Maryland
Department of
the Environment

Larry Hogan, Governor
Boyd Rutherford, Lt. Governor

Ben Grumbles, Secretary
Horacio Tablada, Deputy Secretary

June 11, 2019

Mr. Christopher E. Williams
Environmental Issues Program Manager
Anne Arundel County Public Schools
9034 Fort Smallwood Road
Pasadena, Maryland 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 owned by Anne Arundel County Public Schools (AACPS), including the *Limited Subsurface Investigation* report, dated Apr. 22, 2019; the *Proposed Corrective Action Plan*, dated Apr. 23, 2019; and the *Addendum to Proposed Corrective Action Plan,* dated May 13, 2019. This case was opened on May 2, 2018 following the report of liquid phase hydrocarbons (LPH) impacting Spa Creek. In a letter dated Jan. 28, 2019, the OCP approved a subsurface investigation between the Wiley H. Bates Middle School property and the stormwater outfall at Spa Creek.

AACPS completed the site investigation between Mar. 12 and 14, 2019 with supplemental data collection on Apr. 4, 2019. During these 2 mobilizations, a total of 28 direct-push borings were advanced. All borings were field-screened for the presence/absence of petroleum impacts with a photoionization detector. Soil and groundwater samples were collected from each boring unless LPH were detected, then only a soil sample was collected from that boring. Measureable LPH were detected in borings B-15, B-17, and B-18 at thicknesses ranging from 0.6 to 1.6 feet. Elevated dissolved phase hydrocarbons were detected in samples collected from borings B-14, B-19, B-20, and B-22. Liquid and dissolved phase petroleum detections were centered in the area adjacent to the school building near the boiler room sump and in the area of the former underground storage tank (UST) field. Borings advanced along the storm drain, in the field between the school and Spa creek, were all non-detect for petroleum impacts. Only 3 of the 28 borings advanced were dry (B-16, B-21, and B-23).

AACPS submitted the *Proposed Corrective Action Plan (CAP)* to address the petroleum contamination. The *CAP* proposes the installation of four 4-inch-diameter recovery wells and six 4-inch-diameter monitoring wells. The wells are to be installed in the areas of documented LPH and dissolved phase impacts. All drilling is to be completed via hollow stem auger to a minimum depth of 30 feet below the ground surface (bgs). Wells will be completed in accordance with MDE's *Maryland Environmental Assessment Technology* guidance document with 25 feet of screen and 5 feet of solid riser. Following installation, weekly enhanced fluid recovery (EFR) events will be conducted to recover LPH. These events are proposed to continue until the targeted wells no longer accumulate LPH.

The *Addendum to Proposed Corrective Action Plan* (*Addendum*), dated May 13, 2019, was submitted as an additional effort to expedite LPH recovery and prevent further migration of LPH to surface waters of the state. The *Addendum* proposes to expose the stormwater pipe adjacent to the building, investigate the integrity of the pipe, and complete necessary repairs. All petroleum-impacted soils identified during this excavation will be stockpiled for proper off-site disposal, and any LPH or petroleum-impacted waters encountered will be recovered via vacuum truck.

The MDE hereby approves the *CAP* and the *Addendum* contingent upon the following modifications:

Addendum to Proposed Corrective Action Plan:

1) **No later than June 24, 2019**, begin the excavation.

   a. All safety aspects must be considered during implementation, including structural integrity of the adjacent building and utilization of excavation stabilization equipment to ensure the safety of the workers if pipe repairs are required.

   b. It is the responsibility of AACPS and its contractors to obtain all appropriate permits prior to beginning excavation.

   c. All excavated petroleum-impacted soils must be stockpiled on plastic and covered with plastic until proper disposal is secured. The OCP recommends the collection of pre-characterization soil samples to secure proper off-site disposal prior to conducting any excavation, in an effort to expedite disposal.

   d. If structural engineers determine that excavation under this *Addendum* is not possible, AACPS must submit an alternative work plan that includes a safe method of evaluating and making the necessary repairs to the storm drain, **no later than June 17, 2019**.

Proposed Corrective Action Plan:

2) **No later than July 19, 2019,** install and properly develop the proposed monitoring and recovery wells. Locations of the proposed recovery wells and perimeter monitoring wells may be field-modified based on the location of underground utilities and/or the limits of excavation conducted under the approved *Addendum*.

a. Complete monitoring and recovery well installation under the direct supervision of a Maryland-licensed well driller. It is the responsibility of AACPS and its contractors to obtain all drilling permits from the Anne Arundel County Health Department prior to drilling.

b. All petroleum-impacted waste material generated during assessment activities must be properly stored and disposed. Waste disposal documentation must be provided to the OCP.

c. The OCP requires the installation of 3 additional perimeter monitoring wells to monitor other potential migratory pathways. See the enclosed site map for these locations (MDE-1, MDE-2 and MDE-3).

d. The OCP requires the installation of an additional tank field monitoring pipe in the southwest corner of the active UST field. This pipe must be installed just outside the tank field backfill material to prevent damage to the active UST system during installation. This well must be installed at least 5 feet below the water table (approximately 18 feet) (see enclosed map). The OCP suggests shifting proposed "B-23" to meet this requirement.

e. As part of the installation process, the new wells must be developed using active surging in addition to pumping/purging. All installed wells must be surveyed and accurately depicted on a map.

f. **No sooner than 7 days following well installation**, collect groundwater samples from all wells that do not exhibit 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 8015.

g. **Within 45 days of completing well sampling**, submit a *Well Installation Summary Report and First Quarter Sampling Report*. This *Report*, at a minimum must include: well completion reports; detailed data summary tables and scaled site maps showing monitoring/recovery well locations; a discussion of supplemental sampling events; and details on sampling procedures. The *Report* must also include: groundwater contour maps; cross-section maps depicting significant site features (boiler room, boiler room sump, newly installed wells, stormwater discharge pipe, historic and current UST field); groundwater flow, LPH thickness(es) and dissolved concentration maps; and detailed discussion of the locations selected for the installation of additional permanent monitoring wells.

h. The OCP reserves the right to require the installation of additional monitoring wells if full delineation is not achieved with the proposed monitoring well network.

3) Based on the thicknesses of LPH detected in the temporary monitoring wells, the OCP approves the proposed EFR events as an interim measure.

   a. Following the collection of initial groundwater samples required above, begin EFR in all wells exhibiting measurable thicknesses of LPH.

   b. The EFR events must be implemented on a bi-weekly basis (2 events per week) for a period of 60 days. The duration and frequency of the EFR events may be modified based on the results of the approved excavation under the *Addendum* and based on observed field conditions.

   c. EFR wells must be gauged before, during (at 30-minute intervals), and after completing the event for calculation of groundwater depression influence. The OCP recommends using magnahelic gauges on the perimeter wells to gauge and calculate vapor influence during the event, as well. Dedicated EFR stinger tubes must be set no deeper than 2 feet below the measured depth of LPH.

   d. The OCP concurs with gauging the truck following each event to document the LPH and liquids recovery.

   e. **Within 45 days of completing EFR activities,** submit an *Evaluation Report* detailing the results of the EFR activities. The report must include: daily and cumulative calculated recovery totals (LPH and petroleum impacted water); liquid and vapor radii of influence calculations; tabulated sampling and monitoring parameters generated during in-field testing; and discussions of results to determine if a more permanent system would be remedially effective for further reduction of contamination in this area. Based on the artificially high water table, discussions of water table drop and the potential for recovered fuel vs. trapped fuel must also be considered.

4) Contact the OCP at least 5 working days prior to conducting any field activities at this site.

Continued Site Monitoring:

5) The AACPS and its contractors must continue to inspect Spa Creek at the stormwater outfall for the recovery of LPH. These inspections must be conducted 3 times per week **and** after each significant storm event. Outfall inspections are to include: evaluation of the absorbent materials in the creek and stormwater manway portals; changing out of the sorbent materials as necessary; recovery of LPH as necessary; photo documentation of the conditions in and around the outfall and manway portals; and quantification of the amount of LPH recovered during each inspection, including cumulative recovery totals. The results of each inspection must be provided in writing, via email, to the OCP case manager (Ms. Lindley Campbell) within 24 hours of completing the inspection. These inspections must continue until the OCP provides written documentation changing the schedule or discontinuing the inspections.

6) Begin to provide **hard copy reports on a monthly basis** that summarize the conditions of the stormwater outfall and Spa Creek during inspections as well as the LPH recovery work conducted (i.e., dates of inspection and recovery, recovery methods, estimate of volume recovered, disposal of liquids skimmed, photo documentation).

7) Begin monthly gauging of all wells and quarterly (every 3 months) sampling of all wells not exhibiting measurable thicknesses of LPH. All samples collected must be analyzed for full-suite VOCs, including fuel oxygenates and naphthalene, using EPA Method 8260 and TPH-DRO and TPH-GRO using EPA Method 8015B.

8) **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.

Outstanding Compliance Issues:

9) In the *Request for Subsurface Investigation Work Plan*, dated Nov. 20, 2018, the OCP required a formal summary of the initial recovery and clean-up work to be submitted by Dec. 10, 2018. This report has not been received and is now considered past due. The OCP did receive an email with numerous attachments dated Dec. 10, 2018 (copy enclosed) that does not fully answer the below listed questions. The MDE required these attachments be sent in writing to the OCP, but the hard copies were never received. At a minimum this report must include:

   a. A review of the inventory records to determine how much oil was released during the Dec. 2017 and April 2018 release events;
   b. A review of records to document how much LPH and impacted water has been recovered at this site since the Dec. 2017 release;
   c. Disposal receipts for liquids and absorbent materials;
   d. A complete description of circumstances contributing to the spill;
   e. A complete description of containment, removal, and clean-up operations including disposal sites;
   f. Procedures, methods, and precautions instituted to prevent recurrence of an oil spill from the facility involved; and
   g. Formal summaries of the procedures and findings of the 2 camera events conducted on the stormwater system, including the video footage on a labeled compact disc (CD).

Based on our review, the completed subsurface investigation documented the presence of LPH in the soils adjacent to the school, but does not provided any additional insight as to where petroleum is entering the storm drain. LPH and fuel odors remain present in SW Manway No. 1, Inlet No. 22, and Inlet No. 4 (see enclosed site map) and continue to exit the storm water management systems into Spa Creek following significant rain events. Until the point of entry of fuel into the storm drain is identified and repairs are completed to prevent further migration of LPH to Spa Creek, the OCP continues to view this matter as a significant situation requiring an expedited response.

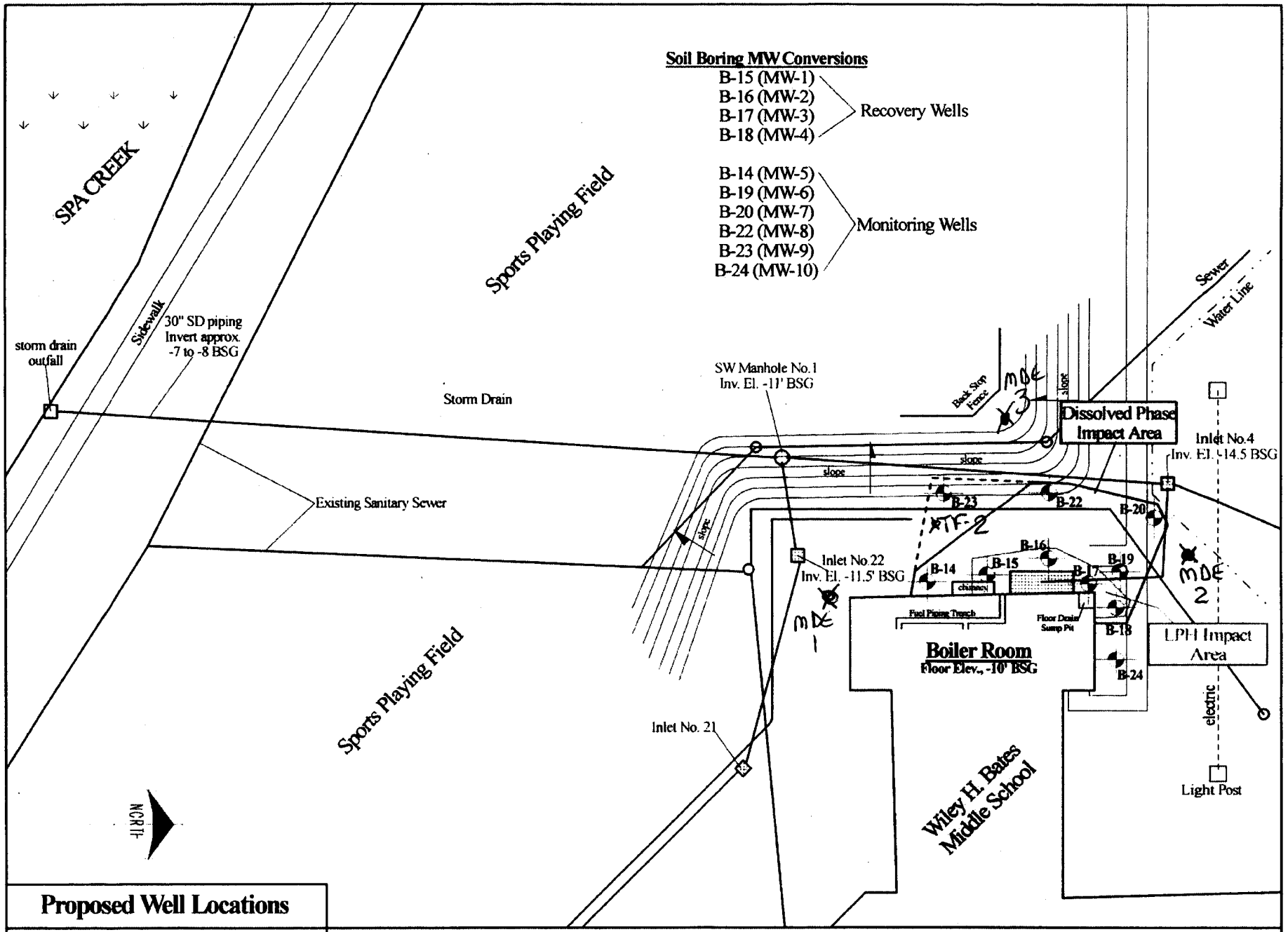
If you have any questions, please contact Ms. Lindley Campbell at 410-537-3387 (*lindley.campbell1@maryland.gov*) or me at 410-537-3499 (*susan.bull@maryland.gov*).

Sincerely,

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

Enclosure: Site Map with Well Locations
Dec. 10, 2018 Email

cc: Mr. William Dehn, Director, Environmental Health, Anne Arundel County Health Department
Ms. Ginger D Klingelhoefer-Ellis, Watershed & Ecological Services, Anne Arundel County DPW
Ms. Lindley Campbell, Case Manager, Remediation and State-Lead Division, Oil Control Program
Mr. Andrew B. Miller, Chief, Remediation and State-Lead Division, Oil Control Program
Mr. Christopher H. Ralston, Program Manager, Oil Control Program
Ms. Kaley Laleker, Director, Land and Materials Administration



Proposed Well Locations

Petroleum Management, Inc.
5218 Curtis Avenue
Curtis Bay, MD 21226
410-354-0200

Job Name: Wiley H. Bates Middle School - Corrective Action Plan

Location: 701 Chase Street, Annapolis, MD 21401

Drawn By: WSA **Scale:** 1" = 50' **Date:** 04/23/2019

MARYLAND

Susan Bull -MDE- <susan.bull@maryland.gov>

Re: Response to Request for Bates MS Subsurface Investigation Work Plan-Attachments (1/3)

1 message

Michael Edillon -MDE- <michael.edillon@maryland.gov> Mon, Dec 10, 2018 at 2:53 PM
To: "Williams, Christopher E" <cewilliams@aacps.org>
Cc: Susan Bull -MDE- <susan.bull@maryland.gov>, Michael Jester -MDE- <michael.jester@maryland.gov>, "Ander, John F" <jander@aacps.org>, "Seaman-Crawford, Lisa A" <LSEAMAN-CRAWFORD@aacps.org>, "Wells, Brian C" <bcwells@aacps.org>, "McCafferty, Michael S" <MMcCafferty@aacps.org>, "Prince, Ernest J" <EPRINCE@aacps.org>, "Perpley, James S" <JPERPLEY@aacps.org>, "Shephard, David W" <DSHEPHARD@aacps.org>, "Taylor, Lorenzo" <LTAYLOR2@aacps.org>, "Lammers, Zachary A" <zlammers@aacps.org>, "Taylor, Antoine T" <ATTAYLOR@aacps.org>, "Ohara, Christopher P" <COHARA@aacps.org>, "Hall, Diane C" <DHALL@aacps.org>

Mr. Williams,

Please provide a digital copy in .pdf format on disc and three hard copies of the report. Thank you.

Mike

On Mon, Dec 10, 2018, 1:52 PM Williams, Christopher E <cewilliams@aacps.org> wrote:

Dear Ms. Bull: In response to an email from Michael Jester dated November 2, 2018, and subsequent correspondence from you dated November 20, 2018, I have attached files here and under separate cover containing all the pertinent information you requested for this Case #2018-0559-AA. In addition, specific questions posed by Mr. Jester in his November 2nd email are answered below:

1. Our Plumbing Team was unable to identify the location of a second monitoring well after several site visits. It may in fact not even exist. We hope to address this issue as part of our agreed work plan.

2. Inventory records have been included in the attached file material.

3. Maintenance procedures for investigating a potential release are also included in the Oil Spill and Control Procedures document in the package.

4. Our two (2) 10,000 gallon fuel oil storage tanks are read weekly and the inventory records have been included in this package.

5. There are no releases or discharges to a wastewater treatment plant.

6. Documentation on visual inspections including photographs has been included in the attached material. We continue to perform inspections at least twice per week and after rain events.

7. Emails relating to inspections and cleanup actions have been included in the attachments.

8. An inspection into the discharge points of each floor drain was conducted on December 7, 2018, and confirmed that all floor drains empty into the sump pump which does not discharge into the storm drain system.

9. Documentation into the flushing of the storm drain system conducted on May 2, 2018, has been included in the package.

In reviewing your letter dated November 20, 2018, there are several clarifications and corrections that need to be made. The incident on April 27, 2018, was not a release to the storm water system and outfall, but rather a discharge into the boiler room itself. It was contained in the sump pump which had been modified since the original spill on December 31, 2017, and the floor trenching system. There was no release to the environment. Secondly, the original incident occurred on December 31, 2017, and not December 21st as mentioned in your correspondence.

We are currently working on developing a subsurface investigation plan with our contractor Petroleum Management scheduled for December 11, 2018. It will include a proposal to sample soil around our underground fuel oil tanks and the length of the subsurface storm drain from the school parking lot to the outfall. We look forward to working with MDE to provide for an acceptable Subsurface Investigation Work Plan. If you have any questions or require additional information, please let me know.

Thanks,

Christopher E. Williams, M.H.S., C.I.H.

Environmental Issues Program Manager

Anne Arundel County Public Schools

Facilities Division

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