



November 10, 2020

The Honorable Christopher Cerino
Mayor
Town of Chestertown
118 N. Cross Street
Chestertown, Maryland 21620

Dear Mayor Cerino:

Below are the Maryland Department of the Environment's (MDE) responses to the questions provided in your email dated October 30, 2020. Thank you for providing the questions to MDE and for the opportunity to answer them. As you characterized in your email, the questions relate to the use of the silica gel preparation method for total petroleum hydrocarbon – diesel range organics (TPH-DRO) analysis of environmental samples by EPA Method 8015.

MDE's response to each question is provided below.

- 1. Is it proposed that the Silica Gel Test be used for demonstrating compliance instead of the test specified in the Consent Agreement?*

The TPH-DRO samples, including those prepared with EPA Method 3630 (i.e. silica gel preparation), were analyzed by EPA Method 8015 which is the method required in the settlement agreement and consent order (SACO) between the University of Maryland Shore Regional Health (the Hospital) and MDE. The use of the silica gel preparation method was approved in accordance with the SACO on January 26, 2018.

The SACO states that once samples from the monitoring wells show TPH-DRO levels at or below 1 part per million (ppm), the Hospital can request approval to turn off the system. The Hospital submitted its request on January 25, 2020. In review of the request, MDE agreed that TPH-DRO was detected in each of the wells at or below 1 ppm on at least one occasion and that the Hospital had met the criteria to ask for the shutdown of the remediation system.

When making its decision on whether the remediation system could be turned off, MDE considered all of the data associated with the remediation case. This included all of the analytical data history for all of the monitoring wells (including benzene, toluene, ethylbenzene, xylenes, naphthalene, and methyl tertiary butyl ether), site hydrogeology, and known pumping characteristics of the remediation system. MDE approved the shutdown of the remediation system in its April 24, 2020 letter.

Currently, the remediation system is active because MDE postponed the approved shutdown as a result of the unauthorized shutdown in April through June 2020. As a result of that investigation, MDE also required additional sampling for natural attenuation parameters to be collected for at least two consecutive quarters. The natural attenuation sampling began in October 2020. MDE expects the second round of quarterly sampling data to be submitted in the first quarter 2021 report. At that time, MDE will evaluate the data and allow the Hospital to commence the previously approved system shutdown or provide additional direction.

2. If so, why is this change being made?

The use of EPA Method 3630 (i.e. silica gel preparation) was approved in an email on January 26, 2018, which Town officials were copied on.

3. If the Silica Gel Test is really equivalent to the test specified in the Consent Agreement, why is it that so many monitoring wells pass one test but not the other?

MDE does not consider samples prepared by EPA Method 3510 (i.e. the typical extraction method without silica gel) and EPA Method 3630 (i.e. preparation method with silica gel) to be equivalent. As discussed in MDE's August 28, 2020 letter to Mayor Cerino, the TPH-DRO concentrations from samples prepared by EPA Method 3510 include polar and non-polar compounds. The TPH-DRO concentration from samples prepared by EPA Method 3630 include only the non-polar compounds, which are typically only the petroleum hydrocarbons. The results from samples prepared by EPA Method 3510 will inherently contain more compounds (petroleum hydrocarbons and other organic compounds) and will result in higher concentrations when analyzed by EPA Method 8015.

As stated in its August 28, 2020 letter to Mayor Cerino, MDE considers the use of both TPH-DRO with and without the use of the silica gel preparation to be helpful in having a more complete picture of residual petroleum hydrocarbon concentrations. The data collected to date suggests that there are natural biodegradation processes occurring. This is why MDE has required the Hospital to begin collecting natural attenuation data. The natural attenuation data will provide further evidence on the extent to which biodegradation is occurring and controlling any residual petroleum hydrocarbons.

4. If the Silica Gel Test is to be used for compliance purposes, please tell us where else it has been used for this purpose in Maryland, especially where the focus was on drinking water?

The use of silica gel preparation for TPH-DRO has been looked at or considered at other sites in the state, but it ultimately was not used for making site decisions. There are two main reasons for this, the expense of the silica gel step and the additional data it provides was not warranted for the data quality objectives of the sites. As in this case, the evaluation of individual compounds (e.g. benzene, methyl tertiary butyl ether, naphthalene) were used to make decisions on whether the cleanup project had achieved a no further action decision point.

It is important to note that MDE is not closing the case. MDE has agreed that the remediation system is not providing any remedial benefit to recovering petroleum hydrocarbons. MDE has agreed that is appropriate to allow for a remediation system shutdown in order to test whether there is any benefit to keeping the treatment system on. Current sampling data does not suggest that there is an appreciable amount of residual petroleum hydrocarbons present and that in addition to the pumping groundwater, that natural biodegradation is also occurring. The additional sampling that the Hospital is completing will aid in understanding whether there is sufficient natural attenuation occurring to control the residual amount of petroleum hydrocarbons.

Again, MDE appreciates the opportunity to provide responses to these specific questions. We look forward to further discussing the overall cleanup progress and next steps during our meeting on November 20, 2020. If you have any questions, please contact me at 410-537-3470 or at chris.ralston@maryland.gov.

Sincerely,



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Oil Control Program

cc: Mr. Bill Ingersoll, Manager, Town of Chestertown
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