W-5103-0002
May 30, 2025

Reilly Cusick, Environmental Scientist 1
Rhode Island Department of Environmental Management
Office of Land Revitalization & Sustainable Material Management
235 Promenade Street
Providence, RI 02908
Via Email Transmission

Re: **Additional Site Investigation Work Plan**
Pilgrim High School
111 Pilgrim Parkway
Warwick, Rhode Island
SR-35-2241

Dear Ms. Cusick:

On behalf of our Client, the Warwick Public School District (the District), Tighe & Bond is submitting a Site Investigation Work Plan (SIWP) for the above-referenced Site. As the Rhode Island Department of Environmental Management (RIDEM) is aware, Tighe & Bond conducted environmental site assessment activities in support of a Rhode Island Department of Education (RIDE) School Building Authority (SBA) capital improvement project. An ASTM Phase I Environmental Site Assessment (ESA) was completed on January 3, 2025 and subsurface investigations associated with Phase II ESA activities were conducted in February and March of 2025. A copy of the Phase I ESA is included with this letter.

As a result of those investigations, polycyclic aromatic hydrocarbons (PAHs), Total Petroleum Hydrocarbons (TPH) and total arsenic and total lead were identified above the RIDEM Residential Direct Exposure Criteria (RDEC) in 15 out of 51 soil samples collected at the Site. Three groundwater samples were also collected from monitoring wells installed at the Site and analyzed for volatile organic compounds (VOCs) due to the Site's location in a RIDEM GB Groundwater Area. The results of analysis identified vinyl chloride in one well in excess of the GB Groundwater Criteria (GC).

Due to these concentrations Tighe & Bond submitted a Release Notification Form (RNF) to RIDEM on behalf of Warwick Public Schools on March 27, 2025. A Phase II ESA Report was not written since those findings will be incorporated into the Site Investigation Report (SIR) required by the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (the Remediation Regulations) moving forward. The Phase I and II ESA activities included many of the requirements for a Site Investigation (SI) as set forth in the Remediation Regulations. The purpose of this SIWP is to outline the additional research and field investigations proposed to be completed for the SI.

1. Research to Address SI Requirements and Phase I RECs

Tighe & Bond is conducting additional focused research in association with the District relative to the Phase I ESA data gaps, and reportable conditions resulting from the Phase II subsurface investigations. This includes, but is not limited to, reviewing additional historical Site plans located by the District, aerial photographs beyond those available on the RIDEM Environmental Resources Map (ERM), and internet searches, in addition to reaching out to the community via the Public Meeting held on May 8, 2025.

Though we are not finished with this work, Tighe & Bond identified reference to replacement of an "original cinder track" at the Site c1995. Other online sources refer to cinder tracks as "cinder ash tracks." Contaminants associated with these tracks are identified as PAHs, arsenic and lead, which corresponds to soil contaminants identified at the Site proximate to current (and former) track and field locations. A historic release of "bunker oil" is also reported as having occurred proximate to the current and former underground storage tank (UST) area.

2. Proposed Additional Investigation Work Plan

Although results of the additional research, including other possible sources of impact, will be utilized to establish final soil boring and monitoring well locations at the Site, Tighe & Bond has developed an Additional Investigation Work Plan approach for review by RIDEM. The enclosed figure shows proposed locations of additional soil borings and monitoring wells intended to complete the Phase II ESA scope of work. The selected locations are based on currently available information and analytical data and may be modified as additional information is obtained. The distribution of soil borings and monitoring wells shown on the figure is intended to:

- Identify the extent of shallow PAH, lead and arsenic impacts and verify they are limited to surface soils (no greater than two-feet below ground surface (bgs));
- Conduct additional soil borings proximate to the UST area to evaluate TPH and PAH impacts presumed to be associated with the former #6 oil tanks and/or a historic "bunker oil" spill; and
- Evaluate the source of vinyl chloride (VC) present in the groundwater sample collected from MW-3, determine the groundwater flow direction, and evaluate the extent of contamination. The final number and location of monitoring wells at the Site will be determined based on the groundwater flow direction and the completion of additional research described above.

A Tighe & Bond field engineer/scientist will be present during the drilling program to evaluate soil cores, conduct headspace field screening with a photoionization detector (PID) for total volatile organic vapors (TVOVs). Tighe & Bond's observations of the soil conditions and the results of the field screening will be documented on boring logs.

Soil samples will be collected in accordance with Tighe & Bond Standard Operating Procedures (SOPs) and analyzed by a National Environmental Laboratories Accreditation Conference (NELAC)-certified laboratory. All soil samples will be placed in laboratory prepared glassware that is appropriate for the analysis to be conducted. The samples will be placed in clean, iced coolers for transport to the analytical laboratory in accordance with standard chain-of-custody procedures. Tighe & Bond manages environmental data received from most of its analytical testing laboratories via EnviroData®. EnviroData® is a data management and analytics platform used to manage, analyze and report analytical results.

The following outline of work is proposed, subject to completion of the SI research described in Section 1 above:

2.1 Soil Borings and Monitoring Wells:

Tighe & Bond estimates that approximately 33 soil borings will be advanced via direct-push technology at the Site. An additional 5 hand auger samples will be collected in the building "courtyards" from approximately zero to 2-feet. The approximate locations are shown on the enclosed plan. Some of these locations were proposed for the Phase II ESA boring program initiated on February 21, 2025 but were not completed due to time limitations. Other locations have been added based on research conducted to date.

Additional monitoring wells will be installed to identify and/or evaluate the source, concentration and extent of VC in groundwater at the Site. This includes proposed monitoring wells along the perimeter of the property. Preliminary locations proposed are shown on the enclosed figure, however, the actual number and locations will be established in the field.

Standard 2-inch diameter polyvinyl chloride (PVC) monitoring wells will be installed at each proposed location. Approximately 10 feet of 0.010 slotted PVC well screen will be installed at each boring to span the water table depth observed during drilling, with solid PVC riser extending to the ground surface, or above ground surface, depending on the location. A sand pack will be installed around and above the well screen. The sand pack will be topped with a bentonite seal. Wells will have bottom plugs, gasketed caps, and be protected by a locking steel standpipe or road box cemented in place.

Five hand borings will also be advanced in the exterior courtyards located within the footprint of the building. Where possible, hand boring samples will be collected within the top two to three feet of soil to obtain information within the "building footprint" area without drilling through school floors.

2.2 Proposed Soil Sampling and Analytical Approach

- Up to two soil samples (surficial and subsurface) will be collected from the proposed direct-push boring locations. No sampling of soil below the groundwater table is proposed at this time. Based on the results of Phase II ESA sampling and analysis we propose analyzing soil samples for PAHs, TPH, Total Arsenic and Total Lead.

- PID headspace field screening will be conducted during the boring program. Soil samples to be analyzed for VOCs will be determined based on PID soil headspace screening results, sample location relative to the building and MW-3, visual observations in the field, and historical location use (e.g. proximity to chemistry and/or shop classrooms, the UST area (current and former)). Since one objective of the SI is to identify the source of VC in groundwater, we have assumed approximately half of the soil samples will be analyzed for VOCs (estimated at 18 samples).

2.3 Groundwater Development, Sampling and Analysis

- After each monitoring well is installed, Tighe & Bond will gauge the monitoring well with an oil/water interface probe to measure depth to water and check for the presence of non-aqueous phase liquid (NAPL) at the top, and bottom, of the water column.

- If NAPL is not present, Tighe & Bond will use a submersible whale pump to develop each monitoring well. A minimum of three well volumes of water will be removed from each well during development and collected in a bucket. If no visual or olfactory evidence of impact is observed, the purge water will be returned to the ground surface in the immediate vicinity of the monitoring well. If observations or field monitoring indicate potential contamination concerns, the groundwater will be temporarily containerized on Site pending results of groundwater analysis.

- Tighe & Bond will allow the wells to equilibrate for a minimum of 72-hours before returning to collect groundwater samples. Prior to sampling, monitoring wells will again be gauged using an oil/water interface probe to measure depth to water and to check for the presence of NAPL. Each monitoring well will then be sampled using low-flow sampling methodology. Purge water will be managed as described above.

- Tighe & Bond is proposing to sample groundwater for VOCs.

- Tighe & Bond will complete a wellhead elevation survey of the groundwater monitoring wells to determine groundwater elevations and generate a groundwater contour map. Elevations will be surveyed to an assumed on-Site datum and well elevations will be surveyed to the top of PVC inside the standpipe or road box.

Please let us know if you have any questions about the proposed Additional Investigation Work Plan described above and shown on the attached Site Plan.

Very truly yours,

TIGHE & BOND, INC.

John Harvey, LSP
Principal Environmental Scientist

Suzanne C. Courtemanche, LSP, CHMM
Vice President

Enclosure

CC: S. Gothberg, Warwick Public Schools
J. Bates, LeftField

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B-42
B-43
B-2/MW-2
VC
B-5/MW-3
B-4A/B-4B
B-3A/B-3B
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LEGEND

- SHALLOW SOIL BORING
- SOIL GAS POINT
- MONITORING WELL
- Proposed Hand Auger Location
- Proposed Soil Boring
- Proposed Monitoring Well
- PAH Exceedance
- Metals Exceedance
- TPH Exceedance

PILGRIM HIGH SCHOOL
WARWICK, RHODE ISLAND

SITE PLAN

Proposed Additional Investigation Areas

DATE: 5/30/2025
SCALE: AS SHOWN

Tighe&Bond

Plotted On:Mar 21, 2025-1:09pm By: ZLepore
Tighe & Bond:J:\W\W5103 Warrick, RI\0002 - Pilgrim & Tollgate HS ESA\DrawingsAutoCAD\W5103-0002-Tollgate.dwg