# Development Authority of the North Country
# Proposed Landfill Expansion

## NYSDEC/USACE Joint Permit Application

# APPENDIX B

# WETLAND DELINEATION REPORT

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**Development Authority of the North Country**
**Solid Waste Management Facility**

**Town of Rodman**
**Jefferson County, New York**

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**July 2004**
**Updated January 2011**

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## Table of Contents

## Table of Contents- Continued

Figures



Appendices

## 1.0 Introduction

This report describes the wetland resources located on portions of the site owned by the Development Authority of the North Country (DANC) and containing the DANC Solid Waste Management Facility (SWMF) in the Town of Rodman, Jefferson County, New York (see Site Location Map presented in Figure 1). These areas are being evaluated for the purpose of expanding the existing landfill.

The wetlands located on the parcel that meet the Federal wetland criteria were delineated using the methods set forth in the 1987 Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987).

This report contains a description of the project site including the site ecology, the methods used to determine the wetland boundaries, agency resource information obtained for the site, and the results of the field wetland delineation. Photographs of the project site and field data that are used to support the wetland delineation are found in the Appendices at the end of this report.

## 2.0 Site Description

### 2.1 Location

The Development Authority of the North Country, Regional Landfill property is located in Jefferson County southeast of Watertown. The property is approximately 1,173 acres in size and is best accessed from NYS Route 177. For the purpose of this report this property is referred to as the "site." It is located approximately 6 miles east of Adams Center and Interstate 81. The area of study for this project is approximately 865 acres, as shown on Figure 2.

### 2.2 Site Use

Prior to the construction of the landfill in 1990, there was no substantial development on the site. Historically, there were a few homesteads centered along Dona Road (Dona Road, which is now blocked to public use, runs north south through the site) and Route 177. From pre-1900 to 1990 large portions of the site were cultivated or used as pasture. Certain fields on site have been maintained since that time and remain open.

The lined landfill footprint currently occupies 66.5 acres. Other developed areas of the site include access roads, stormwater detention ponds, soil borrow areas, maintenance and operation buildings, and other landfill appurtenances.

### 2.3 Surface Water

Several tributaries of Fish Creek cross the site. These small tributaries generally flow southeast to northwest. One drains the southern portion of the site (and the area south of the current landfill footprint) another originates west of the

existing footprint and flows to the northern site boundary and a third flows across the northern portion of the site and drains the other half. With only a few exceptions, the wetlands on site directly or indirectly drain to one of these two tributaries.

## 3.0 Agency Resource Information

Prior to undertaking the field wetland delineation, background information regarding soils, mapped wetlands, and topography was reviewed. This background information included the United States Geological Survey (USGS) topographic quadrangle map (Morrisonville quadrangle), New York State Department of Environmental Conservation (NYSDEC) Freshwater Wetlands map (Morrisonville Quadrangle), soils information from the Natural Resource Conservation Service, and National Wetland Inventory Map (Morrisonville Quadrangle).

### 3.1 USGS Topographic Quadrangle Map

Figure 2 shows the project area on the Rodman 7.5 Minute Series Topographic Quadrangle Map (1966). It also shows the locations of drumlin areas on site and the variable nature of the site terrain.

### 3.2 Natural Resources Conservation Service Soils Information

The published soil survey for Jefferson County identifies 13 soil types on the site. Figure 3 shows the soils mapped on and in the vicinity of the project site.

The mapped soil units include five hydric units, two units with potential hydric inclusions, and six non-hydric units. Allis Silt Loam (0-3 and 3-8% slopes) is an Aeric Haplaquept and is described as a poorly drained soil that formed in flats and depressions in uplands. The Angola Silt Loam (0-3 and 3-8% slopes) is an Aeric Ochraqualf that is somewhat poorly drained and is found in uplands. The Bice-Pinckney complex consists of Typic Dystrochrepts and Typic Fragiochrepts that are well and moderately well drained and formed in undulating

uplands. The Canandaigua Mucky Silt Loam is a Mollic Haplaquept, is very poorly drained, and is formed in depressions and bogs on plains. The Danley Silt Loam (3-8, 8-15, 15-25% slopes) is a Glossaquic Hapludalf, is moderately well drained, and forms in convex sloping areas on hilltops and ridges. The Darien Silt Loam (3-8 and 8-15% slopes) is an Aeric Ochraqualf and is a somewhat poorly drained soil that forms in short concave areas on slopes in uplands. Ensley Silt Loam, an Aeric Haplaquept, is poorly to very poorly drained and forms on flats and in depressions in uplands. Gulf Silt Loam is also an Aeric Haplaquept, is poorly drained and formed in flat areas and depressions. The Lagross-Haights complex consists of Typic Dystrochrepts which are well and moderately well drained and formed in level and fan shaped areas. Lowville Silt Loam (5-25% slopes) is a Dystric Eutrochrept that is well drained and forms in convex slopes in uplands. Manlius Shaly Silt Loam (3-8% slope) is a Typic Dystrochrept that is well to excessively drained and formed in convex areas on slope and low ridge in uplands. Nassau Shaly Silt Loam (8-15% slope) is a Lithic Dystrochrept that is a somewhat excessively drained soil formed on ridges and knobs in uplands. The Sun Silt Loam (Aeric Haplaquept) is a poorly to very poorly drained soil formed in broad, flat or small depressional areas.

The Allis, Canandaigua, Ensley, Gulf, and Sun soils are listed hydric soils. The Angola and Darien soils are listed as having potential hydric inclusions. The Bice-Pinckney complex, Danley, Lagross-Haights complex, Lowville, Manlius and Nassau soils are neither hydric nor listed as having potential hydric inclusions.

## 3.3 NYSDEC Freshwater Wetlands

Figure 4 shows the New York State Freshwater Wetlands Map for the project site. No NYSDEC regulated wetlands are located on the site. The nearest NYSDEC mapped wetland is situated east of the site on the east side of Tremaine Corners Road.

## 3.4 National Wetlands Inventory Map

Figure 5 shows the National Wetlands Inventory (NWI) Map for the project site. Several wetland areas are mapped on the site.

## 3.5 Results of Background Information Review

The preliminary review of background information conducted prior to the field wetland investigation indicated a high probability for potential Federally-regulated wetlands to be located within the project area. Field-based wetland delineation was conducted on site to confirm these preliminary findings.

## 4.0 Site Ecology

As mentioned previously, the DANC landfill site is approximately 1,173 acres (or 1.8 square miles) and is situated in the Tug Hill Transition ecozone (Reschke 1990). The Town of Rodman receives an average of 40-48 inches of precipitation per year (based on 1951-1980) and the average yearly evapotranspiration is 19 inches.

### 4.1 Site Cover Types

A variety of cover types were encountered on the DANC site. The currently developed portions of the site include the active landfill, stormwater detention ponds, access roads, operations buildings, maintenance buildings, soil borrow areas, and other areas used for landfill operations.

The undeveloped and less disturbed areas of the site include a variety of covertypes. There are several large fields (formerly agricultural) on the north side of the site. Some of these fields have an alfalfa and clover cover that is mowed annually. Other fields have been allowed to revert to a variety of old field vegetation and are periodically mowed. There are also large areas of scrub-shrub vegetation (some of which was formerly open field), evergreen plantation, deciduous forest, evergreen forest, and mixed forest.

Since the initial landfill siting, other areas have been subject to timber and brush cuts to encourage the growth of shrub vegetation as deer forage. Large areas of these fields are still mowed and maintained while other areas have reverted to scrub vegetation and eventually to more mature upland cover types.

## 4.2 Wetland Cover Types (location, water regime, typical vegetation)

The wetland types encountered on site vary substantially as do the general cover types. Wetland cover types identified on site include: forested wetland, scrub-shrub wetlands, emergent wetlands, and wet meadows/ herbaceous. Some delineated wetlands only exhibited one of the listed cover types while others had all four types.

### *4.2.1 Forested Wetland*

Approximately 29.69 acres of forested wetlands were delineated on site. These wetlands account for approximately 28.0% of the total wetland area and approximately 3.4% of the total study area. The forested wetland cover type includes areas of deciduous, coniferous, and mixed forest cover types.

### *4.2.2 Wet Meadows/Herbaceous*

The wet meadow/herbaceous cover type is estimated to cover 33.65 acres. This area represents 31.7% of wetlands delineated on the site and 3.9% of the entire study area. This wetland cover type includes areas that are parts of fields, were formerly fields and other areas characterized by herbaceous vegetation. This cover type is often found associated with other wetland cover types.

### *4.2.3 Scrub-Shrub*

Wetland areas that were classified as scrub-shrub account for a total of 34.10 acres. This cover type is approximately 32.2% of the wetlands on site and 3.9% of the total study area. Often this wetland type on the site could be characterized as a transition type. It is primarily found in areas that were formerly open or otherwise cleared. Primarily it was not found in areas with deep standing water.

### *4.2.4 Emergent*

The emergent wetland cover type was the least common cover type encountered on the site. Only 8.47 acres of emergent wetland were delineated. This area represents only 8.0% of the total delineated wetland area and 1.0% of the total study area. The emergent wetland cover type was characterized by herbaceous wetland vegetation growing in standing water, i.e., the water surface was above the soil surface.

## 5.0 Wetland Delineation Methodology

The background data described in Section 3 were reviewed prior to undertaking the wetland field investigations. The Routine Wetlands Determination Method with Onsite Inspection (Environmental Laboratory, 1987) was used to identify wetlands located within the project area that are subject to jurisdiction by the U.S. Army Corps of Engineers.

Barton & Loguidice, P.C. (B&L), performed data collection and delineation of the wetland boundaries during fieldwork conducted throughout the 2001, 2002, and 2003 field seasons. These delineation efforts were supplemented by an additional wetland delineation conducted exclusively within the proposed southern expansion limits. This delineation update was completed during September 2009. This report represents the combination of results for both of these wetland field investigations. Observations of vegetative communities, soils, and hydrology were used to determine the wetland boundaries in the field. These observations were made along transects located perpendicular to the wetland boundaries.

All of the data collected in the field were recorded on Field Data Sheets (located in Appendix B). Corresponding sample plot location numbers were marked on the site base map to show the locations where the information was obtained. The site base map is located in Appendix A.

The first step in the wetland delineation was to determine whether normal conditions were present at the project site. The study area was then examined for evidence of natural or human induced alteration of vegetation, soils, or hydrology. These investigations were followed with the selection of representative sampling points, and the characterization of vegetation, hydrology, and soils at each sampling point.

Hydric soils were assumed to be present (and thus not characterized in the field) at any sampling point that met the following criteria:

- where all dominant species had an indicator status of obligate (OBL); or
- where all dominant species had an indicator status of OBL or facultative wetland (FACW), and the wetland boundary was abrupt (Environmental Laboratory, 1987, pg. 62).

The presence of wetland vegetation was determined by evaluating the indicator status of the dominant plant species in each vegetative stratum (i.e., the herbaceous layer, shrub/sapling layer, tree layer, and woody vine layer). The quadrat sizes selected for each vegetative stratum were a 5-foot (1.5 m) radius for herbaceous vegetation and a 30-foot (9 m) radius for trees, shrub/saplings, and woody vines. Dominant plant species were determined using percent areal coverage estimates. The most abundant plant species (when ranked in descending order of abundance and cumulatively totaled) that immediately exceeded 50% of the total dominance measure for a given stratum, plus any additional species comprising 20% or more of the total dominance measure for that stratum, were considered to be dominant species for the stratum.

The wetland indicator status (OBL, FACW, facultative - FAC, facultative upland - FACU, or upland - UPL) for all dominant plant species identified in the sample plots was determined from the National List of Plant Species That Occur in Wetlands: 1988 National Summary (U.S. Fish and Wildlife Service, September 1988). The wetland vegetation criterion was deemed to be met if greater than 50% of the dominant plants in a sample plot had an indicator status of OBL, FACW, and/or FAC.

Plant community data recorded from each sample plot are included on the field data sheets found in Appendix B.

The presence of primary hydrologic indicators (such as inundation, watermarks, drift lines, or drainage patterns) or secondary hydrologic indicators (such as oxidized root channels, water stained leaves, or the FAC neutral test) was determined by making visual observations within the sample plots and surrounding areas. Soil saturation was determined by hand digging 16-inch (406 mm) deep soil test holes with a tile spade and observing the depth to which water rose in the hole. Hydrologic data gathered in the field at each sample plot were recorded on the field data sheets found in Appendix B.

The presence of hydric soil indicators was determined by extruding soil samples from the hand dug soil test holes. Munsell Soil Color Charts (1988 Edition) were used to determine the soil color immediately below the A-horizon, or at a depth of 10 inches (254 mm), whichever was shallower. Soil color information and other observations made at each sample plot were recorded on the field data sheets found in Appendix B.

As stated previously, soils were not characterized at sample plots where all dominant plant species had an indicator status of OBL, or when all dominant species had an indicator status of OBL and/or FACW and the wetland boundary was abrupt.

A wetland determination was made at each sample plot after characterizing vegetation, hydrologic indicators, and soil. If the vegetation, hydrology, and hydric soil criteria were met, the area was determined to be a wetland. If one or more of the criteria were not met, the area was determined to be non-wetland.

The boundary of the wetland located on the site was flagged in the field with surveyor's flagging. The flags were numbered consecutively and surveyed by Moncrief Land Surveying, P.C. The 2004 surveyed wetland boundaries were added to the site base map (Appendix A). The supplemental wetland delineation resulted in the identification of six (6) additional wetland locations. These wetlands have been added to the site base map included in Appendix A-1.

Photographs were taken at each sample plot and at other representative locations throughout the project site. Photographs are included in Appendix C. The direction of view of each photograph is shown on the map located in Appendix A.

# 6.0 Results

## 6.1 Wetland Labeling

The initial wetland delineation effort for the site was performed during three consecutive growing seasons (2001, 2002, and 2003). During that time a total of 49 wetlands were delineated covering 105.9 acres of the 865 acre study area. Wetlands represent approximately 12.2% of the study area. Delineation efforts completed in 2003 consisted of addressing areas identified during a USACE review of the wetland boundaries in the fall of 2002. The 2009 delineation supplement focused on the wetland locations included within the proposed southern expansion limits.

The initial delineation efforts (2001) focused on the areas immediately south and east of the existing landfill footprint. Those wetlands were identified alphabetically from A to N. At the request of USACE, to aid in evaluating potential alternatives for the landfill expansion, the areas north and west of the existing landfill were addressed. Wetlands O-S and NA through NZ were delineated in this effort. However, the 2002 delineation efforts primarily focused on the areas north and west of the existing footprint. These wetlands are also identified alphabetically but were given the prefix N, for north. Labels NA-NP and NS-NZ were used to identify these wetlands. The 2009 delineation supplement identified and mapped six additional wetland locations, recognized with labels D1-D6. The delineated wetlands on the site vary in total size from 0.02 acres to 12.64 acres. Some of the identified wetland locations are associated with channelized streams, while others are situated in localized topographic low points and do not have such obvious drainage features.

### *6.1.1 Delineated Wetlands*

Wetland A

Wetland A is located on the southern periphery of the current active landfill. It is approximately 7.22 acres in size and is associated with a tributary of Sandy Creek. Significant modification of this wetland has occurred due to beaver activity that has created elevated water depths. Covertypes observed in this wetland consist of deciduous forest (1.28), scrub/shrub (4.35), and wet meadow (1.59).

Forested species include green ash, red maple, and yellow birch (*Betula alleghaniensis*). Scrub/shrub species include northern arrowwood (*Viburnum recognitum*), spirea (*Spirea albicans*), various dogwoods (*Cornus* spp.), and willows (*Salix* spp.). Wet meadow species include sensitive fern (*Onoclea sensibilis*), royal fern (*Osmunda regalis*), fringed sedge (*Carex crinita*), cinnamon fern (*Osmunda cinnamomea*), and interrupted fern (*Osmunda claytoniana*).

Functions associated with this wetland include flood-flow attenuation and water quality improvement. The ability for this wetland to provide habitat for wildlife is impaired due to its proximity to the current landfill operation. Noise and the presence of humans are the main impairments.

Wetland B

Wetland B is situated south of Wetland A and is located within a narrow valley between two small drumlin-like features. This wetland consists entirely of wet meadow covertypes, is 1.31 acres in size, and drains to Wetland A at two locations. Defined channels are present at both connections.

Typical species observed in this wetland include jewelweed (*Impatiens capensis*), sensitive fern, and arrow-leaved tear thumb (*Polyganum sagittatus*). Occasional trees are present and consist of yellow birch and Eastern hemlock (*Tsuga canadensis*).

This wetland provides water quality functions and habitat for wildlife. It is also somewhat impaired by its proximity to the operating landfill although screened by forest.

Wetland C

This wetland is situated south of Wetland B at a higher landscape position. The wetland is in a closed depression on the landscape with no definable drainage except for potential sheetflow during snowmelt or rainfall events. This wetland mimics a bog system with organic soils. It is 0.38 acres in size

Plant species observed in this wetland include sensitive fern, royal fern, cinnamon fern, willows, and spirea.

This wetland is relatively diverse but is limited in functions due to its landscape position and small size. Habitat functions are the primary functions of this wetland.

Wetlands D, DA, DB, and N

This wetland complex is located east of the current active landfill. This wetland complex is connected to Wetland A, but is distinguished from it by the fact that it drains to a tributary of Fish Creek which drains the northern half of the site. It is approximately 12.44 acres in size and is almost entirely wooded with only a small portion of scrub/shrub wetland that is 0.36 acres in size.

Representative species observed include Eastern hemlock, balsam poplar (*Populus balsamifera*), yellow birch, and green ash (*Fraxinus pennsylvanica*). Sensitive fern is the only dominant species observed in the understory. The scrub/shrub portion supports Northern arrowwood, spirea, willows, spotted joe pye weed (*Eupatoriadelphus maculatus*), sensitive fern, and arrow-leaved tear thumb.

This wetland provides flood-flow attenuation, water quality improvement, and habitat functions. It is situated adjacent to the operating landfill which does impair its habitat value but it does provide a significant deer wintering area due to the closed evergreen canopy present in this wetland. This wetland is the largest such area within the study area.

Wetland E

This small wetland is located north of the current landfill and is situated on a branch of the unnamed tributary to fish Creek. It is entirely a wet meadow wetland and is 0.19 acres in size.

Species present in this wetland include spirea, willows, jewelweed, and arrow-leaved tear thumb.

Flood-flow attenuation, sediment filtering and water quality improvement are the primary functions associated with this wetland.

Wetland F

This wetland complex is located on a different branch of the same tributary to Fish Creek that drains Wetlands D, N, and E. It includes scrub/shrub (5.90 acres), wet meadow (0.83 acres) and emergent (0.62 acres) covertypes with occasional small areas of open water. This drainage is significantly impacted by beaver activity. The wet meadow areas are present where the beaver dams have been partially breached exposing areas that were formerly under water. Emergent covertypes are found in the working beaver impoundments. This wetland extends beyond the study limits to the east and south.

Species in the scrub/shrub areas include northern arrowwood, spirea, and willows with occasional hawthorns (*Crateagus* spp.). Sensitive fern, goldenrod (*Solidago* spp.), and

asters (*Aster* spp.) comprise the understory. The wet meadow areas are typified by owlfruit sedge (*Carex stipata*), fox sedge (*Carex vulpinoidea*), fringed sedge, arrow leaved tear thumb, and rice cutgrass (*Leersia oryzoides*).

Functions provide by this wetland include flood-flow alteration, sediment filtering, aquatic, and terrestrial habitats, and functions as a buffer for the intermittent stream that runs through it.

Wetland G and H

These small wetlands are located in a branch of the unnamed tributary of Sandy Creek that drains the southern portion of the site. They are both wet meadow wetlands of 0.50 and 0.24 acres, respectively, in size. Vegetation observed in these wetlands includes arrow leaved tear thumb, boneset (*Eupatorium perfoliatum*), spotted joe pye weed, sensitive fern, cattail (*Typha latifolia*), and yellow birch. These wetlands are subject to seasonal flooding associated with spring snowmelt and precipitation.

Flood-flow attenuation and sediment filtering are the primary functions for these wetlands. They are of limited size and therefore do not provide significant wildlife habitat.

Wetland J

This is a small (0.05 acre) wetland in the same tributary system as Wetland G and H. It is identical to these wetlands in character and species composition. It has the same functions as these wetlands.

Wetland K and L

This wetland complex is located on a sub-tributary to Sandy Creek. It is heavily modified by beaver activity and includes some formerly upland areas that have been converted to wetlands. Iron was observed being flushed out of the formerly upland soils at the periphery of this wetland. This wetland has submerged, wet meadow and scrub/shrub covertypes. Wetland K is separated from Wetland L by an earthen roadway berm with a large culvert connecting the two wetlands.

The wet meadow portion of Wetland K is located in a separate drainage from the scrub/shrub and emergent portions and functions independently from those portions of this wetland. The wet meadow portion drains to Wetland A and consists of a series of narrow interconnected openings in the surrounding forest.

Species include northern arrowwood, spirea, willows, arrow leaved tear thumb, and rice cutgrass in the scrub/shrub areas. Various sedges and both arrow leaved tear thumb, and rice cutgrass are present in the wet meadow areas.

Functions provided by these wetlands include flood-flow attenuation, sediment filtering, wildlife habitat, and water quality improvement.

Wetland O, I, and M

Wetlands O, I, and M comprise a single wetland. The wetland O portion is a long, linear wetland, which is very narrow at times, and is situated in a saddle between two hillslopes. The wetland is 1.71 acres in size. Wetland O connects to wetland M, a small wetland located to the east and connects to wetland I located towards the west. The wetland rises from either side to a highpoint in a saddle between two hillsides. Water flows either way from that highpoint, draining either west to wetland M or east to wetland I.

The forested portion of this wetland (0.9 acre) is mainly in the narrow section between the hill slopes. In the forested area, most of the mature trees are on the wetland boundary and the adjacent hill slope. Within the forested wetland area there are species like false hellebore (*Veratrum viride*), jewelweed, marsh marigold (*Caltha palustris*), sensitive fern, ostrich fern, green ash, and violet. The wet meadow herbaceous vegetation (2.2 acres) is found on each end of the wetland near wetlands M and I. The vegetation in the wet meadow portion of this wetland is similar to that found elsewhere without the ash, willow, and hemlock overstory.

Water quality and habitat are the primary functions provided by this wetland.

Wetland P

Wetland P (2.55 acres) is located near the southern site boundary. The wetland area is characterized by wet meadow vegetation (approximately 1.58 acres) and scrub shrub vegetation (approximately 0.97 acres). The adjacent upland areas are primarily mature hemlock forest. The exception to this is the western most lobe of the wetland which extends into an area that has been cleared in the recent past.

This wetland provides habitat, water quality functions, and flood attenuation.

Wetland Q

Wetland Q, situated near the southern site boundary, is 0.81 acres in size and was characterized by its wet meadow/herbaceous vegetation. Herbaceous vegetation within this wetland area included sensitive fern, royal fern, various asters, and sedges. No defined drainages were noted flowing into this wetland area. However, an outlet was observed draining south to the unnamed tributary of Fish Creek (44-13-1).

This wetland also provides habitat, water quality and flood attenuation functions.

Wetland R

Wetland R is 1.15 acres in size and approximately 0.85 acres of which is characterized as scrub/shrub vegetation and 0.3 acres of which was characterized as wet meadow/herbaceous. The shrub portion of this wetland was very thick and characterized by arrowwood, dogwood, and spirea. The herbaceous portion of this wetland was characterized by water horsetail, spotted joe pye weed, asters, marsh marigold, rice cut grass, and occasional trees such as black ash (*Fraxinus nigra*) and yellow birch.

This wetland apparently receives water that drains from the back of a drumlin located along the southern boundary of the site. The delineation of this wetland stopped at the site boundary, but it was evident that this wetland continues slightly beyond the site boundary and probably drains to the unnamed tributary of Sandy Creek (44-13-1).

Wetland S

Wetland S is located along the far southern border of the site. The wetland area within the DANC site boundary is approximately 5.60 acres. There appears to be additional wetland areas which extend beyond the site boundary. The wetland is formed by a series of beaver impoundments which has led to the development of significant areas of open water, as well as emergent, wet meadow and scrub-shrub wetland types. Approximately 3.04 acres of the total area was classified as wet meadow or herbaceous vegetation. 2.08 acres was classified as

emergent wetland and 0.48 acres was classified as scrub shrub. Vegetation within the emergent areas included various rushes, and branching burreed (*Sparganium androcladum*). The herbaceous areas had various rushes, sedges, cattails, verbena, asters, and small willow shrubs. The scrub/shrub areas had larger shrubs including: willows, arrowwood, dogwood, and spirea.

This wetland has a diverse mix of covertypes and is also typified by a diverse plant mix. Deepwater aquatic habitats are present in this wetland, one of the few wetlands of this type within the study area.

Wetlands NA- NE

Wetlands NA, NB, NC, ND, and NE are located in the northwestern portion on the site and are associated with or drain to the unnamed tributary of Fish Creek (44-13-3). These wetlands all provide habitat and a forage source for wildlife, flood storage, and sediment trapping functions. They are also similar in that they are mainly riverine wetlands associated with the aforementioned unnamed tributary

Wetland NA

Wetland NA is approximately 1.27 acres in size and is located near the northern site boundary in the area south of NYS Route 177 and east of Dona Road. A portion of the wetland is associated with the tributary of Fish Creek that runs through the

site. The majority of the wetland is associated with an undefined drainage from the adjacent hillside.

The wetland is characterized by both forested covertype and scrub shrub. The hillside portion of the wetland is forested (0.36 acres) and is characterized by sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), American elm (*Ulmus americana*), and blue beech (*Carpinus caroliniana*). The scrub shrub wetland area (0.91 acres) is characterized by vegetation, including willow shrubs, sensitive fern, jewel weed, and hawthorn and other herbaceous vegetation.

Wetland NB

Wetland NB is located west of Dona Road. It is associated with a drainage that originates near the upper fields of the site. This wetland connects to wetland NC and to the tributary of Fish Creek that runs along the northern section of the site.

The wetland as delineated is 1.25 acres in size. Of that area, 1.02 acres consists of wet meadow cover type and 0.23 acres is emergent habitat. The wet meadow vegetation observed includes cattails, sensitive fern, and various sedges. The emergent areas consist of species such as sweet flag (*Acorus calamus*), violet (*Viola* sp.), marsh marigold, and water horsetail (*Equisetum fluviatile*).

Wetland NC

This wetland is associated with the unnamed tributary of Fish Creek and is located near the intersection of Dona Road and Route 177. The entire area consists of 1.29 acres; approximately 0.25 acres of the wetland is wet meadow covertype and the remaining 1.04 acres is scrub shrub covertype. The wet meadow area is characterized by the presence of common cattail, reed canary grass (*Phalaris arundinacea*), sensitive fern, sedges, jewelweed, and various asters. The scrub shrub area is predominately willow.

Wetland ND

Wetland ND is also associated with the unnamed tributary of Fish Creek. At the downstream terminus (northwestern part of the wetland), there apparently was once a beaver dam. The dam at that location would have resulted in a wetland of increased size. Lower lying areas (between wetland ND and NE) that are now dry and support upland vegetation probably supported hydrophytic vegetation at some former time. Wetland ND is 0.58 acres in size and was characterized as wet meadow. Species encountered in this wetland included: rushes, reed canary grass, joe pye weed, boneset, cattails, asters, and sedges.

Wetland NE

This wetland is relatively small (0.41 acres) and is characterized by wet meadow/herbaceous vegetation. This wetland is associated with a small surface water feature draining wetland NF north towards the Fish Creek tributary. Vegetation found in this wetland area included dwarf blackberry (*Rubus pubescens*), joe pye weed, sedges, grasses, rushes, asters, and goldenrod.

Wetlands NF, NG and NO

These three wetlands are located in the northwestern portion of the DANC site. Wetland NO and NF are associated with small valleys between several hill slopes. NG is a small wetland which drains to NF. Together these three wetlands account for approximately 21 acres. They provide wildlife habitat as well as a food source. They also help to attenuate water associated with storms thereby trapping sediments and helping to desynchronize flood flow downstream.

Wetland NF

At 12.64 acres, NF is the largest wetland delineated on site. Forested, wet meadow/ herbaceous, and scrub-shrub wetland cover types were encountered in this wetland. Water from this wetland ultimately drains in one of two directions: north through wetland NE and towards the unnamed tributary of Fish Creek, or west to an unnamed sub-tributary of Fish Creek. The scrub/shrub

areas (2.69 acres) of this wetland are characterized by arrow-wood, green ash, balsam poplar, dogwood, and willow. Forested areas (8.44) were typified by an overstory tree canopy with an herbaceous understory. Typical species encountered in the forested areas of NF include: sugar maple, hemlock, green ash, American elm, yellow birch, jewel weed, geum, sedges, sensitive fern, cinnamon fern, equisetum, and asters. Approximately 1.51 acres of this wetland was characterized by wet meadow vegetation. Plant species encountered in these areas included: rushes, sedges, asters, and small willow shrubs.

Wetland NG

Wetland NG is a small (0.98 acre) shrub wetland that is confined to a depression along a hill ridge. This wetland drains west and is hydrologically connected to the western arm of wetland NF via a small but defined drainage. This wetland has thick shrub undergrowth and is characterized by willow, ash, red maple, viburnum, and dogwood.

Wetland NO

Wetland NO is a larger wetland area (7.34 acres) situated in a low saddle between two hillsides. There are several different covertypes represented in this wetland. Moving away from the hillsides and towards the wetland's center, the wetland transitions from forested, to wet meadow and then to emergent. The northern portion of the wetland includes a section of scrub shrub wetland and additional wet meadow area. The wetland drains to the north

into the unnamed tributary of Fish Creek. Typical species observed in the emergent area include: cattails and sensitive fern. Wet meadow area vegetation includes; jewel weed, asters, sedges, and various rushes. The scrub/shrub area has different types of willow, dogwoods, and viburnum. The forested section has an herbaceous understory with a canopy of hemlock, green ash, blue beech, and elm.

Wetlands NH-NN

Wetlands NH-NN are situated in or near the upper field and shrub area north of the main operations building. Wetlands NH and NI are located west of Dona Road while the remaining wetlands, NJ-NN, are located east of Dona Road. Wetlands NJ, NK, NM and NN drain west, under Dona Road, to Wetlands NH and NI on the west side of Dona Road. Wetland NL drains north into the northern tributary of Fish Creek (44-13-3). These wetlands provide cover and a food source for wildlife – such as deer and birds. These wetland areas also receive surface water flow. They help to slow the water and lessen the intensity of runoff, providing an area for infiltration and trapping of sediments.

Wetlands NH/NI

These two small wetlands are located west of Dona road and uphill of wetland NB. Wetland NH and NI are very small wetlands (0.015 and 0.04 acres, respectively) with a wet meadow cover type. Both wetlands are associated with the same drainage feature. Water from this drainage feature flows through wetland

NH, then through wetland NI, and into wetland NB and ultimately to the unnamed tributary of Fish Creek. Typical wet meadow vegetation observed in these wetlands consists of sweet flag, joe pye weed, sensitive fern, and sedges.

Wetlands NJ and NJA

Wetland NJ and NJA comprise a single 2.70 acre wetland area characterized by wet meadow and herbaceous vegetation. It is situated near Dona Road and is an old field area; the foundation of an old homestead is just north of the wetland area. This wetland is characterized by grasses, sedges, rushes, and asters. This wetland receives water from an adjacent hillslope and from wetland NK. Water from this wetland drains primarily to the north in undefined channels across an open field to the ditch on the east side of Dona Road. This drainage is then conveyed to wetland NA. A small portion of this wetland drains to the west and enters wetland NH via a culvert underneath Dona Road.

Wetlands NK and NKA

Wetland NK (0.32 acres) and NKA (0.07 acres) are situated along a hillslope and are characterized by wet meadow/herbaceous vegetation (approximately 0.15 acres) along the downslope areas and more scrub/shrub vegetation (approximately 0.24 acres) along the upslope areas. This wetland backs along a drainage ditch that drains a portion of a nearby large open field.

Wetland NL

Wetland NL is a total of 1.09 acres in size. Approximately 0.66 acres is characterized as scrub/shrub and 0.43 acres is characterized as wet meadow. This wetland receives surface water from a surrounding field and some water from a nearby spoils pile. Stormwater that flows down the face of the spoils pile is slowed through the use of weirs, hay bales, and silt fence. The eastern portion of wetland NL ultimately received this runoff from the spoils pile and provides another area for the water to slow and be detained before it enters the tributary of Fish Creek. The herbaceous portions of this wetland are characterized by scirpus, typha, carex, some willow shrubs, and other herbaceous vegetation. The scrub/shrub portion of this wetland is characterized by willow shrubs, viburnum, and dogwood.

Wetland NM

Wetland NM is a smaller wetland area (0.39 acre) and is associated with an intermittent freshet. The vegetation in the area is mainly comprised of wet meadow/herbaceous species including: joe pye weed, various sedges, sweet flag, sensitive fern, asters, and other grasses. The wetland area takes overland flow and would likely be inundated during heavy rains and high flows. This wetland has value as habitat and a food source for animals and for flood storage and trapping of sediments.

Wetland NN

Wetland NN is 0.81 acres in size and is a scrub/shrub wetland. A portion of the wetland boundary is formed at the toe of a small hill feature and the toe of the embankment for Dona Road. This wetland area is dominated by shrubs such as: willow, dogwood, and viburnum.

Wetlands NP and NS - NZ

These wetlands are located west of the footprint area. With the exception of a portion of NZ, all of these wetlands are also located west of Dona Road. This group of wetlands all drains to the southern unnamed tributary of Sandy Creek (44-13-3) on site. Two of the wetlands included in this group, NV and NX, are associated with beaver complexes. The other wetlands in this grouping are primarily associated with depressions in the landscape and some are also influenced by clear cut performed for the DANC deer management program.

Wetland NP

Wetland NP is a small (0.65 acre) scrub/shrub wetland area. The area is typified by an herbaceous understory, some larger trees, and viburnum, dogwood and willow shrubs. The southern portion of this wetland is associated with an old clear cut. It is possible that the cutting of the trees caused this area to take on a more hydric character, when historically it might have been drier when it was vegetated with mature trees. Indications were

observed that NP drains to NW during the spring or during other times of heavy precipitation.

Wetland NS

Wetland NS is 1.98 acres in size. The wetland is a mix of forested wetland (0.83 acres) and wetland area dominated by herbaceous vegetation (1.15 acres). This wetland was also subject to a tree cut to encourage brush undergrowth for deer forage. Indicators were found that suggest that NS drains west, beyond the site boundary, to an unnamed sub tributary of Fish Creek. Vegetation observed in this wetland included: sensitive fern, New York aster (*Aster novi-belgii*), viburnum, and various sedges, rushes and grasses. In the forested areas of this wetland red maple and balsam poplar was observed in the canopy.

Wetlands NT/NU

Wetland NT and NU are two small, adjacent herbaceous wetlands. Wetland NR is 0.08 acres in size; NU is 0.15 acres in size. The vegetation in these two wetlands is very similar and consists of areas of various sedges, grasses, rushes, and sensitive fern. Both of these wetlands have conspicuous surface water drainage features that drain west.

Wetland NV

Wetland NV is one of the larger wetlands, 4.95 acres, west of the footprint. This wetland is associated with a small stream but its hydrology has been substantially altered by beaver activity. As a result of beaver activity in this wetland, water levels and vegetation types differ substantially. There is approximately 1.32 acres of emergent wetland, 1.33 acres of herbaceous wetland, and 2.3 acres of scrub/shrub wetland. This wetland also receives overflow from the outlet of the stormwater pond.

Wetland NW

Wetland NW is a larger (5.85 acres in total) multi-lobed wetland. Much of the northeastern lobe follows an area that was clear cut (for the deer management program) in the recent past. This portion is scrub/shrub (2.96 acres in total) and typified by an herbaceous understory with willow, dogwood, and viburnum shrubs. There are also some purely herbaceous areas (0.59 acres). These sections have sedges, asters, cut grass, and jewelweed. Other portions are forested (totaling 2.3 acres) with a thick herbaceous understory. In those places, the canopy layer is composed of red maple, hemlock, elm, and ash among other tree and shrub species.

Wetland NX

Wetland NX is a 5.28 acre area southwest of the existing footprint. Wetland NX is connected to Wetland A which continues along the southern side of the existing landfill footprint. At the time

of the delineation (Summer 2002), it was estimated that 1.7 acres of the wetland was predominately emergent vegetation (cattails and willow shrubs), 1.68 acres was wet meadow (sedges, rushes, and herbs), and1.9 acres was scrub/shrub (viburnum, dogwood and willow). This wetland also appears to be associated with some degree of beaver activity which would influence the depth of inundation. NX flows to the west and there is also a wetland area west of Dona Road. The area west of Dona Road is not hydrologically controlled by beavers.

Wetland NY

Wetland NY is a small (0.23 acre) wetland near the western site boundary. The wetland is typified by herbaceous vegetation that includes jewelweed and sedges. This wetland is located at the toe of a hillside and receives sheet flow from that adjacent hillside. It drains west, off the DANC site, towards an unnamed sub-tributary of Fish Creek.

Wetland NZ

Wetland NZ is a small wetland, 0.4 acres, and is associated with an area that was probably clear cut in the recent past. As with NS, it is very possible that the clear cut caused changes that have influenced the type of vegetation in the area. The wetland was classified as wet meadow/herbaceous and was characterized by vegetation such as sedges, cattails, sensitive fern, and green ash saplings.

Wetlands D1-D4

These four wetlands are located along the intermittent stream which bisects the proposed landfill footprint. These are relatively small, emergent wetlands situated within the riparian zone adjacent to the stream. Wetland D2 is actually an extension of previously identified wetland J. The delineated acreages of these areas are as follows: D1-0.06 acres, D2-0.08 acres, D3-0.06 acres, and D4-0.02 acres.

These four wetlands exist in relict channels left by the stream or in exposed bed areas resulting from incision of the stream into the landscape. This stream emanates from Wetland K which, at the time it was delineated in 2001, was beaver controlled. The beavers have since left this wetland and the beaver dams are no longer maintained. The dams have failed, which may have resulted in one or more high velocity flooding events that may have caused the movement of the stream within its floodplain, resulting in the creation of these new wetland areas. D1 and D2 are nearly adjacent and are very similar in their characteristics; therefore, these two areas were delineated using a single transect identified under D1. The same is true for wetlands D3 and D4, which are both included under the D3 transect.

Detailed data associated with the vegetation, soil characteristics, and hydrological features of these wetlands can be found on their field data sheets included in Appendix B.

Wetland D5

Wetland D5 (0.28 acres) is an extension of Wetland A and consists of an emergent wet meadow covertype. During the initial delineation of Wetland A, this new area (D5) had not yet developed wetland vegetation and was therefore not delineated as such. It is likely that the area possessed wetland hydrology due to the influence of the nearby beaver dam and that wetland vegetation had not yet been established due to the somewhat recent nature of the rise in water levels associated with the dam.

Detailed data regarding delineated wetland D5 is included on the field data sheets for this location on Appendix B.

Wetland D6

Wetland D6 (0.22 acres) is an extension of Wetland I and consists of an emergent wet meadow covertype, consistent with that seen in Wetland I. This wetland area is connected to Wetland I by a narrow area behind a small berm, which appears to have been created during either logging or drilling activities on the site. This berm masked the presence of this wetland during initial delineation activities; therefore, it was not identified at that time.

Detailed information about the vegetation, soils, and hydrology of Wetland D6 is included on the field data sheets for this wetland location, included in Appendix B.

### *6.1.2 Wetland Values*

The relative value of the wetlands found in the study area can be grouped into one of three classes. These classes are as follows:

- **Class A** – the wetlands in this class provide multiple functions, they are typified by natural vegetation, possess significant diversity, have more than one covertype, are not impaired physically, chemically or biologically and are not impaired by human actions.
- **Class B** – the wetlands in this class provide multiple functions, are somewhat less diverse than those in Class A, may have some naturally occurring impairment (i.e., beaver activity), and are not impaired by human actions.
- **Class C** – the wetlands in this class provide one or more functions, may not have natural vegetation, and are impaired either physically, chemically, or biologically or have a significant impairment resulting from human activities.

Class A wetlands include wetlands I, M, O, P, Q, R, S, NB, ND, NE, NF, NG, NM, NO, NS, NW, and D6. Class B wetlands include wetlands B, C, CA, F, G, H, I, J, K, KA, L, NH, NI, NP, NT, NU, NV, NY, NZ, D1, D2, D3, and D4. Wetlands A, D, DA, DB, E, N, NA, NC, NJ, NK, NL, NN, NP, NX, and D5 are classified as Class C wetlands due to their proximity to the active landfill operations (A, D, E, N, NN, NX, and D5), proximity to State Route 177 (NA and NC), management as hayfields (NJ and NK), management for deer browse (NP), or location within one of the managed covertypes on the site (NL).

## 7.0 Bibliography

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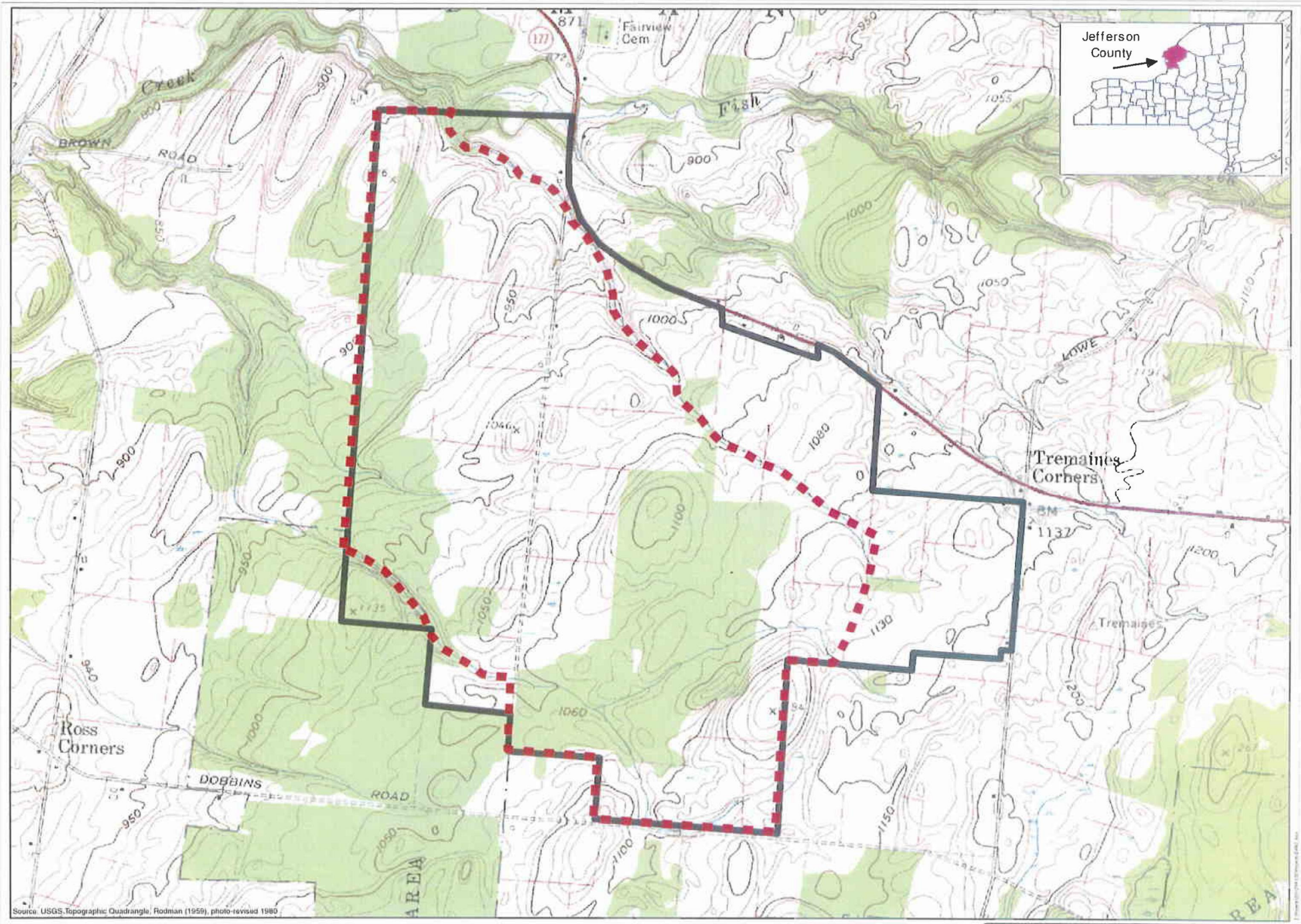
# Figures

# Figure 1

# Site Location Map



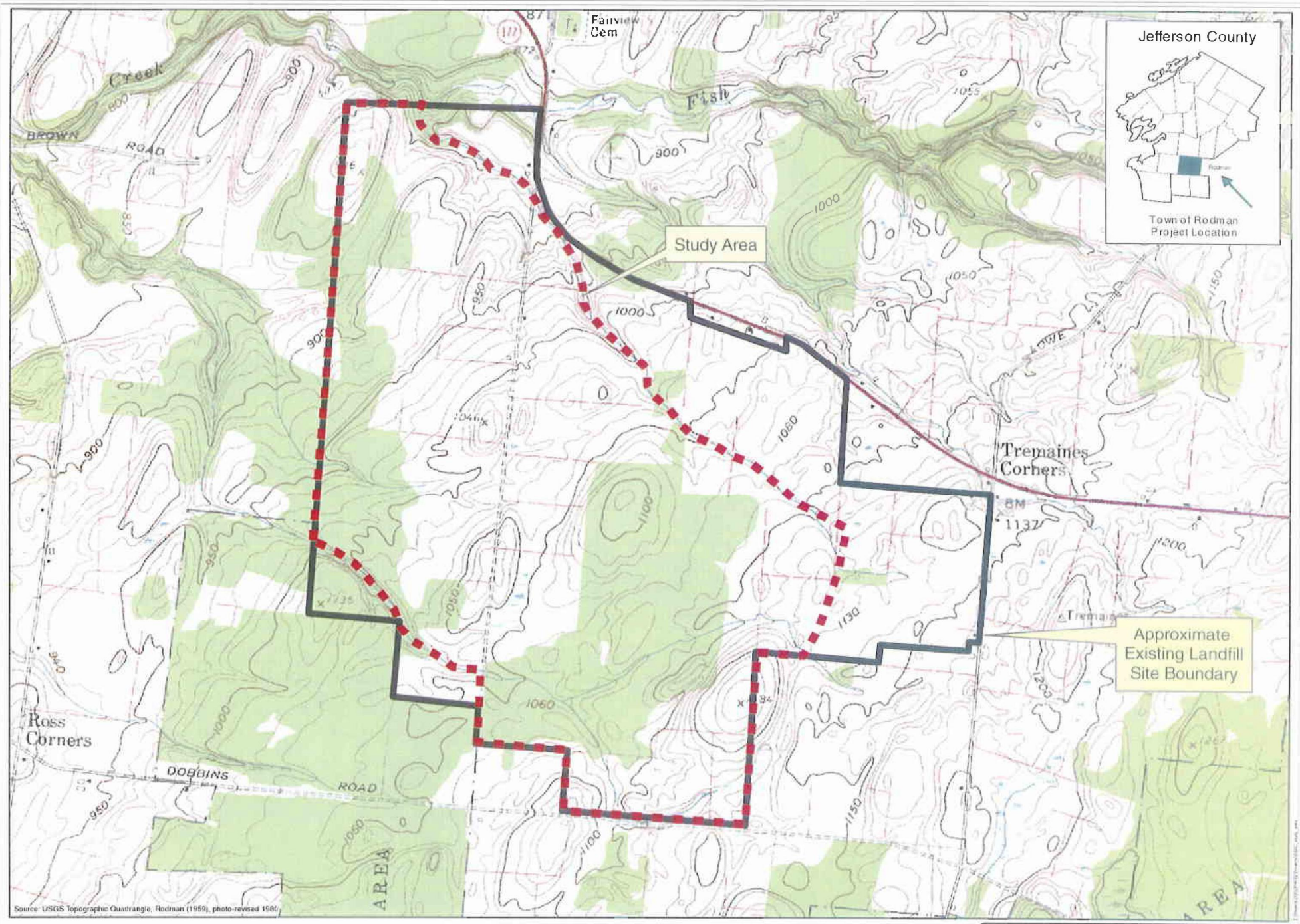

Barton & Loguidice, P.C.
Consulting Engineers

Development Authority of the North Country Regional Landfill
6/14/04
**Site Location Map**
Jefferson County New York

Figure 1
Project No. 274.032

# Figure 2

# Study Area



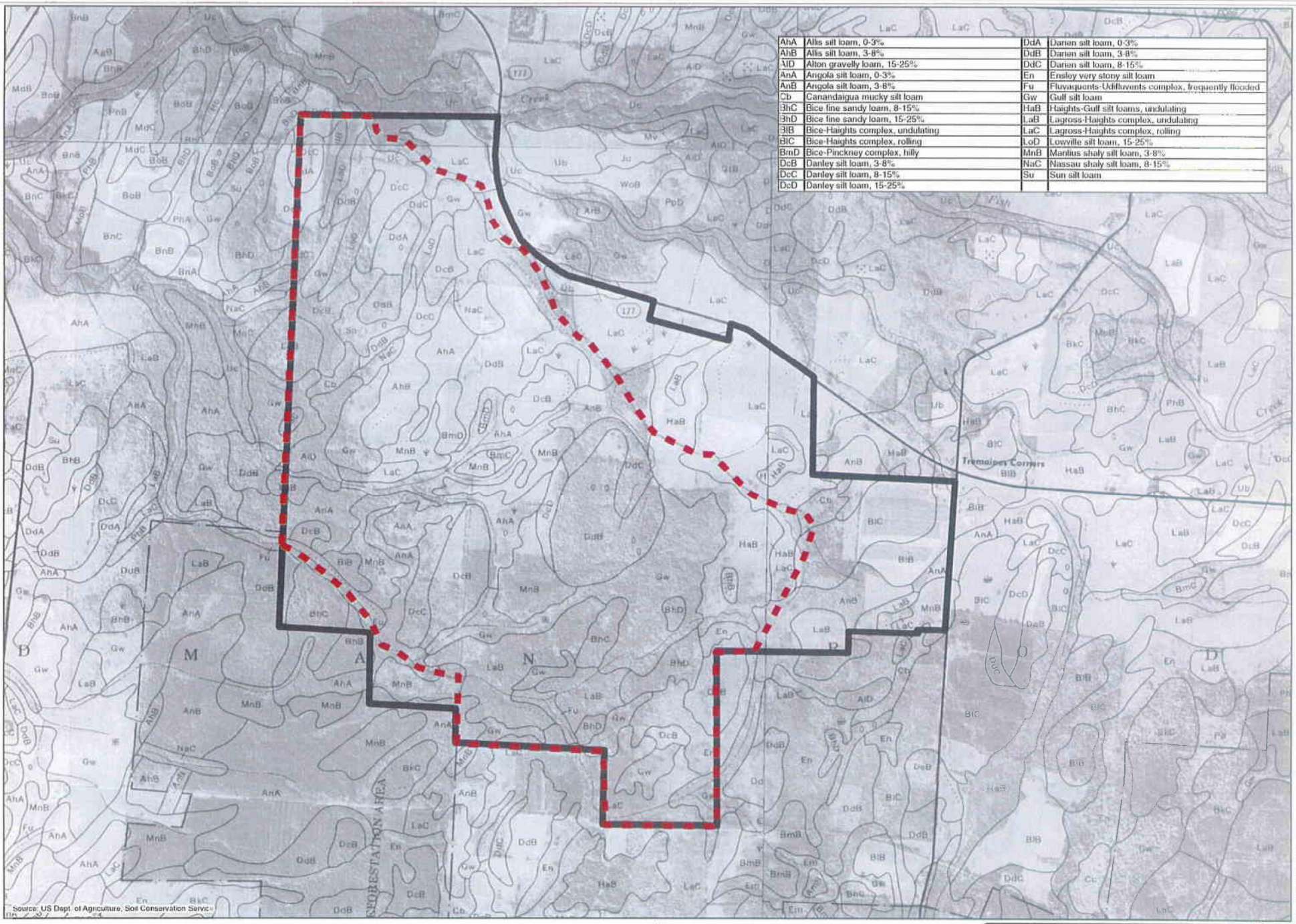

Barton & Loguidice, P.C.
Consulting Engineers

Development Authority of the North Country Regional Landfill
6/15/04
**Study Area**
Jefferson County
New York

Figure 2
Project No. 394.037

# Figure 3

# Jefferson County Soil Survey Map




Barton & Loguidice, P.C.
Consulting Engineers

Development Authority of the North Country
Regional Landfill
6/15/04

**Soil Survey**

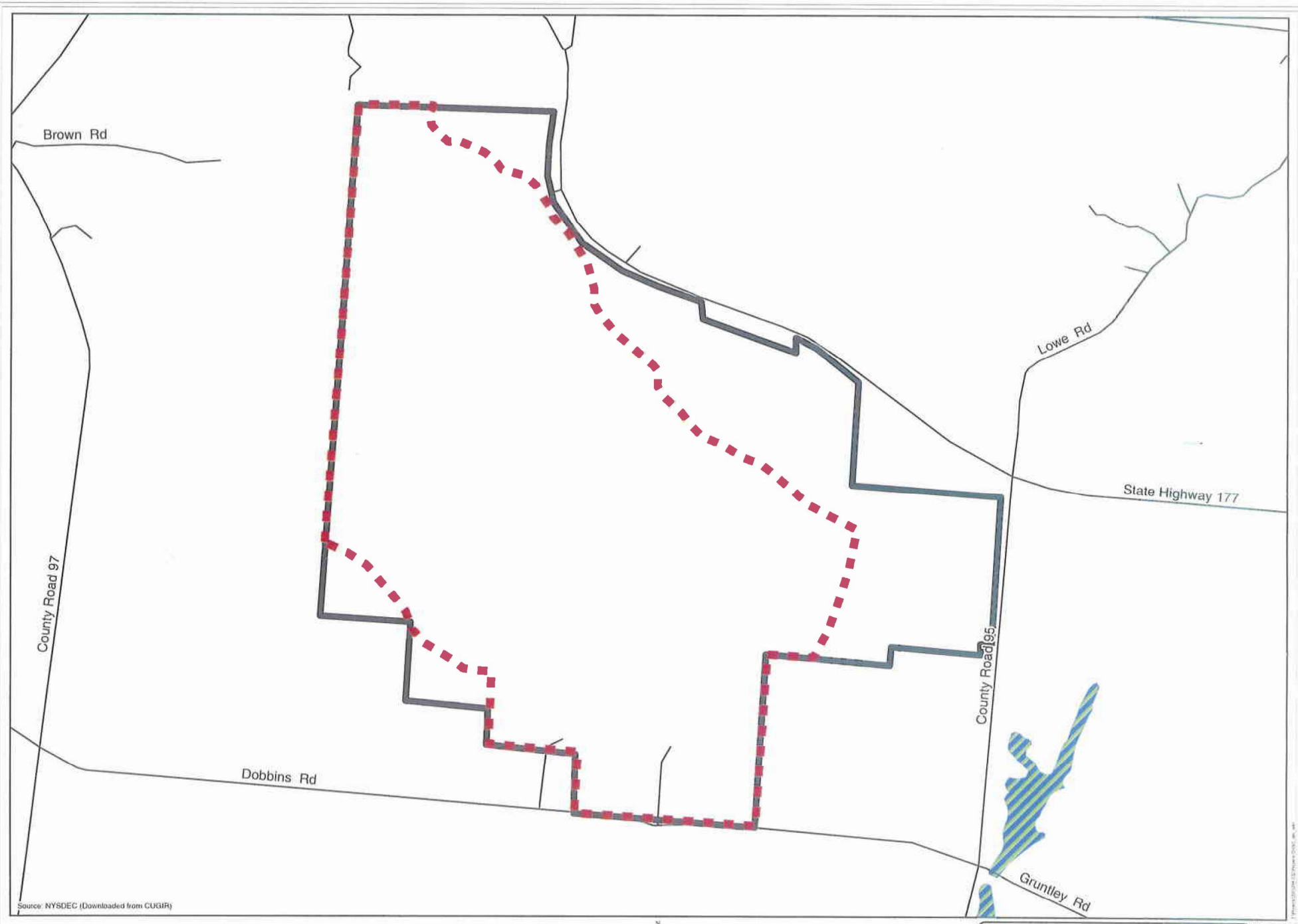
Jefferson County New York

Figure 3

Project No. 394.032

# Figure 4

# NYSDEC Freshwater Wetland Map




Development Authority of the North Country 6/15/04
Regional Landfill

**NYSDEC Freshwater Wetlands**

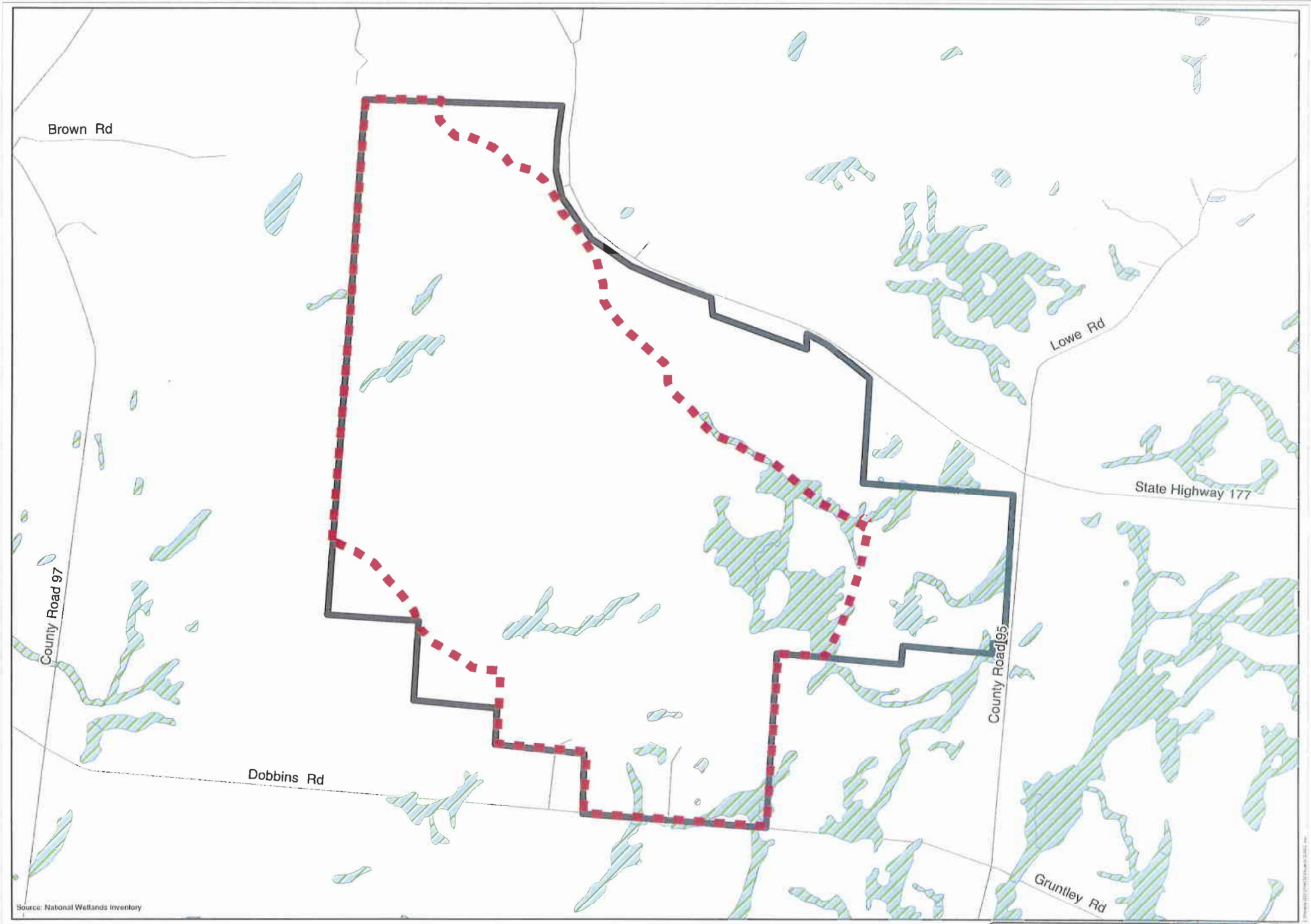
Jefferson County New York

Figure 4

Project No. 394.032

# Figure 5

# National Wetland Inventory Map




Barton & Loguidice, P.C.
Consulting Engineers

Development Authority of the North Country Regional Landfill
6/15/04

**NWI Wetlands**

Jefferson County New York

Figure 5

Project No. 394.032

# Appendix A

## Site Base Map

(includes 2001-2003 site photograph locations from Appendix C)

# Appendix A-1
# Revised Site Base Map
(includes 2009 delineated wetland locations)

# Appendix B

# Field Data Sheets

# 2004 Wetland Delineation Report

# Field Data Sheets

# 2009 Wetland Delineation Supplement

# Field Data Sheets

**DATA FORM**
**ROUTINE WETLAND DETERMINATION**
(1987 COE Wetlands Delineation Manual)

| | | | |
|---|---|---|---|
| Project/Site | Development Authority of the North Country | Date: | 9/21/2009 |
| Applicant/Owner | Town of Rodman | County: | Jefferson |
| Investigator | James Saxton | State: | New York |

| | | | |
|---|---|---|---|
| Do Normal Circumstances exist on the site? | Yes | No | Community ID: D1 |
| Is the site significantly disturbed (Atypical Situation)? | Yes | No | Transect ID: 1 |
| Is the area a potential Problem Area? | Yes | No | Plot ID: U1 |
| (If needed, explain on reverse) | | | |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator |
|---|---|---|
| 1 Acer saccharum | Tree | FACU- |
| 2 Tsuga canadensis | Tree | FACU |
| 3 Fagus grandifolia | Tree | FACU |
| 4 Trillium flexipes | Herb | FAC |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -): 25%

Remarks:

## HYDROLOGY

___ Recorded Data (Describe in Remarks)
- ___ Steam, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth of Free Water in Pit: >16 (in.)

Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators

Primary Indicators
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:
No hydrologic Indicators, abrupt topographic rise from wetland to upland

## SOILS

Map Unit Name
(Series and Phase): Lagross-Haights complex rolling

Drainage Class: well

Taxonomy (subgroup): NA

Field Observations
Confirm mapped type? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture, Concretions, Structure, etc. |
|---|---|---|---|---|---|
| 0-6 | A | 10YR4/1 | none | | loam |
| 6+ | B | 10YR4/6 | none | | loam |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks:

## WETLAND DETERMINATION

| | | |
|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No |
| Wetland Hydrology Present? | Yes | No |
| Hydric Soils Present? | Yes | No |

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

**DATA FORM**
**ROUTINE WETLAND DETERMINATION**
(1987 COE Wetlands Delineation Manual)

| | | | |
|---|---|---|---|
| Project/Site | Development Authority of the North Country | Date: | 9/21/2009 |
| Applicant/Owner | Town of Rodman | County: | Jefferson |
| Investigator | James Saxton | State: | New York |

| | | | |
|---|---|---|---|
| Do Normal Circumstances exist on the site? | Yes | No | Community ID: D1 |
| Is the site significantly disturbed (Atypical Situation)? | Yes | No | Transect ID: 1 |
| Is the area a potential Problem Area? | Yes | No | Plot ID: W1 |
| (If needed, explain on reverse) | | | |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator |
|---|---|---|
| 1 Impatiens capensis | Herb | FACW |
| 2 Onoclea sensibilis | Herb | FACW |
| 3 Osmunda cinnamomea | Herb | FACW |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |

| Dominant Plant Species | Stratum | Indicator |
|---|---|---|
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -): 100%

Remarks:

## HYDROLOGY

Recorded Data (Describe in Remarks)
- ___ Steam, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

| | | |
|---|---|---|
| Depth of Surface Water: | 0 | (in.) |
| Depth of Free Water in Pit: | 0 | (in.) |
| Depth to Saturated Soil: | 0 | (in.) |

Wetland Hydrology Indicators

Primary Indicators
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

## SOILS

Map Unit Name
(Series and Phase): Gulf silt loam

Drainage Class: poorly

Taxonomy (subgroup): Aeric Endoaquepts

Field Observations
Confirm mapped type? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture, Concretions, Structure, etc. |
|---|---|---|---|---|---|
| 0-2 | A | 10YR5/1 | none | | Mucky Silt Loam |
| 2+ | B | 10YR4/2 | 7.5YR6/8 | many, coarse, prom | sil, weak sbk |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
x Reducing Conditions
X Gleyed or Low Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks:

## WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

**DATA FORM**
**ROUTINE WETLAND DETERMINATION**
(1987 COE Wetlands Delineation Manual)

| | | | |
|---|---|---|---|
| Project/Site | Development Authority of the North Country | Date: | 9/21/2009 |
| Applicant/Owner | Town of Rodman | County: | Jefferson |
| Investigator | James Saxton | State: | New York |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site? | Yes | No | Community ID: | D3 |
| Is the site significantly disturbed (Atypical Situation)? | Yes | No | Transect ID: | 1 |
| Is the area a potential Problem Area? | Yes | No | Plot ID: | U1 |
| (If needed, explain on reverse) | | | | |

## VEGETATION

| | Dominant Plant Species | Stratum | Indicator |
|---|---|---|---|
| 1 | Acer saccharum | Tree | FACU- |
| 2 | Tsuga canadensis | Tree | FACU |
| 3 | Fagus grandifolia | Tree | FACU |
| 4 | Trillium flexipes | Herb | FAC |
| 5 | Betula alleghaniensis | Tree | FAC |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -) 40%

Remarks:

## HYDROLOGY

__ Recorded Data (Describe in Remarks)
___ Steam, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth of Free Water in Pit: >16 (in.)

Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators

Primary Indicators
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:
No hydrologic Indicators, abrupt topographic rise from wetland to upland

## SOILS

Map Unit Name
(Series and Phase): Lagross-Haights complex rolling

Drainage Class: well

Taxonomy (subgroup): NA

Field Observations
Confirm mapped type? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture, Concretions, Structure, etc. |
|---|---|---|---|---|---|
| 0-5 | A | 10YR3/2 | none | | loam |
| 5+ | B | 10YR5/4 | none | | loam |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks:

## WETLAND DETERMINATION

| | | |
|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No |
| Wetland Hydrology Present? | Yes | No |
| Hydric Soils Present? | Yes | No |

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

**DATA FORM**
**ROUTINE WETLAND DETERMINATION**
(1987 COE Wetlands Delineation Manual)

| | | | |
|---|---|---|---|
| Project/Site | Development Authority of the North Country | Date: | 9/21/2009 |
| Applicant/Owner | Town of Rodman | County: | Jefferson |
| Investigator | James Saxton | State: | New York |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site? | Yes | No | Community ID: | D3 |
| Is the site significantly disturbed (Atypical Situation)? | Yes | No | Transect ID: | 1 |
| Is the area a potential Problem Area? | Yes | No | Plot ID: | W1 |
| (If needed, explain on reverse) | | | | |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator |
|---|---|---|
| 1 Impatiens capensis | Herb | FACW |
| 2 Onoclea sensibilis | Herb | FACW |
| 3 Osmunda cinnamomea | Herb | FACW |
| 4 Polyganum sagittatum | Herb | OBL |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |

| Dominant Plant Species | Stratum | Indicator |
|---|---|---|
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -): 100%

Remarks:

## HYDROLOGY

___ Recorded Data (Describe in Remarks)
- ___ Steam, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

| | | |
|---|---|---|
| Depth of Surface Water: | 0 | (in.) |
| Depth of Free Water in Pit: | 0 | (in.) |
| Depth to Saturated Soil: | 0 | (in.) |

Wetland Hydrology Indicators

Primary Indicators
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

## SOILS

Map Unit Name
(Series and Phase): Gulf silt loam

Drainage Class: poorly

Taxonomy (subgroup): Aeric Endoaquepts

Field Observations
Confirm mapped type? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture, Concretions, Structure, etc. |
|---|---|---|---|---|---|
| 0-3 | A | 10YR4/1 | none | | Mucky Silt Loam |
| 3+ | B | 10YR6/1 | 7.5YR6/8 | many, coarse, prom | sil, weak sbk |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
x Reducing Conditions
X Gleyed or Low Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks:

## WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No

Remarks:

**DATA FORM**
**ROUTINE WETLAND DETERMINATION**
(1987 COE Wetlands Delineation Manual)

| | | | |
|---|---|---|---|
| Project/Site | Development Authority of the North Country | Date: | 9/24/2009 |
| Applicant/Owner | Town of Rodman | County: | Jefferson |
| Investigator | James Saxton | State: | New York |

| | | | |
|---|---|---|---|
| Do Normal Circumstances exist on the site? | Yes | No | Community ID: D5 |
| Is the site significantly disturbed (Atypical Situation)? | Yes | **No** | Transect ID: 1 |
| Is the area a potential Problem Area? | Yes | **No** | Plot ID: U1 |
| (If needed, explain on reverse) | | | |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator |
|---|---|---|
| 1 Pteridium aquilinum | Herb | FACU |
| 2 Solidago canadensis | Herb | FACU |
| 3 Spiraea latifolia | Shrub | FAC+ |
| 4 Prunus serotina | Tree | FACU |
| 5 Acer saccharum | Tree | FACU- |
| 6 Fraxinus pennsylvanica | Tree | FACW |
| 7 | | |
| 8 | | |

| Dominant Plant Species | Stratum | Indicator |
|---|---|---|
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -): 33%

Remarks:

## HYDROLOGY

___ Recorded Data (Describe in Remarks)
- ___ Steam, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth of Free Water in Pit: >16 (in.)

Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators

Primary Indicators
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:
Topographic rise from adjacent wetland

## SOILS

Map Unit Name
(Series and Phase): Gulf silt loam

Drainage Class: poorly

Taxonomy (subgroup): Aeric endoaquept

Field Observations
Confirm mapped type? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture, Concretions, Structure, etc. |
|---|---|---|---|---|---|
| 0-2 | OA | | | | Fibrous duff |
| 2-4 | A | 10YR4/3 | none | | Silt loam |
| 4+ | B | 10YR4/4 | 10YR6/8 | common med distinct | Silt loam |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks:

## WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes **No**
Wetland Hydrology Present? Yes **No**
Hydric Soils Present? Yes **No**

Is this Sampling Point Within a Wetland? Yes **No**

Remarks:

Approved by HQUSACE 3/92

**DATA FORM**
**ROUTINE WETLAND DETERMINATION**
(1987 COE Wetlands Delineation Manual)

| | | | |
|---|---|---|---|
| Project/Site | Development Authority of the North Country | Date: | 9/24/2009 |
| Applicant/Owner | Town of Rodman | County: | Jefferson |
| Investigator | James Saxton | State: | New York |

| | | | |
|---|---|---|---|
| Do Normal Circumstances exist on the site? | **Yes** No | Community ID: | D5 |
| Is the site significantly disturbed (Atypical Situation)? | Yes **No** | Transect ID: | 1 |
| Is the area a potential Problem Area? | Yes **No** | Plot ID: | W1 |
| (If needed, explain on reverse) | | | |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator |
|---|---|---|
| 1 Scirpus cyperinus | Herb | FACW+ |
| 2 Polyganum sagittatum | Herb | OBL |
| 3 Eupatorium perfoliatum | Herb | FACW+ |
| 4 Impatiens capensis | Herb | FACW |
| 5 Carex crinita | Herb | OBL |
| 6 Solidago rugosa | Herb | RAC |
| 7 Ononclea sensibilis | Herb | FACW |
| 8 Acer rubrum | Tree | FAC |

| Dominant Plant Species | Stratum | Indicator |
|---|---|---|
| 9 Fraxinus pennsylvanica | Tree | FACW |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |

Percent of Dominant Species that are OBL, FACW or FAC (excludlng FAC -) 100%

Remarks:

## HYDROLOGY

___ Recorded Data (Describe in Remarks)
___ Steam, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth of Free Water in Pit: 0 (in.)

Depth to Saturated Soil: 12 (in.)

Wetland Hydrology Indicators
Primary Indicators
___ Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required)
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

## SOILS

Map Unit Name
(Series and Phase): Gulf silt loam

Drainage Class: poorly

Field Observations

Taxonomy (subgroup): Aeric endoaquept

Confirm mapped type? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture, Concretions, Structure, etc. |
|---|---|---|---|---|---|
| 0-2 | A | 10YR3/0 | none | | mucky silt loam |
| 2+ | B | 10YR6/2 | 7.5YR6/8 | many coarse prom | silty clay loam |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
X Gleyed or Low Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks:

## WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

**DATA FORM**
**ROUTINE WETLAND DETERMINATION**
(1987 COE Wetlands Delineation Manual)

| | | | |
|---|---|---|---|
| Project/Site | Development Authority of the North Country | Date: | 9/24/2009 |
| Applicant/Owner | Town of Rodman | County: | Jefferson |
| Investigator | James Saxton | State: | New York |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site? | Yes | No | Community ID: | D6 |
| Is the site significantly disturbed (Atypical Situation)? | Yes | No | Transect ID: | 1 |
| Is the area a potential Problem Area? | Yes | No | Plot ID: | U1 |
| (If needed, explain on reverse) | | | | |

## VEGETATION

| | Dominant Plant Species | Stratum | Indicator |
|---|---|---|---|
| 1 | Pteridium aquilinum | Herb | FACU |
| 2 | Acer saccharum | Tree | FACU- |
| 3 | Fagus grandifolia | Tree | FACU |
| 4 | Betula alleghaniensis | Tree | FAC |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |

| | Dominant Plant Species | Stratum | Indicator |
|---|---|---|---|
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -) 25%

Remarks:

## HYDROLOGY

___ Recorded Data (Describe in Remarks)
- ___ Steam, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

| | | |
|---|---|---|
| Depth of Surface Water: | 0 | (in.) |
| Depth of Free Water in Pit: | >16 | (in.) |
| Depth to Saturated Soil: | >16 | (in.) |

Wetland Hydrology Indicators

Primary Indicators
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:
Topographic rise from adjacent wetland

## SOILS

Map Unit Name
(Series and Phase): Gulf silt loam — Drainage Class: poorly

Taxonomy (subgroup): Aeric endoaquept — Field Observations Confirm mapped type? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture, Concretions, Structure, etc. |
|---|---|---|---|---|---|
| 0-4 | A | 10YR4/2 | None | | Silt loam, crumb |
| 4+ | B | 10YR 4/4 | None | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

- __ Histosol
- __ Histic Epipedon
- __ Sulfidic Odor
- __ Aquic Moisture Regime
- __ Reducing Conditions
- __ Gleyed or Low Chroma Colors
- __ Concretions
- __ High Organic Content in Surface Layer in Sandy Soils
- __ Organic Streaking in Sandy Soils
- __ Listed on Local Hydric Soils List
- __ Listed on National Hydric Soils List
- __ Other (Explain in Remarks)

Remarks:

## WETLAND DETERMINATION

| | | |
|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No |
| Wetland Hydrology Present? | Yes | No |
| Hydric Soils Present? | Yes | No |

Is this Sampling Point Within a Wetland? Yes No

Remarks:

**DATA FORM**
**ROUTINE WETLAND DETERMINATION**
(1987 COE Wetlands Delineation Manual)

| | | | |
|---|---|---|---|
| Project/Site | Development Authority of the North Country | Date: | 9/21/2009 |
| Applicant/Owner | Town of Rodman | County: | Jefferson |
| Investigator | James Saxton | State: | New York |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site? | **Yes** | No | Community ID: | D6 |
| Is the site significantly disturbed (Atypical Situation)? | Yes | **No** | Transect ID: | 1 |
| Is the area a potential Problem Area? | Yes | **No** | Plot ID: | W1 |
| (If needed, explain on reverse) | | | | |

## VEGETATION

| | Dominant Plant Species | Stratum | Indicator |
|---|---|---|---|
| 1 | Impatiens capensis | Herb | FACW |
| 2 | Onoclea sensibilis | Herb | FACW |
| 3 | Osmunda cinnamomea | Herb | FACW |
| 4 | Polyganum sagittatum | Herb | OBL |
| 5 | Eupatorium perfoliatum | Herb | FACW+ |
| 6 | Eupatoriadelphus maculatus | Herb | FACW |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -): 100%

Remarks:

## HYDROLOGY

___ Recorded Data (Describe in Remarks)
- ___ Steam, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

| | | |
|---|---|---|
| Depth of Surface Water: | 0 | (in.) |
| Depth of Free Water in Pit: | 0 | (in.) |
| Depth to Saturated Soil: | 0 | (in.) |

Wetland Hydrology Indicators

Primary Indicators
- ___ Inundated
- X Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

## SOILS

Map Unit Name
(Series and Phase): Gulf silt loam

Drainage Class: poorly

Taxonomy (subgroup): Aeric Endoaquepts

Field Observations
Confirm mapped type? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture, Concretions, Structure, etc. |
|---|---|---|---|---|---|
| 0-5 | A | 10YR4/1 | none | | Mucky Silt Loam |
| 5+ | B | 10YR6/1 | 7.5YR6/8 | com, med, prom | sil, weak sbk |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
x Sulfidic Odor
__ Aquic Moisture Regime
x Reducing Conditions
X Gleyed or Low Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks:

## WETLAND DETERMINATION

Hydrophytic Vegetation Present? Yes No
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

**DATA FORM**
**ROUTINE WETLAND DETERMINATION**
(1987 COE Wetlands Delineation Manual)

| | | | |
|---|---|---|---|
| Project/Site | Development Authority of the North Country | Date: | 9/24/2009 |
| Applicant/Owner | Town of Rodman | County: | Jefferson |
| Investigator | James Saxton | State: | New York |

| | | | |
|---|---|---|---|
| Do Normal Circumstances exist on the site? | **Yes** | No | Community ID: Area 1 |
| Is the site significantly disturbed (Atypical Situation)? | Yes | **No** | Transect ID: |
| Is the area a potential Problem Area? | Yes | **No** | Plot ID: DP-1 |
| (If needed, explain on reverse) | | | |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator | Dominant Plant Species | Stratum | Indicator |
|---|---|---|---|---|---|
| 1 Onoclea sensibilis | Herb | FACW | 9 | | |
| 2 Osmunda cinnamomea, | Herb | FACW | 10 | | |
| 3 Acer rubrum | Tree | FAC | 11 | | |
| 4 Acer saccharum | Tree | FACU- | 12 | | |
| 5 Fraxinus pennsylvanica | Tree | FACW | 13 | | |
| 6 Betula alleghaniensis | Tree | FAC | 14 | | |
| 7 | | | 15 | | |
| 8 | | | 16 | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -): 83%

Remarks:

## HYDROLOGY

__ Recorded Data (Describe in Remarks)
- ___ Steam, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

- Depth of Surface Water: 0 (in.)
- Depth of Free Water in Pit: 16 (in.)
- Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators

Primary Indicators
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

## SOILS

Map Unit Name
(Series and Phase): Gulf silt loam

Drainage Class: poorly

Taxonomy (subgroup): Aeric endoaquept

Field Observations
Confirm mapped type? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture, Concretions, Structure, etc. |
|---|---|---|---|---|---|
| 0-4 | A | 10YR4/2 | none | | silt loam |
| 4+ | B | 10YR 6/3 | 10YR 5/8 | cmd | silt loam |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Molsture Regime
__ Reducing Conditions
__ Gleyed or Low Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks:

## WETLAND DETERMINATION

| | | |
|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No |
| Wetland Hydrology Present? | Yes | No |
| Hydric Soils Present? | Yes | No |

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

**DATA FORM**
**ROUTINE WETLAND DETERMINATION**
(1987 COE Wetlands Delineation Manual)

| | | | |
|---|---|---|---|
| Project/Site | Development Authority of the North Country | Date: | 9/24/2009 |
| Applicant/Owner | Town of Rodman | County: | Jefferson |
| Investigator | James Saxton | State: | New York |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site? | **Yes** | No | Community ID: | Area 1 |
| Is the site significantly disturbed (Atypical Situation)? | Yes | **No** | Transect ID: | |
| Is the area a potential Problem Area? | Yes | **No** | Plot ID: | DP-2 |
| (If needed, explain on reverse) | | | | |

## VEGETATION

| | Dominant Plant Species | Stratum | Indicator | | Dominant Plant Species | Stratum | Indicator |
|---|---|---|---|---|---|---|---|
| 1 | Onoclea sensibilis | Herb | FACW | 9 | | | |
| 2 | Osmunda cinnamomea, | Herb | FACW | 10 | | | |
| 3 | Acer rubrum | Tree | FAC | 11 | | | |
| 4 | Acer saccharum | Tree | FACU- | 12 | | | |
| 5 | Fraxinus pennsylvanica | Tree | FACW | 13 | | | |
| 6 | | | | 14 | | | |
| 7 | | | | 15 | | | |
| 8 | | | | 16 | | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -): 80%

Remarks:

## HYDROLOGY

___ Recorded Data (Describe in Remarks)
- ___ Steam, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

| | | |
|---|---|---|
| Depth of Surface Water: | 0 | (in.) |
| Depth of Free Water in Pit: | 16 | (in.) |
| Depth to Saturated Soil: | >16 | (in.) |

Wetland Hydrology Indicators

Primary Indicators
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

## SOILS

Map Unit Name
(Series and Phase): Gulf silt loam

Drainage Class: poorly

Taxonomy (subgroup): Aeric endoaquept

Field Observations
Confirm mapped type? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture, Concretions, Structure, etc. |
|---|---|---|---|---|---|
| 0-3 | A | 10YR 3/3 | none | | silt loam |
| 3+ | B | 10YR 5/3 | 10YR 5/8 | cmd | silt loam |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks:

## WETLAND DETERMINATION

| | | |
|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No |
| Wetland Hydrology Present? | Yes | No |
| Hydric Soils Present? | Yes | No |

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

**DATA FORM**
**ROUTINE WETLAND DETERMINATION**
(1987 COE Wetlands Delineation Manual)

| | | | |
|---|---|---|---|
| Project/Site | Development Authority of the North Country | Date: | 9/24/2009 |
| Applicant/Owner | Town of Rodman | County: | Jefferson |
| Investigator | James Saxton | State: | New York |

| | | | |
|---|---|---|---|
| Do Normal Circumstances exist on the site? | **Yes** | No | Community ID: Area 1 |
| Is the site significantly disturbed (Atypical Situation)? | Yes | **No** | Transect ID: |
| Is the area a potential Problem Area? | Yes | **No** | Plot ID: DP-3 |
| (If needed, explain on reverse) | | | |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator | Dominant Plant Species | Stratum | Indicator |
|---|---|---|---|---|---|
| 1 Impatiens capensis | Herb | FACW | 9 | | |
| 2 Matteuccia struthiopteris, | Herb | FACW | 10 | | |
| 3 Acer rubrum | Tree | FAC | 11 | | |
| 4 Acer saccharum | Tree | FACU- | 12 | | |
| 5 | | | 13 | | |
| 6 | | | 14 | | |
| 7 | | | 15 | | |
| 8 | | | 16 | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -): 75%

Remarks:

## HYDROLOGY

___ Recorded Data (Describe in Remarks)
- ___ Steam, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth of Free Water in Pit: 16 (in.)

Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators

Primary Indicators
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks:

## SOILS

Map Unit Name
(Series and Phase): Gulf silt loam

Drainage Class: poorly

Taxonomy (subgroup): Aeric endoaquept

Field Observations
Confirm mapped type? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture, Concretions, Structure, etc. |
|---|---|---|---|---|---|
| 0-4 | A | 10YR3/1 | none | | silt loam |
| 4+ | B | 10YR 5/3 | 10YR 5/8 | cmd | silt loam |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks:

## WETLAND DETERMINATION

| | | |
|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No |
| Wetland Hydrology Present? | Yes | No |
| Hydric Soils Present? | Yes | No |

Is this Sampling Point Within a Wetland? Yes No

Remarks:

**DATA FORM**
**ROUTINE WETLAND DETERMINATION**
(1987 COE Wetlands Delineation Manual)

| | | | |
|---|---|---|---|
| Project/Site | Development Authority of the North Country | Date: | 9/24/2009 |
| Applicant/Owner | Town of Rodman | County: | Jefferson |
| Investigator | James Saxton | State: | New York |

| | | | | |
|---|---|---|---|---|
| Do Normal Circumstances exist on the site? | **Yes** | No | Community ID: | Area 1 |
| Is the site significantly disturbed (Atypical Situation)? | Yes | **No** | Transect ID: | |
| Is the area a potential Problem Area? | Yes | **No** | Plot ID: | DP-4 |
| (If needed, explain on reverse) | | | | |

## VEGETATION

| Dominant Plant Species | Stratum | Indicator |
|---|---|---|
| 1 Tilia americana | Tree | FACU |
| 2 Acer saccharum | Tree | FACU |
| 3 Fraxinus pennsylvanica | Tree | FACW |
| 4 Onoclea sensibilis | Herb | FACW |
| 5 Rubus allegheniensis | Herb | FACU |
| 6 | | |
| 7 | | |
| 8 | | |

| Dominant Plant Species | Stratum | Indicator |
|---|---|---|
| 9 | | |
| 10 | | |
| 11 | | |
| 12 | | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC -): 40%

Remarks:
Observed saplings in the area consisted entirely of Sugar Maple

## HYDROLOGY

___ Recorded Data (Describe in Remarks)
___ Steam, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:

Depth of Surface Water: 0 (in.)

Depth of Free Water in Pit: >16 (in.)

Depth to Saturated Soil: >16 (in.)

Wetland Hydrology Indicators

Primary Indicators
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:
Soils were moist at surface, became drier with depth

## SOILS

Map Unit Name
(Series and Phase): Gulf silt loam

Drainage Class: poorly

Field Observations

Taxonomy (subgroup): Aeric endoaquept

Confirm mapped type? Yes No

Profile Description

| Depth (inches) | Horizon | Matrix Color (Munsell moist) | Mottle Colors (Munsell Moist) | Mottle Abundance/Contrast | Texture, Concretions, Structure, etc. |
|---|---|---|---|---|---|
| 0-4 | A | 10YR4/2 | None | | Silt loam |
| 4+ | B | 10YR6/3 | 10YR5/8 | many, med, distinct | Silty clay loam |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Hydric Soil Indicators:

__ Histosol
__ Histic Epipedon
__ Sulfidic Odor
__ Aquic Moisture Regime
__ Reducing Conditions
__ Gleyed or Low Chroma Colors
__ Concretions
__ High Organic Content in Surface Layer in Sandy Soils
__ Organic Streaking in Sandy Soils
__ Listed on Local Hydric Soils List
__ Listed on National Hydric Soils List
__ Other (Explain in Remarks)

Remarks:

## WETLAND DETERMINATION

| | | |
|---|---|---|
| Hydrophytic Vegetation Present? | Yes | No |
| Wetland Hydrology Present? | Yes | No |
| Hydric Soils Present? | Yes | No |

Is this Sampling Point Within a Wetland? Yes No

Remarks:

Approved by HQUSACE 3/92

# Appendix C

# Site Photographs

# 2004 Wetland Delineation Report Photographs

# 2009 Wetland Delineation Supplement Photographs

**Appendix C - Project Photographs**
**2009 Supplemental Wetland Delineation**

Photograph 1 - Area 1 along southern edge of wetland A. Data point DP-1

Photograph 2 - Second view of Area 1.  Data Point DP-2 location.

**Appendix C - Project Photographs**
**2009 Supplemental Wetland Delineation**

Photograph 3 - Data point DP-3 showing bright soils

Photograph 4 - Data point DP-4 in Area 1

**Appendix C - Project Photographs**
**2009 Supplemental Wetland Delineation**

Photograph 5 - Wetland D-2

Photograph 6 - View west along Wetland D-6 looking toward Wetland I.

**Appendix C - Project Photographs**
**2009 Supplemental Wetland Delineation**

Photograph 7 - Wetland D-3

Photograph 8 - Wetland D-4 looking west from upland area across the boundary. Note flagging defining the boundary.