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December 30, 2024

Robert Moore, Environmental Health Technician City of Haverhill 4 Summer Street Haverhill, MA 01830

RE: Final Peer Review – Winter Street Remediation Notice of Intent 284 Winter Street, Haverhill, MA Fuss & O'Neill Reference No. 20170390.U80

#### Dear Mr. Moore:

Fuss & O'Neill has conducted a review of the Notice of Intent (MassDEP File No. 033-1577) submitted by Anchor QEA on behalf of the Boston Gas Company, for the Winter Street Remediation project located at 284 Winter Street in Haverhill, Massachusetts (the "Site"). The remediation includes the installation of an air sparge and soil vapor extraction system at 284 Winter Street, and a temporary cap within a portion of the Mass-DEP Waterways licensed semi-permanent boom system within the Little River adjacent to 284 Winter Street. The Site is associated with MassDEP Release Tracking Numbers (RTNs) 3-32791 and 3-32875. We offer these follow up comments in response to the "Responses to Fuss & O'Neill Peer Review" letter prepared by Anchor QEA dated December 12, 2024.

Fuss & O'Neill is familiar with this portion of the Little River, as we have been working for the City of Haverhill over the course of the past three years to design and permit the Little River Dam Removal and River Restoration (MassDEP File Nos. 33-1551 and 33-1552) just upstream of this proposed remediation.

### Materials Reviewed:

- 1. HCC Local Application Form 3
- 2. Document titled "Proposed Upland Remediation Plan," dated September 16, 2024, prepared by Anchor QEA
- Document titled "Proposed Sediment Remediation Plan," dated September 16, 2024, prepared by Anchor QEA
- 4. Document titled "Stormwater Report and Checklist," dated September 18, 2024, prepared by GZA
- 5. Document titled "284 Winter Street Former MGP Haverhill," dated October 3, 2024, prepared by Anchor QEA
- 6. Document titled "Revised Phase III Remedial Action Plan & Phase IV Remedy Implementation Plan" dated June 13, 2024, prepared by GZA Geoenvironmental, Inc.
- 7. Document titled "Responses to Fuss & O'Neill Peer Review Winter Street Remediation Notice of Intent for 284 Winter Street," dated December 12, 2024, prepared by Anchor QEA

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This final peer review letter includes responses by Fuss & O'Neill to Anchor QEA's December 12, 2024 letter. The format below include Fuss & O'Neill's original comments (December 4, 2024) in **bold font**, followed by Anchor QEA's response (December 12, 2024) in *italicized font*, followed by Fuss & O'Neill's final comment (December 30, 2024) in normal font. Any comments excluded from this letter were identified as not warranting a final response from Fuss & O'Neill, as Anchor QEA satisfactorily responded in the December 12, 2024 letter.

### Notice of Intent - Winter Street Remediation, September 2024 (MassDEP File #: 033-1577)

#### Wetlands Protection Act, Chapter 253 and Stormwater

1. Fuss & O'Neill: The project narrative indicates that sediment removal activities are not being conducted, therefore turbidity management and/or monitoring is not proposed. We recommend that the Conservation Commission require the contractor or Applicant to closely monitor construction activities to ensure turbidity is not being generated within the river and require them to install turbidity management at the first sign of any turbidity discharge to the river to meet the performance standard for a limited project per 310 CMR 10.53(3)(q)(2)(b) for best management practices. The Commission may consider adding a Special Condition to require the selected contractor to have a turbidity curtain readily available for installation in the event of observations of excessive turbidity.

Anchor QEA: Due to the shallow water depths and currents in the Little River, it is anticipated that installation of a turbidity curtain downstream of the work area would be ineffective and may result in the generation of additional turbidity at the location of the curtain. Instead, Boston Gas Company has designed the proposed activities in the river with the goal of limiting turbidity generation. To this end, the temporary cap is being constructed of layers of reactive core mat and armor mattresses rather than placement of loose (unconfined) fine-grained granular organoclay and sand, as has been placed at other projects. To further reduce the potential for turbidity generation, the contractor will be required to implement best management practices throughout the work. Specifically, the temporary cap will be placed using a crane located in the upland portion of the Site; only limited sediment surface preparation will be conducted prior to placement of the temporary cap; and the cap materials will be placed without dragging over the sediment surface. No anchoring of the mattresses to the river channel bottom is proposed during the work. With this design and implementation, significant turbidity generation is not anticipated.

Construction activities will be closely monitored for visual observations of turbidity generated by temporary cap installation activities. If visual observations of excessive turbidity are observed, work practices will be altered (e.g., slow down mat placement) to address the source of the turbidity generation.

Fuss & O'Neill: We agree that the construction approach is expected to generate low turbidity; but if excessive turbidity is observed, construction should be temporarily halted and resumed when a better construction approach that results in less turbidity is identified.

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> We recommend the Commission include a Special Condition requiring notification of the corrective action by email within 24 hours. We also recommend the Commission to require the Applicant to provide contact information of the project manager or on-site representative that can be contacted by the Commission within working hours over the course of the installation.

- 2. As the project includes reuse of degraded or previously developed areas, which were degraded prior to August 7, 1996, the project requires evaluation under the Riverfront Area Redevelopment standards per 310 CMR 10.58(5) rather than the general performance standards for Riverfront Area. Please describe compliance with the Riverfront Area Redevelopment standards.
  - a. Although the project may qualify for a limited project, the Applicant must describe how performance standards are met to the maximum extent practicable. When considering meeting the standard for improvement over existing conditions per 310 CMR 10.58(5)(a), if applicable, the Applicant should consider opportunities for impervious area removal, installation of native species, and/or invasive species management. As the site is very developed, we suggest the Commission require invasive species management for species along the retaining wall, if present.

As requested, Riverfront Area Redevelopment criteria are addressed below: • 310 CMR 10.58(5)(a) – The project is a remediation project that is intended to improve subsurface conditions in an area that was previously degraded by historical manufactured gas plant (MGP) operations. The majority of the proposed activities in the Riverfront Area (air sparge/soil vapor extraction (AS/SVE) system and limited soil excavation) are occurring within paved or areas landscaped with ornamental species; these areas will be restored to existing conditions (i.e., pavement or landscaping) following completion of remediation activities, consistent with current site usage (i.e., active gas station owned by HEG 284 Winter Street LLC). Boston Gas Company concurs that invasive species management along the retaining wall, if present, would represent an improvement over existing conditions.

• 310 CMR 10.58(5)(b) – Stormwater standards have been addressed as part of the Notice of Intent application.

• 310 CMR 10.58(5)(c) through (e) – The location of AS/SVE system and limited excavation activities is driven by the presence of OHM-impacted soil and groundwater and is designed to meet the requirements of 310 CMR 40.0000. Therefore, there is limited to no flexibility in the location of remediation activities within the Riverfront Area. The majority of the proposed activities in the Riverfront Area (AS/SVE system and limited soil excavation) are occurring within paved or landscaped areas; proposed activities are not being conducted in undisturbed/undeveloped areas. Conditions in the Riverfront Area will be substantially improved by the removal of coal tar-impacted material and the reduction of dissolved benzene constituents in groundwater in proximity to the river.

• 310 CMR 10.58(5)(f) – The majority of the proposed activities in the Riverfront Area (AS/SVE

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system and limited soil excavation) are occurring within paved or landscaped areas; these areas will be restored to existing conditions (i.e., pavement or landscaping) following completion of remediation activities, consistent with current site usage (i.e., active gas station). Boston Gas Company concurs that invasive species management along the retaining wall, if present, would represent an improvement over existing conditions.

• 310 CMR 10.58(5)(g) – The majority of the proposed activities in the Riverfront Area (AS/SVE system and limited soil excavation) are occurring within paved or landscaped areas; these areas will be restored to existing conditions (i.e., pavement or landscaping) following completion of remediation activities, consistent with current site usage (i.e., active gas station).

• 310 CMR 10.58(5)(h) – This condition is not applicable; restoration or mitigation areas are not being created as part of the project.

We recommend the Commission require an invasive species special condition described below. Prior to commencement of construction, the Applicant shall assess the retaining wall along the project limits for invasive species and provide a summary of results to the Commission. If invasive species are identified, the Applicant shall provide an invasive species management plan for species observed. Implementation of this plan may occur after planned remediation activities, as effective management of species may be required outside the construction period.

### Potential Impacts to Little River Dam Removal and River Restoration

3. It is important that the temporary cap be designed to withstand normal and flood flows that are anticipated within this section of the Little River since it will likely be in-place for potentially 2 years or until the full-scale remediation project is implemented (currently planned for the summer of 2026). Based on the results of Fuss & O'Neill's hydraulic (HEC-RAS) model, both pre- and post-dam removal flow velocities in the section of the Little River downstream of the Winter Street Bridge range from 2.1 feet per second during low-flow or dry-weather conditions to 6.8 feet per second during flood conditions. Additionally, pre- and post- dam removal maximum shear channel stresses within this portion of the river channel were computed to range between 0.15 to 0.92 lbs/sf. Please specify what flow velocity and/or shear stress the reactive core mat with organoclay and 6-inch armor mattress is designed to withstand. Please confirm and provide the size/gradation of the stone armor to be used to create the armor mattress.

The 6-inch armor mattresses are reported by the manufacturer to withstand up to 21.5 lbs/sf shear stress and 22.6 feet per second velocity. Per the manufacturer's specifications, the armor mattresses will be filled with well-graded, angular stone between 1.5 and 4.0 inches.

Note that shear stress and flow velocities than can be withstood by the 6-inch armor mattress is greater than what will be experienced during flood events. No further comments.

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### **Special Conditions Recommendations:**

We recommend the following Special Conditions:

- 1. Special Conditions described in comments 1 and 2 above.
- 2. Upon completion of construction, the Applicant shall submit the following to the Commission to request a Certificate of Compliance (COC):
  - a. A Completed Request for a Certificate of Compliance form (WPA Form 8A or other form if required by the Conservation Commission at the time of request).
  - b. A letter from a Registered Professional Engineer certifying compliance of the property with this Order of Conditions, and detailing any deviations that exist, and their potential effect on the project.
  - c. An "As-Built" plan signed and stamped by a Registered Professional Engineer, Land Surveyor, or equivalent professional showing post-construction conditions within all areas under the jurisdiction of the WPA and the Ordinance.
  - d. Photographs demonstrating compliance with the issued Order of Condition.

Sincerely,

April Doroski, PWS, CPSS Wetland Scientist | Permitting Specialist