals during injections at wells YMW-8 and YP-1.

4. Include tank field observation wells at the Hess Station to measure if injection solution is observed.
5. Include MW-1 in the quarterly long-term post-treatment monitoring plan.
6. Provide a map of the storm system layout as noted on page 14. In the event solution enters the storm sewer system, locations for interception and recovery must be identified.
7. A summary report of activities must be submitted 45 days upon completion of the first post-monitoring sampling event. Quarterly data may be submitted with quarterly reports; however, the data must be presented in summary tables and a discussion of results must be included. MDE recommends the reporting of results of the *CAPA* be prepared and presented by WSP.

Notify the case manager at least five (5) working days prior to conducting any scheduled field work associated with this project. When submitting documentation, include two hard copies and one electronic copy on a labeled compact disc (CD) or via email. If you have any questions, please contact Ms. Ellen Jackson at 410-537-3482 (ellen.jackson@maryland.gov) or me at 410-537-3389 (andrew.miller@maryland.gov).

Sincerely,



Andrew Miller, Chief
Remediation Division
Oil Control Program

cc: Mr. David Sarr, WSP USA Corp.
Steven L. Leifer, Esquire, Baker Botts, LLP
Mr. Kevin Koepenick, Groundwater Management Section, Baltimore County DEPS
Mr. Christopher H. Ralston, Program Manager, Oil Control Program