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March 18, 2021

Ms. Susan Bull
Eastern Region Supervisor, Oil Control Program
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, MD 21230

**RE: Request to Discontinue Pumping and begin Post-Remedial Monitoring Program
Shore Regional Health Chester River Hospital
MDE Oil Control Program Case 87-2534-KE**

Dear Ms. Bull:

In accordance with the Maryland Department of the Environment (MDE) letter dated September 9, 2020 and the Settlement Agreement and Consent Agreement dated May 11, 2016, we are requesting permission to discontinue pumping at the referenced site and start post-remedial monitoring in accordance with the MDE letter dated April, 24, 2020.

We have complied with the requirements in the September 9, 2020 letter, including: 6 months of groundwater sampling for monitored natural attenuation parameters, continuation of groundwater sampling for full-suite volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH)-diesel range organics (DRO) with and without silica gel cleanup (SGC), monthly groundwater gauging, quarterly sampling using low-flow methods, initiation of statistical analysis of the state of the TPH-DRO plume, and enhanced mapping of certain groundwater constituents.

In addition, we instituted procedures and purchased equipment to make the remediation system more reliable. We implemented contingency notification procedures and installed alarm telemetry such that if the remediation system turned off, it would notify our technicians immediately so it could be repaired rapidly. We purchased spare pumps such that if individual well pumps failed, they could be replaced quickly. The remediation system has pumped continuously during this 6-month period with no interruptions.

The following observations provide multiple lines of evidence that support discontinuing pumping with continued monitoring:

- No measurable liquid petroleum hydrocarbons (LPH) have been detected in any recovery or monitoring well since September 2019.
- The TPH-DRO groundwater plume is shrinking or is stable. Mann-Kendall statistical analysis presented in the quarterly reports indicates that all the wells except for one (MW-43) showed a statistically insignificant trend, decreasing trend, or stable trend for benzene, naphthalene, and TPH-DRO. In addition, the 1.0 mg/L TPH-DRO plume contour area has contracted over time as presented during the November 20, 2020 meeting with the Town of Chestertown.

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- We have multiple lines of evidence that biodegradation of the petroleum compounds is occurring:
 1. As stated above and proven by the statistical analysis, petroleum compound concentrations in groundwater are declining.
 2. The monitored natural attenuation sampling conducted during the last two quarters provides evidence that biodegradation of dissolved hydrocarbons is occurring at the site.
 - a. Dissolved oxygen and nitrate are depleted in the zone of 1 mg/L TPH-DRO concentrations.
 - b. The oxidation reduction potential (ORP) and dissolved iron results indicate that reducing conditions are present in the zone of 1 mg/L TPH-DRO concentrations.
 3. The SGC cleanup method results indicate that hydrocarbon metabolites are present in the groundwater. These metabolites are the product of ongoing microbiological degradation of the petroleum hydrocarbons.

After the remediation system is turned off, we will monitor groundwater conditions in accordance with the requirements in the MDE letters of April 24, 2020 and September 9, 2020. This intensive groundwater monitoring program will allow us to track the ongoing biodegradation at the site and verify that petroleum hydrocarbons do not reach the down gradient sentinel wells. Our expectation is that the dissolved hydrocarbons in groundwater will continue to biodegrade before they reach the sentinel wells. We will maintain the capability to restart the system at MDE's request or as indicated by the stipulations in MDE's April 24, 2020 letter.

We appreciate your consideration of this request and look forward to your response. Should you have questions, please do not hesitate to contact me at rscrafford@gfnet.com or 443-562-6714.

Sincerely,

GANNETT FLEMING, INC.



Rob Scrafford P.E., PMP
Project Manager



Ken Guttman, PE, PMP
Principal Engineer

Copies: C. Ralston (MDE), A. Miller (MDE), K. Kozel (Shore Health), M. Powell (Gordon Feinblatt)
W. Ingersoll, Mayor Cerino (Town of Chestertown)