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JOB I-D. - Avon 4/20/03 - 3

Location: Vermillion Drive

Delineation date: 4/20/03 Soil conditions: Wet, springtime Map provided: Engineer's copy

Wetland flag numbers: #1 - #18, #19 - #25, #26 - #35 and intermittent watercourse

#### Overview

When conducting a field inspection for wetlands the soil scientist analyzes soil borings for hydric soil indicators. To acquire these borings a soil augur is used to penetrate the earth and reveal the soil below. An area is considered a wetland if the boring reveals redoximorphic features in 50% of the soil matrix within 20 inches of the soil surface. Redoximorphic features arise because there is constant saturation and oxidation of a soil. The presence of water turns the soil gray due to the movement of iron out of the reduced wet zone, and turns the soil reddish-orange where the iron is later deposited due to oxidation (dry conditions). These redoximorphic features are what is commonly termed mottling. The wetter the soil the more prevalent and darker the gray color of the soil. In addition to redoximorphic features, the presence of thick organic matter (muck) or free water in the soil indicates the presence of a wetland. All soils are given names for mapping purposes. These names are termed mapping units. The soils discovered on this property will fall into two categories, wetland soils and non-wetland soils. They will be discussed in brief detail in the soil report. The local Soil County Survey was consulted for this report.

## **Site Description**

The site is located on Oak Bluff Road and Vermillion Drive. Oakbluff is the southern boundary of the property, and Vermillion Drive runs along the western boundary. The northern limit is not distinctly marked, but starts 240 feet from the corner of Vermillion Drive and Oak Bluff and runs parallel to Oak Bluff for approximately 550 feet. The eastern boundary is basically the bottom of the steep cliff running along the back edge of the property. The property is steep to undulating and very open woodlands. The parcel rises in elevation from west to east. Located in the eastern boundary of the property are two wetlands. These wetlands give rise to watercourses that flow down to the western boundary of the property.

Non - Wetland Soils

Holvoke-Cheshire Soil type:

Mottling depth:

Holyoke 10 - 20 in/Cheshire > 60 inches Bedrock:

Water table depth:

This is considered a complex of steep somewhat excessively drained soils on glacial till uplands. The relief here is affected by underlying bedrock, and these soils can give rise to watercourses due to the shallowness of these soils. The permeability above the bedrock is moderate for Holvoke soils and permeability is also moderate in the Cheshire soils. These Holyoke and Cheshire soils are in such an intermingled pattern that it is not practical to map them separately.

Mottling depth: > 20 inches Bedrock: > 60 inches Water table depth: 1.5 - 3.5 feet

The Ludlow series formed in compact glacial till derived from sandstone. These soils are moderately well drained and are nonstony to extremely stony. The soils are found on hilltops and concave areas of ridges. The permeability is moderate in the surface layer and subsoil, but slow to very slow in the substratum. The soil has a seasonal high water table, but tends to dry out in the spring.

# Wetland Soils

Wilbraham Soil type: Mottling depth: 6 inches Bedrock depth: > 60inches .5 - 1.5 feet Water table depth:

The Wilbraham series is poorly drained nonstony to extremely stony soil. This series is derived mainly from reddish sandstone. The soils are in depressions and drainageways of glacial till uplands. The permeability is moderate in the surface layer and subsoil and slow or very slow in the substratum. This soil has a seasonable high water table until the middle of spring then it typically subsides towards the summer months. High water table is at a depth of about 8 - 10 inches.

# Sincerely,

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Wetland Assessment - Vermillion Drive, Avon, CT.

### Solls Types:

As previously stated in the soil report dated 4/20/03 the site consists of 3 soil types: the Holyoke/Cheshire complex, the Ludlow series and the Wilbraham series. The Holyoke/Cheshire complex is an excessively drained soil that is shallow to bedrock and is prone to giving rise to watercourses. The Ludlow series is moderately well drained and has a seasonally high water table until the later spring months. The Wilbraham series is poorly drained and is considered a wetland soil. These soils are in depressions and drainageways of glacial till uplands.

### Wetlands Assessment:

Wetland - 1 - This wetland is located at the east end of the property in a level portion of the land at the base of a steep slope. The wetland is likely created by water seepage from the mountain behind this location. When too much water inundates the wetland the excess water overflows and an intermittent watercourse is created. The wetland supports hydrophytic vegetation, and is most likely a productive breeding ground for amphibious

This wetland is also productive in other ways. The wetland helps to slow runoff from the mountain above. This area is a riparian wetland meaning that it is near or adjacent to flowing waters. The wetland is especially important in filtering out pollutants such as nitrogen and acid rain. Nitrogen from non point sources is taken up by vegetation and thus is not leached into the watercourse and transported further down stream.

This wetland is not a vernal pool. There is no Connecticut definition, but specific guidelines can be followed in determining whether a specific wetland is a vernal pool.

- · Guidelines
  - 1. water for 2 months during the growing season.
  - 2. a confined depression that lacks a permanent outlet stream.
  - 3. no fish present. 4. dries out in most years.

Wetland - 2 - This wetland is a watercourse that runs the length of the property in an east to west direction along Oak Bluff Road. The watercourse flows year round draining the upper areas of the mountain. With constant water flow this watercourse is a great breeding ground for amphibious creatures, and is also a great habitat for hydrophytic

vegetation. Watercourses such as this one are a great supply of surface water and act as a hydrologic stabilizer in that they help control erosion and flooding.

Wetland - 3 - This intermittent Watercourse is located in the central portion of the property and drains the upper wetland located at the eastern portion of the property (wetland - 1). This intermittent watercourse does not appear to be a productive wetland in that it does not carry out certain wetland functions.

## The Intermittent Watercourse:

- does not filter pollutants
- 2. does not help remove silts and sediments. It actually deposits sediment at the bottom of the property.
- 3. does not help maintain streamflow nor does it empty into another wetland
- to help maintain waterlevels.
- 4. does not represent a good habitat for amphibious reproduction. The channel was dry as of 4/20/03.

The intermittent watercourse winds down the parcel briefly losing its channel throughout. At the bottom of the intermittent watercourse the channel spreads out into overland flow and all of the sediment carried is deposited in a dispersed fashion.

Eliminating the intermittent watercourse will also increase the residence time of the water in wetland - 1. The more slowly the water moves through and out of a wetland the better. This makes it more likely that wetland functions and reactions will be carried out (i.e. filtering out contaminants and breaking down organic matter).

- 1. Pipe intermittent watercourse with perforated pipe.
- 2. Overflow inlet then direct water into established watercourse.
- 3. Reroute and make another intermittent watercourse and direct it towards established watercourse.

