



# Maryland

## Department of the Environment

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

Ben Grumbles, Secretary  
Horacio Tablada, Deputy Secretary

March 10, 2020

Mr. Christopher E. Williams  
Environmental Issues Program Manager  
Anne Arundel County Public Schools  
9034 Fort Smallwood Road  
Pasadena, MD 21122

**RE: CORRECTIVE ACTION PLAN APPROVAL**  
**Case No. 2018-0559-AA**  
**Wiley H. Bates Middle School**  
**701 Chase Street, Annapolis**  
**Anne Arundel County, Maryland**  
**Facility I.D. No. 3200**

Dear Mr. Williams:

The Maryland Department of the Environment's (MDE's) Oil Control Program (OCP) completed a review of the case file for the above-referenced property, including the *Corrective Action Phase Reporting*, dated November 4, 2019; the *EFR Evaluation Report*, dated November 14, 2019; and the *Corrective Action Plan Addendum (CAPA)*, dated January 17, 2020. This case was opened on May 2, 2018 following the report of liquid phase hydrocarbons (LPH) impacting Spa Creek.

A total of 13 monitoring wells were installed in the vicinity of the school's boiler room. LPH were first detected in three wells ranging from 0.94 to 13.49 feet in thickness on August 8, 2019. The monitoring well network has been gauged and sampled on a quarterly basis since August 2019. Enhanced fluid recovery (EFR) events were conducted on a biweekly basis from August 8 to October 10, 2019. Effective October 14, 2019, the OCP approved the reduction of EFR to once weekly until approval and implementation of the next phase of corrective action. As of December 26, 2019, the LPH thicknesses had been reduced to non-detect in MW-3, 0.95 feet in MW-2, and 7.44 feet in MW-1. Approximately 781 gallons of LPH has been recovered from MW-1, MW-2, and MW-3. In addition, the presence of LPH has not been detected since repairs of the storm drain at the school were completed in July 2019.

The *EFR Evaluation Report* proposes a skimmer pump remediation system for MW-1 and MW-2. The *Report* indicates that LPH thickness in MW-3 has been less than 0.02 feet since October 1, 2019 and proposes static hydrophobic absorbents in MW-3 to recover LPH. The *Report* states that QED Genie® skimmer pumps will be deployed in MW-1 and MW-2. The skimmer pumps consist of hydrophobic inlet screens mounted on a vertical control rod that allow the inlet screen to float on the LPH / groundwater interface and continue to recover only LPH as the interface elevation fluctuates. The selected skimmer pumps will allow the hydrophobic inlet screens to float over a range of 40 inches.

The January 17, 2020 *CAPA* proposes the recovered LPH will be transferred into a 500-gallon single-wall aboveground storage tank (AST) positioned in the air shaft area adjacent to the boiler room. The steel AST will be installed with a containment dike and high-level alarm. A vent will extend to a minimum of 36 inches above the ground surface, and a product recovery pipe will extend to above the air shaft grating with a locking catch basin attached. The *EFR Evaluation Report* proposes that recovered LPH will be collected utilizing a vacuum truck and transported off-site. The *CAPA* establishes remedial clean-up goals for monitoring wells MW-1, MW-2, and MW-3 to include the reduction of LPH to <0.01 feet in all wells for a minimum of six months, with monthly well gauging/monitoring to continue for six months after the reduction has been achieved to permit consideration of any seasonal fluctuations.

The MDE hereby approves the proposed actions in the *EFR Evaluation Report* and *CAPA* contingent upon the following modifications:

**Corrective Action Plan Addendum:**

- 1) MDE concurs with the use of skimmer pumps in MW-1 and MW-2 and storage of LPH in the 500-gallon AST. Upon installation of the AST, submit documentation of the storage system setup to the OCP.
- 2) MDE concurs with the use of static hydrophobic absorbents in MW-3 with the following modifications:
  - a. Absorbents may be used to recover LPH while the environmental consultant is on site; however, absorbents **may not** be left in any well overnight or for long term, as this will directly interfere with the evaluation of recovery success and LPH rebound assessment.
  - b. If LPH are detected in MW-3 at a thickness greater than 0.05 feet, report the detection to Ms. Lindley Campbell at 410-537-3387 or [lindley.campbell1@maryland.gov](mailto:lindley.campbell1@maryland.gov).
- 3) MDE concurs with submitting **monthly LPH System Operation and Recovery Reports** for the first **three months** of system operation. If the recovery system has not required any modification(s), MDE may consider inclusion of the *LPH System Operation* report as part of the required quarterly report.
- 4) After six months of system operation, perform an evaluation of the overall system effectiveness. If deemed ineffective, the corrective action plan may need to be revised. The MDE reserves the right to require CAP revision based on the findings.

**Cleanup Goals**

- 5) MDE concurs with the established clean-up goals, ensuring the recovery of LPH to the maximum extent practicable (<0.01 feet in all wells) for a minimum of one year.

- 6) On-Site Liquid-Phase Hydrocarbons: You must be able to demonstrate that LPH is not migrating within the formation or to the adjacent storm drain system. LPH presence and thickness trends during active remediation and following approved remediation system deactivation to be evaluated based on well gauging data.
- 7) On-Site Dissolved-Phase Hydrocarbons (DPH): Attainment of stable or declining trends in DPH concentrations in on-site monitoring wells. Groundwater data trends from selected wells, to be determined by MDE, must be statistically evaluated using Mann-Kendall evaluation protocols. Following approval to deactivate the on-site groundwater remediation system, post-operation monitoring will be performed on selected groundwater monitoring and/or recovery wells to evaluate DPH rebound trends. The Department reserves the right to consider all relevant factors when evaluating attainment and sustainment of remediation goals.
- 8) Off-Site Liquid-Phase Hydrocarbons: Must be able to demonstrate that LPH from the on-site release is no longer a threat to Spa Creek, as evidenced by the sustained absence of LPH at the storm drain outfall.

**Interim EFR Events:**

- 9) Continue with the EFR events as approved on a weekly basis until the approved corrective action system is installed and functional.
- 10) **Within 45 days of completing EFR activities**, submit a *Final EFR Summary Report* detailing the cumulative results of the EFR activities. The report must provide a final summary of pre- and post-event gauging results and daily and cumulative calculated recovery totals (LPH and petroleum impacted water).


**Continued Groundwater and Surface Water Monitoring:**

- 11) Continue monthly gauging of all wells and quarterly (every three months) sampling of all wells not exhibiting measurable thicknesses of LPH. All samples collected must be analyzed for full-suite volatile organic compounds (VOCs), including fuel oxygenates and naphthalene, using EPA Method 8260 and total petroleum hydrocarbons - diesel and gasoline range organics (TPH-DRO and TPH-GRO) using EPA Method 8015B. Monthly gauging may coincide with EFR events if the events are ongoing.
- 12) If a new occurrence of LPH is observed in monitoring wells other than MW-1, MW-2, or MW-3, report the findings within 2 hours of discovery by calling MDE's Baltimore Headquarters at 410-537-3442 during standard business hours, or the Emergency Response Division hotline at 1-866-633-4686. Reports should not be made solely to OCP case managers.

- 13) **Within 45 days of completing each quarterly monitoring event**, submit a *Quarterly Progress Report*. When submitting sampling results, include detailed data summary tables and scaled site maps showing actual sampling locations. In the discussion of supplemental sampling events, include details on sampling procedures and describe analytical results in terms of media sampled. Reports must also include: groundwater contour maps; site-specific detailed hydrogeologic groundwater flow, product thickness(es) and dissolved concentration maps; cumulative amount of LPH recovered; and qualitative and/or quantitative discussions.
- 14) The MDE is in receipt of daily reports of stormwater outfall visual inspections showing the insignificant presence of LPH exiting the outfall. **Effective immediately**, MDE approves the conversion of stormwater outfall monitoring from once daily to **once per week and after a major storm event**. In addition, submit a *Work Plan* for the final cleaning of the stormwater pipe and the outfall to the OCP for review and approval.
- 15) If a new occurrence of LPH is observed in SPA Creek, follow the procedures established in Item #12, above. In the event of a new occurrence of LPH in Spa Creek, the Anne Arundel County Public Schools must be prepared to respond within 2 hours. If the presence of LPH is again detected in Spa Creek, the OCP reserves the right to require additional evaluation and/or remediation.

Notify the OCP at least five working days prior to conducting any work at this site so we have an opportunity to observe field activities. When submitting documentation to the OCP, provide three hard copies and one electronic copy on a labeled compact disc (CD) or via email. If you have any questions, please contact Ms. Lindley Campbell at 410-537-3387 ([lindley.campbell1@maryland.gov](mailto:lindley.campbell1@maryland.gov)) or me at 410-537-3499 ([susan.bull@maryland.gov](mailto:susan.bull@maryland.gov)).

Sincerely,



Susan R. Bull, Eastern Region Supervisor  
Remediation Division  
Oil Control Program

cc: Mr. Scott Alexander, Project Manager, Petroleum Management, Inc.  
Mr. Don Curtian, Director, Division of Environmental Health, Anne Arundel County Health Dept.  
Mr. Matthew Waters, Bureau of Engineering and Construction, Anne Arundel County DPW  
Ms. Lindley Campbell, Case Manager, Remediation Division, Oil Control Program  
Mr. Andrew B. Miller, Chief, Remediation Division, Oil Control Program  
Mr. Christopher H. Ralston, Program Manager, Oil Control Program