



Ellen Bartlett, P.E. • CPSWQ, Leed Accredited
August 7, 2025

Town of Montville
Inland Wetlands Commission
ATTN: Douglas K. Brush, Chair
Montville Town Hall
310 Norwich-New London Turnpike
Uncasville, CT 06382

Re: Fluid Line Products LLC
Industrial Building Development
179 Gallivan Lane
Uncasville, CT 06382
GSD-72

Dear Mr. Brush:

On behalf of Fluid Line Products LLC, Green Site Design has performed a delineation and functional evaluation of the inland wetlands at the referenced site and assessed the site to provide a basis for determining the potential for impacts associated with the proposed development of this parcel. Details of the proposed development of this parcel are presented on the site plans.

The inland wetland boundary was delineated by R. Russo (Green Site Design) in November of 2024. The wetland boundary and proposed development are shown on the plans prepared by Green Site Design LLC dated November 2024. This data were augmented with additional online information from CTDEEP, USFWS, USGS, and the Town of Montville GIS.

Site Setting

This site is located just north of Gallivan Lane and just to the east Route 395. It consists of an industrial building with impervious areas such as driveways and parking lots. There is also some lawn area along with a forested wetland, which is located mostly on the northern half of the parcel. Stony Brook Stream runs through the wetlands along the northern and western parts of the site. There is also a 500-year floodplain as determined by FEMA, is associated with Stony Brook Stream. This surrounding area is relatively developed, consisting primarily of residential homes and industrial buildings. This site is zoned as light industrial (LI) and the surrounding properties are listed as both light industrial (LI) and residential (R-20).

Soils

The upland soils mapped by NRCS are listed in the table below. There are hydric soils mapped on the property by NRCS. These include the Raypol and Scarboro Series. Additional descriptive details are provided in an NRCS soil report included as Appendix A.

Table 1 - Soil Types and Properties at the Gallivan Lane Site

<u>Soil Series</u>	<u>Parent Material</u>	<u>Drainage Class</u>	<u>Texture/Characteristics</u>
Raypol	Coarse loamy eolian deposits over sand and gravel glaciofluvial deposits	Poorly drained	Silt loam to stratified gravelly coarse sand to loamy fine sand
Scarboro	Sandy glaciofluvial deposits	Very poorly drained	Muck to gravelly sand
Woodbridge	Coarse loamy lodgment till	Moderately well drained	Fine sandy loam to gravelly fine sandy loam
Udorthents-Urban Complex	Human transported material	Well drained	Loam to very gravelly sandy loam

The Raypol series consists of poorly drained soils formed in eolian deposits overlying glaciofluvial material. They are nearly level sloping soils formed in drainageways. The Scarboro series are very poorly drained soils formed in glaciofluvial deposits. They are nearly level soils found in drainageways depressions, outwash deltas, and outwash terraces. The Udorthents-Urban Complex series contains well drained soils formed by human transported materials. They are nearly level to steep sloping soils and can be found in areas in or near human disturbance. The Woodbridge series consists of very deep moderately well drained loamy soils formed in lodgment till. They are nearly level to moderately steep soils on hills, drumlins, till plains, and ground moraines.

Wetland Characteristics

Classification

The National Wetlands Inventory

(NWI <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>) does show some of the onsite forested and riverine wetlands which are classified as PFO1E and R5UBH. However, there are also some pockets of emergent wetlands which would be classified as a PEM1E. A description of these wetland groups can be found below:

Classification code: PFO1E

System **Palustrine (P)**: The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part

of basin less than 2.5 m (8.2 ft) at low water; and (4) salinity due to ocean-derived salts less than 0.5 ppt.

Class **Forested (FO)**: Characterized by woody vegetation that is 6 m tall or taller.

Subclass **Broad-Leaved Deciduous (1)**: Woody angiosperms (trees or shrubs) with relatively wide, flat leaves that are shed during the cold or dry season; e.g., black ash (*Fraxinus nigra*).

Water Regime **Seasonally Flooded/Saturated (E)**: Surface water is present for extended periods (generally for more than a month) during the growing season, but is absent by the end of the season in most years. When surface water is absent, the substrate typically remains saturated at or near the surface.

Classification code: R5UBH

System **Riverine (R)**: The Riverine System includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts of 0.5 ppt or greater. A channel is an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.

Subsystem **Unknown Perennial (5)**: This Subsystem designation was created specifically for use when the distinction between lower perennial, upper perennial, and tidal cannot be made from aerial photography and no data is available.

Class **Unconsolidated Bottom (UB)**: Includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and a vegetative cover less than 30%.

Water Regime **Permanently Flooded (H)**: Water covers the substrate throughout the year in all years.

Classification code: PEM1E

System **Palustrine (P)**: The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2.5 m (8.2 ft) at low water; and (4) salinity due to ocean-derived salts less than 0.5 ppt.

Class **Emergent (EM)**: Characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.

Subclass **Persistent (1)**: Dominated by species that normally remain standing at least until the beginning of the next growing season. This subclass is found only in the Estuarine and Palustrine systems.

Water Regime **Seasonally Flooded/Saturated (E)**: Surface water is present for extended periods (generally for more than a month) during the growing season, but is absent by the end of the season in most years. When surface water is absent, the substrate typically remains saturated at or near the surface.

Wetland hydrology

There is one regulated area on the northern part of the project site where wetland is present. The wetland has many areas of pooling water and is underlain by sandy soils. This wetland discharges water into Stony Brook Stream that starts right near CT-Route 2A and flows through the wetland until it reaches I-395. From there it flows through a culvert to another wetland off property. Stony Brook Stream is a tributary to the Thames River which flows into Long Island Sound.

Factors important to functional assessment

The following observations are important to the functional assessment and are listed here to provide context to the later discussion of functions and values.

1. Connecticut protected species are not known to be present on the site per the December 2024 update of the CTDEEP NDDDB. See Appendix C.
2. The local zoning is light industrial (LI) and residential (R20) per the Town GIS, and the surrounding parcels appear to be single-family residences.
3. The wetland has eolian deposits over glaciofluvial material along with glaciofluvial deposits around its edges per available online mapping. Detailed soil mapping from the U.S. Web Soil Survey is included within Appendix A.
4. The streams below the wetland onsite have good quality habitat for fish populations, including wild brook trout. Data collected by CTDEEP can be viewed in Appendix E.
5. There are multiple different wetland communities present onsite.

Principal functions

The functional assessment was conducted using the USCAE Highway Methodology (<https://www.nae.usace.army.mil/Portals/74/docs/regulatory/Forms/HighwaySupplement6Apr2015.pdf>). The assessment is included as Appendix B and it revealed that the wetland onsite with a small intermittent watercourse running through it has the following Principal functions:

1. **Groundwater Recharge/Discharge:** Wetland is underlain and borders sandy and gravelly soils and appears to discharge water into Stony Brook Stream.
2. **Floodflow Alteration:** This wetland is very flat, contains dense vegetation, has hydric soil and has standing water within it. It is also part of the mapped 500-year floodplain. GSD believes that this wetland would be able to store a lot of water during a significant storm event.

3. **Sediment/Toxicant Retention:** There multiple residential houses upstream in the watershed with moderate sized lawns that potentially use fertilizers. Given that this wetland is broad, has organic and fine sandy soils, and can hold water for extended periods of time, GSD believes this wetland can retain toxicants.
4. **Nutrient Removal:** The wetland onsite is densely vegetated and has multiple different wetland communities within it which would allow for the attenuation of excess nutrients from fertilizer runoff from homes upstream.
5. **Wildlife Habitat:** There are many different fruiting and flowering plants within this wetland supporting insect populations along with other animals. GSD noticed multiple different bird calls including that of the Northern rough-winged swallow during a site visit on July 24, 2025.
6. **Sediment Shoreline Stabilization:** The stream that runs through this wetland shows signs of sediment deposition and slow-moving water. GSD noted that the streambanks were heavily vegetated by both wetland herbaceous species and trees and shrubs.

Potential for Impacts

As shown on the project plans, the following activities are planned.

1. Construction of a 19,840 SF warehouse building
2. Installation of a concrete sidewalk with curbing
3. Removal of an existing walkway
4. Installation of a 20' x 25' concrete dumpster pad
5. Adding bituminous concrete curbing to the edge propose parking area
6. Installation of 8" PVC roof drains
7. Installation of a stormwater management system, including water quality basins.

Based on the plans, there will be some disturbance in the upland review area due to the following:

1. Removal of existing chain linked fence
2. Removal of pavement to construct water quality basins

The proposed activities outlined above may impact the regulated resource's principal functions in the following ways:

1. **Groundwater Recharge/Discharge:** While there are new impervious surfaces being added to the site, none will occur in the wetland and the stormwater runoff will be redirected into a water quality basin via curtain drain, roof drains, and catch basins. This will allow for the excess water to infiltrate, evaporate, and be treated without impacts on the wetlands.
2. **Floodflow Alteration:** Due to no activity being planned within the wetlands, there will be no impact on the wetlands function to mitigate and store floodwater.
3. **Sediment/Toxicant Retention:** This project does involve earth disturbing activities above the wetland. To prevent excess sediments from entering the wetland, a woodchip berm backed by haybales will be installed just downslope of the proposed development.

Temporary stockpile areas were put outside of the upland review zone surrounded by silt fence. North America Green S-150 erosion control blankets will also be installed in the basin on all 2:1 slope and modified riprap slope paving will be placed on the opposite side of the warehouse building upslope (1 ½ :1) to prevent any erosion. These measures should be enough to ensure no excess sediments from the development of this site will enter the wetland, ensuring its sedimentation and toxicant retention function will not be impeded.

4. **Nutrient Removal:** Currently there are a few junk cars and trailers on site that are likely sources of toxicants. These will be removed, and proper sediment and erosion control measures will be installed to ensure no impact on the wetland. The water quality basin will also effectively store and treat the water generated from the developed impervious areas.
5. **Wildlife Habitat:** The proposed activities won't be within the wetland and most of the construction area will be within an already paved and disturbed area. A buffer of native shrubs will also be planted between the water quality basins and the wetlands. Proper sediment and erosion controls will also be installed to prevent any damage to the wetland. Due to this, there should be no effect on this wetland's wildlife habitat function.
6. **Sediment/Shoreline Stabilization:** With the installation of the water quality basin and implementation of proper sediment and erosion control measures, there should be no impact on the sediment and shoreline stabilization function of this wetland.

Alternatives Considered

When designing the proposed warehouse and parking lot, the possibility of moving the building more south and away from the wetlands was considered. However, this would require a lot more grading and a much steeper slope on the southern part of the site which would likely cause more erosion and sedimentation issues. A retaining wall could be placed but would require excavation, filling, and grading which is more costly and adds more possible sources of excess sediments produced by this project. Since most of the development, besides a small portion of the water quality basin, is occurring on already paved areas and not within the wetland, this plan for development was deemed most viable.

Summary

The proposed development on this site will be occurring in currently existing impervious area. However, there will be an overall net decrease in impervious area. The excess water from impervious surfaces will be directed to the proposed water quality basin where it will be stored and treated. If proper sediment and erosion controls are installed according to the site plans, we do not anticipate the proposed development will have any impact on the functionality of the onsite wetlands as described above.

Sincerely,

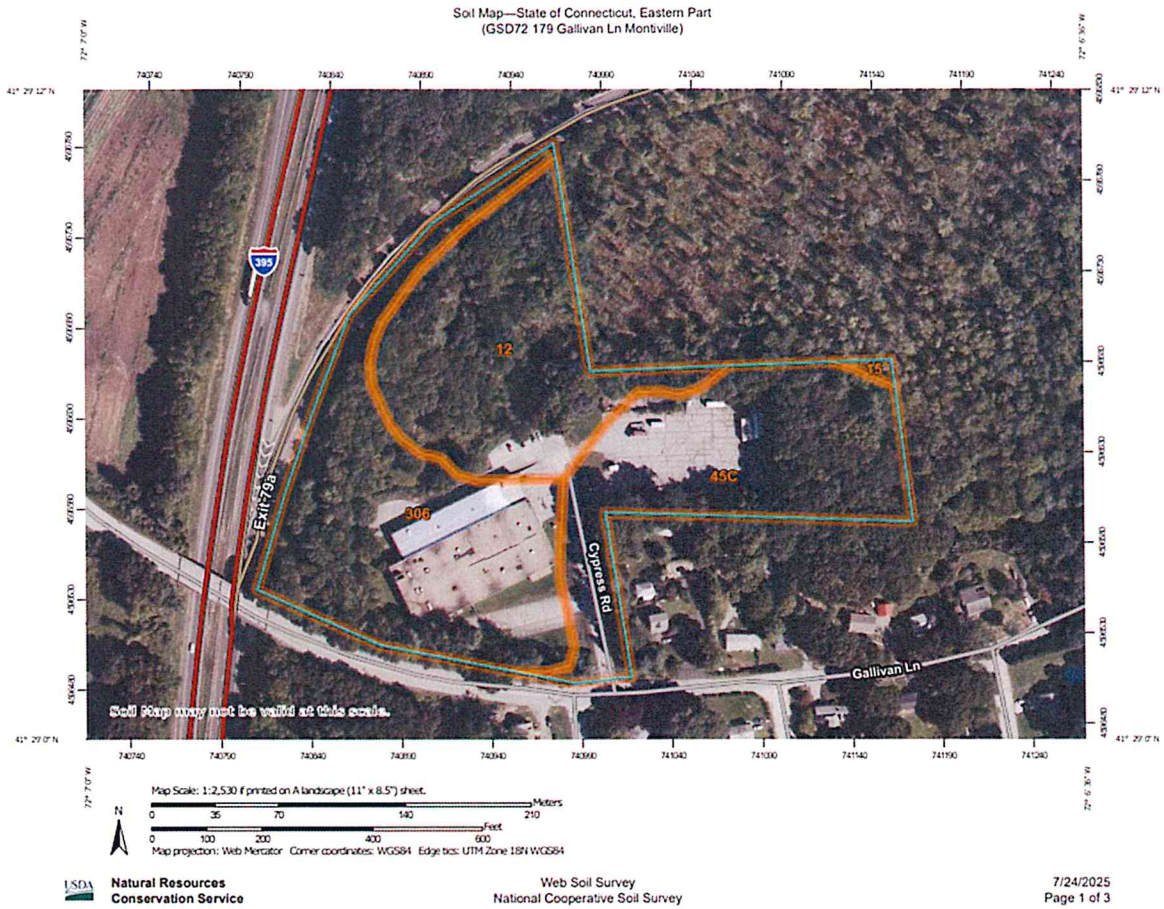


Robert C. Russo

Soil Scientist, Green Site Design
Norwich, CT

Appendix A: Soil Maps

From USGS Web Soil Survey



MAP LEGEND		MAP INFORMATION	
Area of Interest (AOI)	Area of Interest (AOI)	Spoil Area	<p>The soil surveys that comprise your AOI were mapped at 1:12,000.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Warning: Soil Map may not be valid at this scale.</p> <p>Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.</p> </div>
Soils	Soil Map Unit Polygons Soil Map Unit Lines Soil Map Unit Points	Stony Spot Very Stony Spot Wet Spot Other Special Line Features	
Special Point Features	Blowout Borrow Pit Clay Spot Closed Depression Gravel Pit Gravelly Spot Landfill Lava Flow Marsh or swamp Mine or Quarry Miscellaneous Water Perennial Water Rock Outcrop Saline Spot Sandy Spot Severely Eroded Spot Sinkhole Slide or Slip Sodic Spot	Water Features Streams and Canals Transportation Rails Interstate Highways US Routes Major Roads Local Roads Background Aerial Photography	
		<p>Please rely on the bar scale on each map sheet for map measurements.</p> <p>Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)</p> <p>Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.</p> <p>This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.</p> <p>Soil Survey Area: State of Connecticut, Eastern Part Survey Area Data: Version 2, Aug 30, 2024</p> <p>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</p> <p>Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022</p> <p>The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.</p>	

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
12	Raypol silt loam, 0 to 3 percent slopes	4.0	30.3%
15	Scarboro muck, 0 to 3 percent slopes	0.1	0.4%
45C	Woodbridge fine sandy loam, 8 to 15 percent slopes	4.0	30.7%
306	Udorthents-Urban land complex	5.1	38.5%
Totals for Area of Interest		13.1	100.0%

Appendix B: Army Corps Wetland Assessment Sheets

Wetland Function-Value Evaluation Form

Wetland ID: 6SD72
 Latitude: 41.445 Longitude: 92.113
 Prepared by: HL Date: 7/25/2005
 Wetland Impact: PROLE Area: 4.6 AC
 Evaluation based on: Office Field
 Corps manual wetland delineation completed? Y N

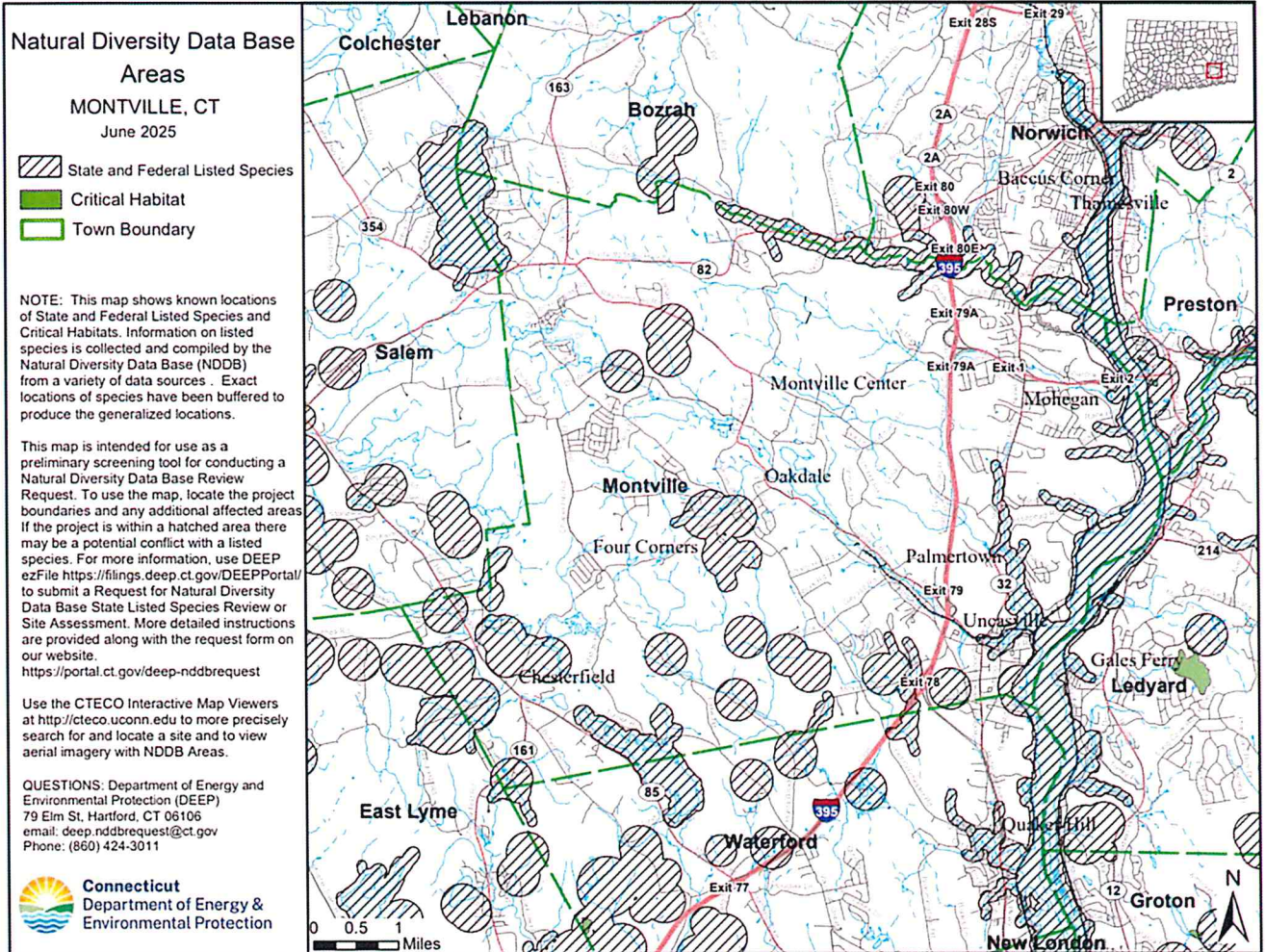
Total area of wetland: 4.6 ac Human made? NO Is wetland part of a wildlife corridor? YES or a "habitat island"? YES
 Adjacent land use: Commercial (LI) & Residential (R-20) Distance to nearest roadway or other development: 10-7 CA
 Dominant wetland systems present: PROLE Contiguous undeveloped buffer zone present: NO
 Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? Middle
 How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Function/Value	Suitability Y/N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	2,4,5,7,10,12,15	✓	This wetland appears to feed nearby creek stream and is located on former agricultural lands & gravelly dirt. Wetland is very rich in rearing vegetation; can be used for water.
Floodflow Alteration	Y	3,5,6,8,9,10,13,14,15,16	✓	While this is a Regional Wetland, it is very shallow and thin and is considered seasonal water observed. There is a culvert. No sediment but low fertility. Present above in the wetland.
Fish and Shellfish Habitat	N			
Sediment/Toxicant Retention	Y	3,4,5,7,8,10,11,12,13,15,16	✓	Each year there is stream and there are many plants for different wetland is highly productive and provides food source for nutrient that season for foraging waterfowl.
Nutrient Removal	Y	3,4,5,7,8,10,11,13,14	✓	The stream has banks with lots of vegetation including aquatic forest.
Production Export	Y	1,2,3,7,8,12,14	✓	Plants are large and numerous and plant material present for food and many insects present.
Sediment/Shoreline Stabilization	Y	1,6,7,9,12,13,14,15	✓	The site is permeable and wetland is not easy to access due to steep slopes.
Wildlife Habitat	Y	2,6,8,10,11,13,14,15,16,17,18	✓	The wetland has steep slopes and has been diked and not used for years. Site is rich in water quality.
Recreation	N			Limited viewing areas in count see all wetland type at once.
Educational/Scientific Value	N			NO CT Listed Species Present
Uniqueness/Heritage	Y	15,16,18,19,13,15,18,20		
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

* Refer to backup list of numbered considerations.

Appendix C: Natural Diversity Data Base Map

Town of Montville, CT



Appendix D: Species List

Plant Species:

New York fern (*Parathelypteris noveboracensis*)

Highbush Blueberry (*Vaccinium corymbosum*)

Cinnamon fern (*Osmundastrum cinnamomeum*)

Black gum (*Nyssa sylvatica*)

American hornbeam (*Carpinus caroliniana*)

Skunk cabbage (*Symplocarpus foetidus*)

Lady fern (*Athyrium filix-femina*)

Greenbriar (*Smilax rotundifolia*)

Multiflora rose (*Rosa multiflora*)

Jewel weed (*Impatiens capensis*)

Wrinkleleaf goldenrod (*Solidago rugosa*)

Marsh fern (*Thelypteris palustris*)

Halberd-leaf tearthumb (*Persicaria arifolia*)

False nettle (*Boehmeria cylindrica*)

Sweet pepperbush (*Clethra alnifolia*)

Longhair sedge (*Carex comosa*)

Winterberry (*Ilex verticillata*)

Cattail (*Typha* sp.)

Royal fern (*Osmunda regalis*)

Fox grape (*Vitis labrusca*)

Japanese barberry (*Beberis thunbergii*)

Sensitive fern (*Onoclea sensibilis*)

Swamp candles (*Lysimachia terrestris*)

Blackberry (*Rubus allegheniensis*)

Slough sedge (*Carex obnupta*)

Common reed (*Phragmites australis*)

American beech (*Fagus grandifolia*)

American bur-reed (*Sparganium americanum*)

Elderberry (*Sambucus canadensis*)

Red maple (*Acer rubrum*)

Swamp milkweed (*Asclepias incarnata*)

Speckled alder (*Alnus incana*)

White pine (*Pinus strobus*)

Black birch (*Betula lenta*)

Pincushion moss (*Leucobryum glaucum*)

Animals confirmed:

Northern rough-winged swallow (*Stelgidopteryx serripennis*)

Possible species:

Wood frog (*Lithobates sylvaticus*)

Northern dusky salamander (*Desmognathus fuscus*)

Northern two-lined salamander (*Eurycea bislineata*)

Appendix E: CT DEEP Fish Community Data

