January 24, 2023

Mr. Alex Vigliotti
Vigliotti Construction Company
140 North Branford Road
Branford, CT 06405

Re: Wetland and Watercourse Site Investigation
Mariner's Point Apartments
71 South Shore Drive
East Haven, Connecticut
SLR #141.12709.00035

Dear Mr. Vigliotti,

As requested, I visited the property at 71 South Shore Drive in East Haven, Connecticut to determine the presence or absence of wetlands and/or watercourses, to demarcate (flag) the boundaries of wetlands and watercourses identified, and to identify onsite soil types. This letter includes the methods and results of my investigation, which was completed on January 4, 2023. In summary, no inland wetlands and/or watercourses were identified on the subject parcel.

Regulatory Definitions

The Inland Wetlands and Watercourses Act (Connecticut General Statutes §22a-38) defines inland wetlands as "land, including submerged land...which consists of any soil types designated as poorly drained, very poorly drained, alluvial, and floodplain." Watercourses are defined in the Act as "rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon the state or any portion thereof." The Act defines intermittent watercourses as having a defined permanent channel and bank and the occurrence of two or more of the following characteristics: a) evidence of scour or deposits of recent alluvium or detritus, b) the presence of standing or flowing water for a duration longer than a particular storm incident, and c) the presence of hydrophytic vegetation.

The Tidal Wetlands Act (Connecticut General Statutes §22a-28) defines wetlands as "those areas which border on or lie beneath tidal waters, such as, but not limited to banks, bogs, salt marsh, swamps, meadows, flats, or other low lands subject to tidal action, including those areas now or formerly connected to tidal waters and whose surface is at or below an elevation of 1 foot above local extreme high water; and upon which may grow or be capable of growing hydrophytic vegetation as identified in the Statutes."

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Methodology

A second-order soil survey in accordance with the principles and practices noted in the United States Department of Agriculture (USDA) publication *Soil Survey Manual* (1993) was completed at the subject site. The classification system of the National Cooperative Soil Survey was used in this investigation. Soil map units identified at the project site generally correspond to those included in the *Soil Survey of the State of Connecticut* (USDA, 2005).

Wetland determinations were completed based on the presence or absence of poorly drained, very poorly drained, alluvial, or floodplain soils and submerged land (e.g., a pond). Soil types were identified by observation of soil morphology (soil texture, color, structure, etc.). To observe the morphology of the property's soils, test pits and/or borings (maximum depth of 2 feet) were completed at the site.

Intermittent watercourse determinations were made based on the presence or absence of a defined permanent channel and bank and the occurrence of two or more of the following characteristics: a) evidence of scour or deposits of recent alluvium or detritus, b) the presence of standing or flowing water for a duration longer than a particular storm incident, and c) the presence of hydrophytic vegetation.

If found, wetland boundaries are demarcated (flagged) with pink surveyor's tape (hung from vegetation) or small flags (on wire stakes) that are generally spaced a maximum of every 50 feet. Complete boundaries are located along the lines that connect these sequentially numbered flags. The wetland boundaries are subject to change until adopted by local, state, or federal regulatory agencies.

On the day of the review, the sky was partly cloudy, and air temperatures were in the 50° F range. The ground was snow and frost free. Conditions were suitable for delineation work.

Site Description and Existing Soils

The 3.4-acre subject parcel is located at the intersection of South Shore Drive and Cosey Beach Road in East Haven. Surrounding land use is comprised of single-family and multifamily residential development, an assisted living facility, and an office complex. The subject parcel is located interior to the shoreline and within an intensively modified and developed portion of East Haven. The site currently consists of an approximately 1-acre area disturbed by previous excavation and a periphery of forested uplands. Topography onsite ranges from approximately 23 to 48 feet above mean sea level (msl), with high points within the central fill mound and in the forested southwestern portion of the parcel.

According to the United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS) Web Soil Survey mapping, four soil map units are within the project area. Each map unit represents a specific area on the landscape and consists of one or more soils for which the unit is named. Other soils (inclusions that are generally too small to be delineated separately) may account for 10 to 15 percent of

each map unit. The mapped units are by name, symbol, and typical characteristics (parent material, drainage class, high water table, depth to bedrock, and slope) (**Table 1**). These characteristics are generally the primary characteristics to be considered in land use planning and management. A complete description of each soil map unit can be found in the *Soil Survey of the State of Connecticut* (USDA, 2005) and at *http://soils.usda.gov/technical/classification/osd/index*. The primary soil type within the project area is Cheshire fine sandy loam, 3 to 8 percent slopes.

Table 1 Soil Unit Properties

Map Unit		Parent Material	Slope (%)	Drainage Class	High Water Table			Depth to Bedrock (inches)
Symbol	Name				Depth (inches)	Kind	Months	
Upland Soil								
24A	Deerfield loamy fine sand	Sandy outwash derived from granite, gneiss, and/or quartzite	0-3	Moderately well drained	15-37	-	-	>80
35B	Penwood loamy sand	Sandy glaciofluvial deposits derived from sandstone and shale	3-8	Excessively drained	>80	-	-	>80
63B	Cheshire fine sandy loam	Coarse-loamy melt-out till derived from basalt and/or sandstone and shale	3-8	Well drained	>80	-	-	>80
263B	Cheshire-Urban land complex	Coarse-loamy melt-out till derived from basalt and/or sandstone and shale	3-8	Well drained	>80	-	-	>80

Parent material is the unconsolidated organic and mineral material in which soil forms. Soil inherits characteristics, such as mineralogy and texture, from its parent material. Glacial till is unsorted while nonstratified glacial drift, consisting of clay, silt, sand, and boulders, is transported and deposited by glacial ice. Glacial outwash consists of gravel, sand, and silt, which are commonly stratified, deposited by glacial meltwater. Alluvium is material such as sand, silt, or clay, deposited on land by streams. Organic deposits consist of decomposed plant and animal parts.

A soil's texture affects the ease of digging, filling, and compacting and the permeability of a soil. Generally, sand and gravel soils, such as outwash soils, have higher permeability rates than most glacial till soils. Soil permeability affects the cost to design and construct subsurface sanitary disposal facilities and, if too slow or too fast, may preclude its use. Outwash soils are generally excellent sources of natural aggregates (sand and gravel).

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Conclusions

On January 4, 2023, I evaluated the property at 71 South Shore Drive to determine the presence or absence of inland wetlands and/or watercourses that may be regulated by the Town of East Haven and the State of Connecticut. No regulated resources were identified. The subject parcels are comprised of well drained, moderately well drained, and excessively drained soils derived from glacial till, glacial outwash, and fill material.

Thank you for the opportunity to assist you. If you should have any questions or comments, please do not hesitate to contact me.

Very truly yours,

Megan B. Raymond, MS, PWS, CFM
Principal Scientist, Wetlands and Waterways Lead

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