

## **SECTION 8.0**

### **Wetland Classification & Impacts**

## WETLAND DELINEATION AND CLASSIFICATION

### 8.0 METHODS

The state and federal jurisdictional wetlands within the project area were delineated and flagged by New Hampshire Certified Wetland Scientist (CWS), Barry H. Keith, from May 2018 through July 2023. The core candidate lands evaluated for potential development, the “site”, encompass approximately 400 acres. The subject lots of record (Map 406 Lots 2.1 and 3) total approximately 713 acres. Supplemental wetland delineation along Douglas Drive, Route 116 and in adjoining areas adjacent to the site were delineated between 2019-2023. The wetland mapping consisted of the following areas:

- All areas within the proposed limits of disturbance of the nine on-site alternatives (seven landfill footprint concepts and two access routes);
- Areas within the Alder Brook catchment adjacent to the proposed limits of disturbance;
- The area between the proposed landfill footprints and the confluences of the Alder Brook tributaries (west and downgradient of the proposed footprints);
- The areas between the proposed infrastructure area and the tributaries to Alder Brook; and
- The areas adjacent to the improvements of Douglas Drive and NH Route 116.

In total, site-specific wetlands mapping was performed over an approximately 600-acre area. Refer to Figure 8.1 for an overview of mapped areas.

Other wetlands and streams in an approximately 400-acre area outside of the core candidate land area on both subject and non-subject lots, were delineated and depicted using the Corps (1987) “Routine On-site Determination Method.” This method utilizes existing topographic base plans, NWI maps, aerial photography and a reconnaissance level field review. Areas east of the Alder Brook/Forest Lake watershed boundary were initially screened through the Siting, Evaluation and Minimization Report (Section 7.3). The NWI, soils, groundwater and surface water drainage patterns and site topography were assessed to determine the general feasibility

of this area to site the facility. Various limiting factors deemed this area as unsuitable for project development (refer to the site report in Section 7.3). Moreover, the property owner maintains a quarry along Douglas Drive and has retained development rights for a proposed future industrial park, thus precluding landfill development and the need for further field wetland evaluation of this area. Therefore, the Corps 1987 Method is considered appropriate for delineation of the portions of the subject lots not considered for landfill development. Of the portion of the approximately 713 acre subject property lots within the Alder Brook/Hatch Brook catchment, only approximately 50 acres southeast of the proposed infrastructure area and approximately 13 acres adjacent to Alder Brook were not field delineated. Neither of these areas included candidate land for project development. All other areas on the subject lots within the catchment were mapped by field delineation.

The delineation and wetland classifications were conducted in accordance with the following guidance documents:

- N.H. Code of Administrative Rules (Env-Wt 406.01(a) with the techniques outlined in the 1987 “U.S. Army Corps of Engineers Wetland Delineation Manual, Technical Report Y-87-1.”
- U.S. Army Corps of Engineers 2012 “Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version2.0).” U.S. Army Corps of Engineers Research and Development Center, Environmental Laboratory.
- U.S. Army Corps of Engineers 2016 “National List of Plant Species that occur in wetlands: Northcentral and Northeast Region.” Version 3.3, U.S. Army Corps of Engineers Research and Development Center, Environmental Laboratory.”
- U.S. Fish and Wildlife Service Manual FWS/OBS-79/31 entitled “Classification of Wetlands and Deepwater Habitats of the United States, Cowardin et al, 1979.”
- U.S. Federal Geological Data Committee. 2013. “Classification of Wetlands and Deepwater Habitats of the United States.” Wetlands Subcommittee, Reston, VA.
- New England Hydric Soils Technical Committee, 2017. 4<sup>th</sup> Edition, “Field Indicators for Identifying Hydric Soils in New England.” New England Interstate Water Pollution Control Commission, Lowell, Massachusetts.

- U.S. Department of Agriculture, Natural Resource Conservation Service, 2010. “Field Indicators of Hydric Soils in the United States, Version 7.0.” USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils.

Comprehensive on-site wetland determination employed an evaluation of hydric soils, wetland hydrology and vegetation to document existing wetland conditions. A series of Wetland Determination Data Forms were compiled to document existing wetland conditions within representative locations throughout the site. The limits of jurisdictional wetlands were flagged and numbered using pink and black striped surveyor’s ribbon. Wetland and stream cover types were classified using the USFWS (Cowardin) wetland classification system. Previously disturbed areas include non-permitted post jurisdictional wetland fill areas associated with construction of portions of Douglas Drive (from Route 116 to the scale house) and wetland road fill areas identified for the construction of the haul road access to the northern and western gravel pit areas. These after-the-fact (ATF) fills are depicted in yellow on the Wetland Impact Plans.

Wetlands mapping was conducted by Horizons Engineering, Inc., New Hampshire Licensed land surveyors. Wetland flags were field surveyed using real-time Kinematic GPS methods in a base/rover configuration with a base position established with the on-line user positioning service or by sub-meter handheld GPS methods using a Trimble GEOXH unit and differentially corrected with post processing. All positions are based on the New Hampshire coordinate system, NAD83 (Grid North).

## **8.1 WETLAND DELINEATION & CLASSIFICATIONS – EXISTING CONDITIONS**

The numbered wetland flag locations and wetland classification codes for the respective wetland areas are depicted on Sheet 1-36 in the accompanying 1”= 50’ “Existing Wetlands Plans” dated November 2023 prepared by Horizons Engineering, Inc.

See Section 9.0 for the overall Wetland Cover Type map which depicts the general wetland classes mapped within the project area. These areas include: Palustrine Forested (PFO), Palustrine Scrub-Shrub (PSS), Palustrine Emergent/Scrub-Shrub (PEM/SS), and Palustrine

Emergent (PEM). Other features noted include riverine perennial (R3UBH) and intermittent (R4UBJ) habitats and the location of vernal pools (Section 10.3) within respective wetland areas. Detailed location and classifications are depicted on the Existing Wetland Plans.

The dominant wetland class is Palustrine Broad-leaved Deciduous Forested (PFO1). The principal species are red maple (*Acer rubrum*) and yellow birch (*Betula alleghaniensis*). As depicted, the majority of the forested wetlands are interconnected and serve as headwater wetlands to Alder Brook and its tributaries. The larger poorly to very poorly drained wetlands are positioned west of Douglas Drive. East of Douglas Drive the wetland areas are not as extensive due to the steeper topography. These wetlands are often associated with topographic drainageways or are isolated wetlands confined to poorly drained glacial till topographic depressions.

Palustrine Needle-leaved Forested (PFO4) wetlands are generally found in the low lying portions of the wetlands west of Douglas Drive while the PFO1 wetlands comprise the dominant wetland class east of Douglas Drive. The PFO4 areas often intermixed with the deciduous forested wetlands or are associated with the wetter components within the Lowland Spruce natural community. Red spruce (*Picea rubens*), Balsam fir (*Abies balsamea*), Larch (*Larix laricina*), and Black spruce (*Picea mariana*) comprise the principal species. The red spruce and fir are generally found in the wetland areas underlain by poorly drained soils. The wetter portions of this wetland class typically support a higher component of Larch and Black Spruce. No stands of Northern white cedar (*Thuja occidentalis*) natural community were documented. However, individual specimens may be sporadically found within this forested wetland type.

Palustrine Scrub-Shrub (PSS) and Palustrine Emergent (PEM) comprise the other principal wetland cover types. Often these wetland classes are intermixed or can be found where the given wetland class is dominant. Principal species include: cattail (*Typha latifolia*), wool-grass (*Scirpus cyperinus*), various sedges (*Carex spp.*), willows (*Salix spp.*), speckled alder (*Alnus rugosa*), and various hardwood sapling wetland species.

The larger more contiguous wetland complex areas consisting of these cover types are located west of Douglas Drive, often found in association with the intermittent (R4UBJ) and perennial (R3UBH) riverine habitats. Former and active beaver colonies serve to influence water levels and correspondingly the wetland cover types. Portions of the perennial reaches of these streams support fish habitat. See the separate Section 401 application.

East of Douglas Drive, Palustrine Scrub-Shrub areas are positioned within slightly sloping shelf areas and along topographic drainageways.

Seven (7) vernal pools (VP-1 through VP-7) were documented and are depicted on the Overall Wetland Cover Type Map and Existing Wetland Plan sheets 10, 11, 21 and 22. See Vernal Pool Assessment (Section 10.3).

Other areas where emergent and scrub-shrub vegetation occur include man-made and/or altered wetlands associated with roadside ditches and excavated drainage features along the existing road network. These areas were classified as Palustrine Persistent Emergent/Broad-leaved Deciduous Scrub-Shrub (PEM/SS1Exd) wetlands that are seasonally saturated/flooded, excavated and ditched. In some areas, the drainage ditches have been periodically excavated allowing emergent vegetation to become dominant. Other areas that have not been regularly maintained typically have a greater scrub-shrub component.

## **8.2 WETLAND IMPACTS**

The total project wetland impact is approximately 11.5 acres. The project will permanently impact approximately 10.2 acres for landfill and associated infrastructure improvements, serve to retain approximately 0.85 acres of After-the-Fact (ATF) fills and temporarily impact approximately 0.5 acres of wetland within the Alder Brook catchment. Approximately 956 linear feet of intermittent stream (R4UBJ) and 910 linear feet of perennial (R3UBH) stream will be permanently impacted. Five (5) vernal pools (VP-3 through VP-7) will be directly impacted. Vernal pools VP-1 and VP-2 are located west of Douglas Drive and will not be impacted.

Wetland impacts are depicted on the accompanying “Wetland Impact Plans” prepared by Horizons Engineering, Inc. dated November 2023 and “Project Design Plans” prepared by CMA Engineers, Inc. dated November 2023.

Specific wetland impacts sorted by plan sheet number, impact classification, impact type (eg. Temporary, permanent, linear feet, and after-the-fact) are listed in Section 8.2.

Based on wetland category, class, and loss of functions and values for the cumulative wetland impacts, compensatory mitigation is proposed in accordance with State and Federal mitigation guidance. See Section 12.0 Compensatory Mitigation.

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Figure 8.1

# Overview of Mapped Wetland Extent

Wetland Permit Application

Granite State Landfill, LLC

Dalton, New Hampshire

Drawn By:	D. Heacock / E. Wright
Designed By:	L. Corenthal / A. Matthews
Reviewed By:	T. White
Project No:	1003.24
Date:	November 2023

## Figure Narrative

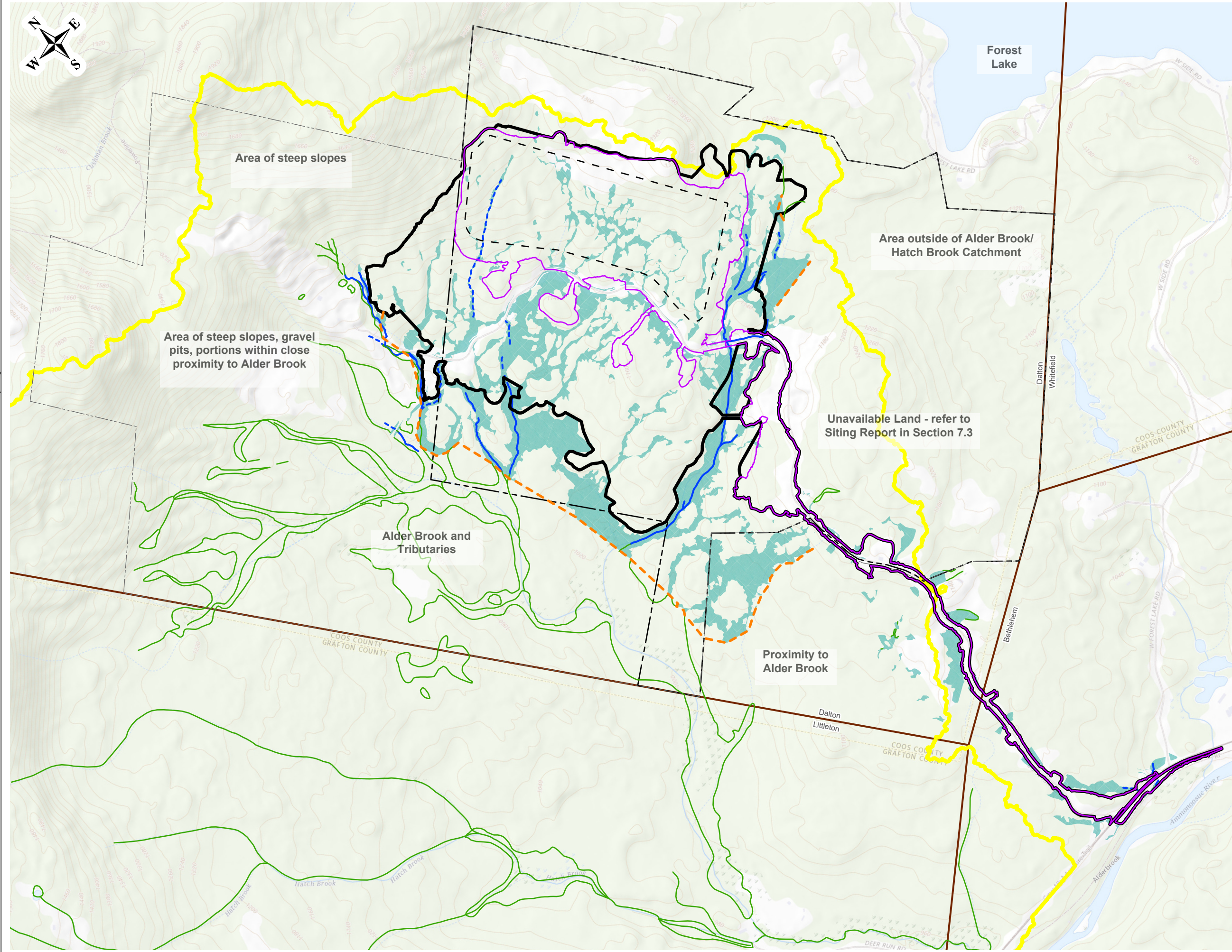
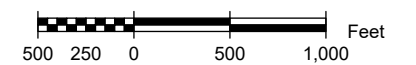
This figure depicts the extent of wetlands delineated by B.H. Keith Associates of Freedom, New Hampshire in relation to property lines, proposed landfill extents, and landfill alternatives.

## Notes

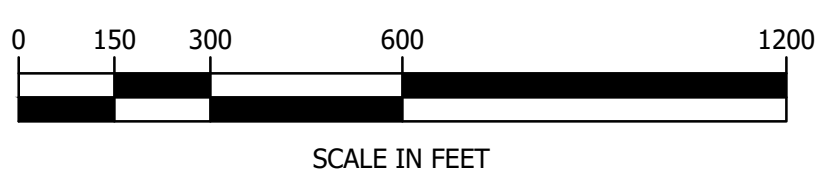
1. Wetlands and streams were provided by Horizons Engineering of Littleton, NH on November 8, 2023. Refer to Section 8 and the Existing Conditions Wetland Plan set for additional information.
2. The proposed landfill limits and alternatives were provided by CMA Engineers on October 23 and 25, 2023. Refer to Section 7 and the Solid Waste Permitting Plan set for additional information.

## Legend

- Limit of Disturbance Concept 5.3
- Maximum Extent of Combined Limits of Disturbance (Concepts 1 to 4 and Concepts 5.1 to 5.3)
- Anchor trench Concept 5.3
- Property line
- Subject Property Line
- Alder Brook / Hatch Brook Catchment
- Town line
- Intermittent Stream
- Perennial Stream
- Field delineated wetland
- Wetland (Routine On-site Determination Method)
- Wetland field delineation limit







**LEGEND**

-  WETLANDS
-  WATERSHED BOUNDARY

DATE OF PRINT  
DECEMBER 03 2023  
HORIZONS ENGINEERING

EXHIBIT

GRANITE STATE LANDFILL, LLC  
DALTON, NEW HAMPSHIRE  
EXISTING WETLANDS (NOVEMBER 2023)

OVERALL EXISTING WETLANDS  
WITH AERIAL UNDERLAY

**horizons**  
Engineering

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PROJECT #:	19045
DATE:	NOVEMBER 2023
SURVEYED BY:	HEI
ENGINEERED BY:	BHK
DRAWN BY:	SJB/BDD/KRP
CHECKED BY:	ESP/BHK

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Engineering  
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Summary of Wetland Impacts by Cover Type and Town  
Granite State Landfill, LLC  
Dalton, New Hampshire

Impact - Number	Impact Classification	Impact Classification Type	Town	Stream		Wetland		
				Intermittent (R4UBJ) (Linear Feet)	Perennial (R3UBH) (Linear Feet)	Permanent (Square Feet)	Temporary (Square Feet)	Permanent After-the-Fact (Square Feet)
1 -1	PFO1E	FO	Dalton	-	-	-	-	1,120
2 -1	PEM1E	EM	Dalton	-	-	-	-	1,448
2 -2	PEM1E	EM	Dalton	-	-	-	-	2,309
2 -3	PFO1E	FO	Dalton	-	-	-	-	2,380
2 -4	P SS/FO 1E	SS	Dalton	-	-	-	-	2,775
8 -1	PSS1Ex	SS	Dalton	-	-	111	-	-
8 -2	PFO1E	FO	Dalton	-	-	44	-	-
8 -3	PFO1E	FO	Dalton	-	-	-	122	-
8 -4	PSS1Edx	SS	Dalton	-	-	-	416	-
8 -5	PSS1Edx	SS	Dalton	-	-	1,649	-	-
8 -6	PFO1E	FO	Dalton	-	-	124	-	-
8 -7	PFO1E	FO	Dalton	-	-	-	516	-
8 -8	P SS/FO 1E	SS	Dalton	-	-	-	48	-
8 -9	PSS1Ex	SS	Dalton	-	-	-	65	-
8 -10	PSS1Edx	SS	Dalton	-	-	-	186	-
9 -1	P SS/FO 1E	SS	Dalton	-	-	-	24	-
9 -2	P SS/FO 1E	SS	Dalton	-	-	1,627	-	-
13 -1	PFO1E/R4UBJ	FO	Dalton	932	-	29,584	-	-
13 -3	PFO1E	FO	Dalton	-	-	7,686	-	-
13 -4	PFO1E	FO	Dalton	-	-	-	-	331
19 -1	PFO1E	FO	Dalton	-	-	1,126	-	-
19 -2	PFO1E	FO	Dalton	-	-	622	-	-
19 -2A	PFO1E	FO	Dalton	-	-	-	50	-
19 -3	PFO1E	FO	Dalton	-	-	92	-	-
19 -4	PFO1E	FO	Dalton	-	-	140	-	-
19 -5	PFO1E	FO	Dalton	-	-	2,441	-	-
19 -6	PFO1E	FO	Dalton	-	-	2,111	-	-
19 -7	PFO1E	FO	Dalton	-	-	116	-	-
20 -2	PFO1E	FO	Dalton	-	-	1,771	-	-
20 -3	PFO1E	FO	Dalton	-	-	359	-	-
20 -4	PFO1E	FO	Dalton	-	-	3,539	-	-
20 -5	PSS1E	SS	Dalton	-	-	3,443	-	-
20 -6	PSS1E	SS	Dalton	-	-	2,742	-	-
20 -7	PFO1E/4E	FO	Dalton	-	-	24,695	-	-
20 -8	PFO1E	FO	Dalton	-	-	1,717	-	-
20 -9	PFO1E	FO	Dalton	-	-	3,320	-	-
20 -10	PFO1E	FO	Dalton	-	-	798	-	-
20 -11	PFO1E	FO	Dalton	-	-	2,189	-	-
21 -1	PSS1Edx	SS	Dalton	-	-	-	94	-
21 -1A	PSS1Edx	SS	Dalton	-	-	1,451	-	-
21 -2	PFO1E	FO	Dalton	-	-	6,078	-	-
21 -3	PSS1E	SS	Dalton	-	-	995	-	-
21 -4	PFO1E	FO	Dalton	-	-	13,529	-	-
21 -5	PEM1Edx	EM	Dalton	-	-	204	-	-
21 -6	DITCH PEm1xd	EM	Dalton	-	-	1,048	-	-
21 -7	PFO1E	FO	Dalton	-	-	4,510	-	-
21 -8	P SS/FO 1E	SS	Dalton	-	-	8,697	-	-
21 -9	PFO1/4E	FO	Dalton	-	-	4,840	-	-
21 -10	P EM/SS /FO 1/4E	EM	Dalton	-	-	6,411	-	-
21 -11	P EM/SS 1E	EM	Dalton	-	-	7,634	-	-
21 -12	PFO1E	FO	Dalton	-	-	559	-	-
21 -13	PSS1E	SS	Dalton	-	-	1,459	-	-
21 -14	PSS1E	SS	Dalton	-	-	2,524	-	-
21 -15	PSS1E	SS	Dalton	-	-	3,768	-	-
21 -16	PFO1E	FO	Dalton	-	-	4,864	-	-
21 -17	PSS1E	SS	Dalton	-	-	1,312	-	-
21 -18	PFO1/4E	FO	Dalton	-	-	8,883	-	-
21 -19	PFO1E	FO	Dalton	-	-	25,853	-	-
21 -20	P EM/SS / FO 1/4E	EM	Dalton	-	-	12,489	-	-
21 -21	PFO1E	FO	Dalton	-	-	573	-	-
21 -22	PFO1E	FO	Dalton	-	-	7,730	-	-
21 -23	PFO1/4E	FO	Dalton	-	-	3,198	-	-
21 -24	PSS1E	SS	Dalton	-	-	17,153	-	-
21 -25	PFO1E	FO	Dalton	-	-	3,810	-	-
21 -26	PFO1E	FO	Dalton	-	-	1,832	-	-
21 -27	P EM/SS 1E	EM	Dalton	-	-	5,626	-	-
21 -28	PSS1E	SS	Dalton	-	-	22,767	-	-
21 -29	P SS/FO 1/4E	SS	Dalton	-	-	13,768	-	-
21 -30	PSS1Edx	SS	Dalton	-	-	793	-	-
21 -31	PSS1Edx	SS	Dalton	-	-	-	204	-
21 -32	P EM/FO 1	EM	Dalton	-	-	9,991	-	-
21 -33	PSS1E	SS	Dalton	-	-	834	-	-

**Summary of Wetland Impacts by Cover Type and Town**  
**Granite State Landfill, LLC**  
**Dalton, New Hampshire**

Impact - Number	Impact Classification	Impact Classification Type	Town	Stream		Wetland		
				Intermittent (R4UBJ) (Linear Feet)	Perennial (R3UBH) (Linear Feet)	Permanent (Square Feet)	Temporary (Square Feet)	Permanent After-the-Fact (Square Feet)
21 -34	PFO1E	FO	Dalton	-	-	146	-	-
22 -1A	P EM/FO 1	EM	Dalton	-	-	-	109	-
22 -1B	PSS1E dx	SS	Dalton	-	-	-	123	-
22 -2	PSS1E dx	SS	Dalton	-	-	836	-	-
22 -4	PFO1E	FO	Dalton	-	-	3,663	-	-
22 -5	P SS/FO 1E	SS	Dalton	-	-	2,990	-	-
22 -6	PFO1E	FO	Dalton	-	-	3,223	-	-
22 -7	PSS1E	SS	Dalton	-	-	13,297	-	-
22 -8	PFO1E	FO	Dalton	-	-	1,362	-	-
22 -9	PFO1E	FO	Dalton	-	-	187	-	-
22 -10	PFO1E	FO	Dalton	-	-	204	-	-
22 -11	P EM/SS E	EM	Dalton	-	-	837	-	-
22 -12	PFO1E	FO	Dalton	-	-	19,479	-	-
22 -13	PSS1E dx	SS	Dalton	-	-	642	-	-
22 -14	P SS/FO 1E	SS	Dalton	-	-	788	-	-
22 -15	P SS/FO 1E	SS	Dalton	-	-	-	620	-
22 -16	PSS1E dx	SS	Dalton	-	-	3,510	-	-
22 -17	PSS1E	SS	Dalton	-	-	1,705	-	-
22 -18	PFO1E	FO	Dalton	-	-	300	-	-
22 -19	PFO4/1E	FO	Dalton	-	-	1,362	-	-
22 -20	PFO1E	FO	Dalton	-	-	1,793	-	-
22 -21	PFO1/4E	FO	Dalton	-	-	1,859	-	-
22 -22	PSS1E	SS	Dalton	-	-	8,515	-	-
22 -23	P SS/FO 1E	SS	Dalton	-	-	3,318	-	-
22 -24	P SS/FO 1E	SS	Dalton	-	-	1,303	-	-
22 -25	PSS1E	SS	Dalton	-	-	28,061	-	-
22 -26	VP-5	VP	Dalton	-	-	1,056	-	-
22 -27	VP-4	VP	Dalton	-	-	338	-	-
22 -28	VP-3	VP	Dalton	-	-	900	-	-
23 -1	P SS/FO 1E	SS	Dalton	-	-	-	423	-
23 -2	P SS/FO 1E	SS	Dalton	-	-	286	-	-
23 -3	PSS1E dx	SS	Dalton	-	-	806	-	-
23 -4	PSS1E dx	SS	Dalton	-	-	108	-	-
23 -5	PSS1E dx	SS	Dalton	-	-	-	438	-
23 -6	PFO1E	FO	Dalton	-	-	-	1099	-
23 -6A	R3UBH, PFO1E	FO	Dalton	-	34	89	-	-
23 -7	P EM/SS 1Exd/R3UBH	EM	Dalton	-	390	4,956	-	-
23 -7A	R3UBH, PFO1E	FO	Dalton	-	116	56	-	-
23 -8	P SS/FO1E	SS	Dalton	-	-	-	528	-
23 -9	P SS/FO 1/4E	SS	Dalton	-	-	-	661	-
23 -10	P SS/FO 1/4E	SS	Dalton	-	-	89	-	-
23 -11	R3UBH, PFO1E	FO	Dalton	-	171	37	-	-
23 -12	PFO1E	FO	Dalton	-	-	806	-	-
23 -13	PFO1E	FO	Dalton	-	-	-	778	-
27 -1	PFO1E	FO	Dalton	-	-	13,908	-	-
27 -2	PFO1E	FO	Dalton	-	-	9,672	-	-
27 -3	P EM/SS 1E	EM	Dalton	-	-	2,129	-	-
27 -4	PFO1E	FO	Dalton	-	-	368	-	-
31 -1	PSS1E	SS	Dalton	-	-	-	165	-
31 -2	P EM/SS 1Exd	EM	Dalton	-	-	1,374	-	-
31 -3	PFO1E	FO	Dalton	-	-	-	177	-
31 -4	PFO1E	FO	Dalton	-	-	13	-	-
31 -5	PSS1Exd	SS	Dalton	-	-	328	-	-
31 -6	PSS1E	SS	Dalton	-	-	299	-	-
31 -7	PSS1E	SS	Dalton	-	-	-	66	-
31 -8	P SS/FO 4/1E	SS	Dalton	-	-	67	-	-
32 -1	P SS/FO 4/1E	SS	Dalton	-	-	728	-	-
32 -2	P SS/FO 4/1E	SS	Dalton	-	-	-	863	-
32 -3	P SS/FO 4/1E	SS	Dalton	-	-	207	-	-
32 -4	P SS/FO 4/1E	SS	Dalton	-	-	904	-	-
32 -5	P SS/FO 4/1E	SS	Dalton	-	-	-	1,848	-
32 -6	P SS/FO 4/1E	SS	Dalton	-	-	62	-	-
32 -7	P SS/FO 4/1E	SS	Dalton	-	-	-	470	-
32 -8	P SS/FO 4/1E	SS	Dalton	-	-	-	404	-
33 -2	PFO1/4E	FO	Dalton	-	-	178	-	-
33 -3	PFO1/4E	FO	Dalton	-	-	-	835	-
33 -4	P EM/SS 1E	EM	Dalton	-	-	411	-	-
33 -5	P EM/SS 1E	EM	Dalton	-	-	-	1,130	-
33 -6	PFO1/4E	FO	Bethlehem	-	-	-	186	-
33 -7	PFO1/4E	FO	Bethlehem	-	-	11	-	-
33 -8	P SS/FO 1E	SS	Bethlehem	-	-	-	1,825	-
33 -9	P SS/FO 1E	SS	Bethlehem	-	-	1,343	-	-

Summary of Wetland Impacts by Cover Type and Town  
Granite State Landfill, LLC  
Dalton, New Hampshire

Impact - Number	Impact Classification	Impact Classification Type	Town	Stream		Wetland		
				Intermittent (R4UBJ) (Linear Feet)	Perennial (R3UBH) (Linear Feet)	Permanent (Square Feet)	Temporary (Square Feet)	Permanent After-the-Fact (Square Feet)
33 -10	PSS1E	SS	Bethlehem	-	-	-	663	-
33 -11	PSS1E	SS	Bethlehem	-	-	268	-	-
33 -12	P SS/FO 1E	SS	Dalton	-	-	-	-	4,150
33 -13	PSS1E	SS	Bethlehem	-	-	-	-	2,270
34 -1	PSS1E	SS	Bethlehem	-	-	249	-	-
34 -1A	PSS1E	SS	Bethlehem	-	-	-	357	-
34 -2	PSS1E	SS	Bethlehem	-	-	75	-	-
34 -3	PSS1E	SS	Bethlehem	-	-	-	1,584	-
34 -4	PSS1E	SS	Bethlehem	-	-	212	-	-
34 -5	PSS1E	SS	Bethlehem	-	-	-	937	-
34 -6	P SS/FO 4E	SS	Bethlehem	-	-	-	1,496	-
34 -7	P SS/FO 4E	SS	Bethlehem	-	-	1,070	-	-
34 -8	PFO4E	FO	Bethlehem	-	-	-	1,683	-
34 -9	PFO4E	FO	Bethlehem	-	-	740	-	-
34 -10	PSS1E	SS	Bethlehem	-	-	-	-	12,857
34 -11	PFO4E	FO	Bethlehem	-	-	-	-	6,489
35 -1	PEM1Exd	EM	Bethlehem	-	-	78	-	-
35 -2	R4UBJ, PFO1E	FO	Bethlehem	24	-	121	-	-
35 -4	PFO4Ed	FO	Bethlehem	-	-	-	111	-
35 -5	PFO4Ed	FO	Bethlehem	-	-	109	-	-
35 -6	PSS1Ex	SS	Bethlehem	-	-	50	-	-
35 -8	P SS/FO 1E	SS	Bethlehem	-	-	2,367	-	-
35 -9	R3UBH, P SS/FO 4E	SS	Bethlehem	-	198	-	-	-
35 -3	PSS1E	SS	Bethlehem	-	-	-	-	767
36 -1	P EM/FO 1E	EM	Bethlehem	-	-	290	-	-

Totals By Type / Town						
Type	Town	Intermittent (R4UBJ) (Linear Feet)	Perennial (R3UBH) (Linear Feet)	Permanent (sq. ft)	Temporary (sq. ft.)	Permanent ATF (sq ft)
FO	Dalton	-	-	227,438	3,577	3,831
FO	Bethlehem	-	-	981	1,980	6,489
<b>FO</b>	<b>Total</b>	-	-	<b>228,419</b>	<b>5,557</b>	<b>10,320</b>
SS	Dalton	-	-	153,942	7,646	6,925
SS	Bethlehem	-	-	5,634	6,862	15,894
<b>SS</b>	<b>Total</b>	-	-	<b>159,576</b>	<b>14,508</b>	<b>22,819</b>
EM	Dalton	-	-	53,110	1,239	3,757
EM	Bethlehem	-	-	368	0	0
<b>EM</b>	<b>Total</b>	-	-	<b>53,478</b>	<b>1,239</b>	<b>3,757</b>
VP	Dalton	-	-	2,294	0	0
VP	Bethlehem	-	-	0	0	0
<b>VP</b>	<b>Total</b>	-	-	<b>2,294</b>	<b>0</b>	<b>0</b>
<b>Total - Dalton</b>		<b>932</b>	<b>711</b>	<b>436,784</b>	<b>12,462</b>	<b>14,513</b>
<b>Total - Bethlehem</b>		<b>24</b>	<b>198</b>	<b>6,983</b>	<b>8,842</b>	<b>22,383</b>
<b>Total - By Type</b>		<b>956</b>	<b>909</b>	<b>443,767</b>	<b>21,304</b>	<b>36,896</b>
<b>Total</b>		<b>1,865</b>		<b>501,967</b>		

Notes:

1. Impact numbers refer to the sheets and impacts in the Wetland Impact Plans; refer to Wetland Impact Plans for additional information and notes.

2. Abbreviations:

- FO = Forested
- SS = Scrub-Shrub
- EM = Emergent
- VP = Vernal Pool

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Granite State Landfill, LLC City/County: Coos Sampling Date: 6/22  
 Applicant/Owner: JW Chipping, Inc. State: NH Sampling Point: 33-53  
 Investigator(s): BHK Section, Township, Range: Dalton  
 Landform (hillside, terrace, etc.): upper headwater Local relief (concave, convex, none): slightly sloping Slope (%): 0-8  
 Subregion (LRR or MLRA): LRR K, MLRA 90A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: 647 Pillsbury NWI classification: PSS/FO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>x</u> No _____ Hydric Soil Present? Yes <u>x</u> No _____ Wetland Hydrology Present? Yes <u>x</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____ If yes, optional Wetland Site ID: <u>Sht 33-53</u>
Remarks: (Explain alternative procedures here or in a separate report.) After the fact road fill. Plot center is 30' east of toe of road fill.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1)                      _____ Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2)                      _____ Aquatic Fauna (B13) _____ Saturation (A3)                      _____ Marl Deposits (B15) _____ Water Marks (B1)                      _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2)                      _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3)                      _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4)                      _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5)                      _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7)                      _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <u>x</u> No <u>x</u> Depth (inches): <u>0-2"</u> Water Table Present? Yes <u>x</u> No _____ Depth (inches): <u>surface</u> Saturation Present? Yes <u>x</u> No _____ Depth (inches): <u>surface</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Fragipan layer perched wetland. Wetland was likely bisected by Douglas Drive. No cross culvert present.

**VEGETATION** – Use scientific names of plants.

Sampling Point: 33-53

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Nonea</u>			
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
_____ =Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15'</u> )			
1. <u>Betula populifolia</u>	<u>3</u>	<u>No</u>	<u>FACW</u>
2. <u>Pinus resinosa</u>	<u>1</u>	<u>No</u>	<u>FAC</u>
3. <u>Picea rubens</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
4. <u>Larix laricina</u>	<u>1</u>	<u>No</u>	<u>FACW</u>
5. <u>Alnus glutinosa</u>	<u>12</u>	<u>Yes</u>	<u>FACW</u>
6. _____			
7. _____			
_____ =Total Cover			
<u>19</u> =Total Cover			
Herb Stratum (Plot size: <u>5'</u> )			
1. <u>Carex crinita</u>	<u>40</u>	<u>Yes</u>	<u>OBL</u>
2. <u>sphagnum</u>	<u>40</u>	<u>Yes</u>	<u>OBL</u>
3. <u>Scirpus cyperinus</u>	<u>10</u>	<u>No</u>	<u>OBL</u>
4. _____			
5. _____			
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			
12. _____			
_____ =Total Cover			
<u>90</u> =Total Cover			
Woody Vine Stratum (Plot size: <u>5'</u> )			
1. <u>N/A</u>	<u>0</u>		
2. _____			
3. _____			
4. _____			
_____ =Total Cover			

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A)

Total Number of Dominant Species Across All Strata: \_\_\_\_\_ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B) _____
Prevalence Index = B/A = _____	

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**Hydrophytic Vegetation Indicators:**

   x 1 - Rapid Test for Hydrophytic Vegetation

   2 - Dominance Test is >50%

   3 - Prevalence Index is ≤3.0<sup>1</sup>

   4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

   Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

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**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

---

**Hydrophytic Vegetation Present?**      Yes   X        No   x  

Remarks: (Include photo numbers here or on a separate sheet.)  
Road fill to depths of 4"+/-.

**SOIL**

Sampling Point: 33-53

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-22	10YR 2/2							fine muck and peat
22"+	10yr 2/1							med/ fine sandy muck

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- High Chroma Sands (S11) (LRR K, L)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR K, L)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: till  
 Depth (inches): 22"+

**Hydric Soil Present?**      Yes       No

Remarks:

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Granite State Landfill, LLC City/County: Coos Sampling Date: 6/22  
 Applicant/Owner: JW Chipping, Inc. State: NH Sampling Point: 33-54  
 Investigator(s): BHK Section, Township, Range: Dalton  
 Landform (hillside, terrace, etc.): upper headwater Local relief (concave, convex, none): slightly sloping Slope (%): 0-8  
 Subregion (LRR or MLRA): LRR K, MLRA 90A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: 647 Pillsbury NWI classification: PSS/FO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>x</u> No _____ Hydric Soil Present? Yes <u>x</u> No _____ Wetland Hydrology Present? Yes <u>x</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____ If yes, optional Wetland Site ID: <u>Plot center @ Flag 54-9</u>
Remarks: (Explain alternative procedures here or in a separate report.) After the fact road fill. Plot center is in wetland. Plot radius 75% upland and 25% wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1)                      _____ Water-Stained Leaves (B9) <u>x</u> High Water Table (A2)                              _____ Aquatic Fauna (B13) _____ Saturation (A3)                                  _____ Marl Deposits (B15) _____ Water Marks (B1)                                _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2)                      _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3)                                _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4)                            _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5)                                _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7)    _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>x</u> Depth (inches): _____ Water Table Present? Yes <u>x</u> No _____ Depth (inches): <u>0-12"</u> Saturation Present? Yes <u>x</u> No _____ Depth (inches): <u>0-12"</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**VEGETATION – Use scientific names of plants.**

Sampling Point: 33-54

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Abies balsamea</u>	<u>76</u>	Yes	FAC	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)  Total Number of Dominant Species Across All Strata: _____ (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)																
2. <u>Larix laricina</u>	<u>8</u>	No	FACW																	
3. <u>Picea rubens</u>	<u>8</u>	No	FACU																	
4. <u>Pinus strobus</u>	<u>8</u>	No	FACU																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>100</u> =Total Cover			<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:50%;">Total % Cover of:</th> <th style="width:50%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>25</u></td> <td>x 1 = <u>25</u></td> </tr> <tr> <td>FACW species <u>77</u></td> <td>x 2 = <u>154</u></td> </tr> <tr> <td>FAC species <u>143</u></td> <td>x 3 = <u>429</u></td> </tr> <tr> <td>FACU species <u>29</u></td> <td>x 4 = <u>116</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>274</u></td> <td>(A) <u>724</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>2.64</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>25</u>	x 1 = <u>25</u>	FACW species <u>77</u>	x 2 = <u>154</u>	FAC species <u>143</u>	x 3 = <u>429</u>	FACU species <u>29</u>	x 4 = <u>116</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>274</u>	(A) <u>724</u> (B)	Prevalence Index = B/A = <u>2.64</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>25</u>	x 1 = <u>25</u>																			
FACW species <u>77</u>	x 2 = <u>154</u>																			
FAC species <u>143</u>	x 3 = <u>429</u>																			
FACU species <u>29</u>	x 4 = <u>116</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>274</u>	(A) <u>724</u> (B)																			
Prevalence Index = B/A = <u>2.64</u>																				
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u>)</b>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
1. <u>Acer rubrum</u>	<u>23</u>	Yes	FACW																	
2. <u>Abies balsamea</u>	<u>17</u>	No	FAC																	
3. <u>Betula alleghaniensis</u>	<u>3</u>	No	FACU																	
4. <u>Alnus glutinosa</u>	<u>46</u>	Yes	FACW																	
5. <u>Prunus pensylvanica</u>	<u>10</u>	No	FACU																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>99</u> =Total Cover			<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
<b>Herb Stratum (Plot size: <u>5'</u>)</b>				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
1. <u>Cornus canadensis</u>	<u>50</u>	Yes	FAC																	
2. <u>Coptis trifolia</u>	<u>25</u>	Yes	OBL																	
3. <u>Osmunda cinnanome</u>	<u>25</u>	Yes	8																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
	<u>100</u> =Total Cover			<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>x</u>																
<b>Woody Vine Stratum (Plot size: <u>5</u>)</b>																				
1. <u>N/A</u>	<u>0</u>	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
	_____ =Total Cover																			

Remarks: (Include photo numbers here or on a separate sheet.)  
 Road fill to depths of 4"+/-.

SOIL

Sampling Point: 33-54

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3"	10YR 2/2						Mucky Sand	organic mat
3-8"	10YR 4/1							

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- High Chroma Sands (S11) (LRR K, L)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR K, L)

Indicators for Problematic Hydric Soils<sup>3</sup>:

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Bouldery Glacial Till-Refusal

Depth (inches): 8"+

Hydric Soil Present? Yes x No   

Remarks:

Small depression adjacent to upland. Upland soil 10YR 4/6 Dark yellowish brown fine sandy loam.

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Granite State Landfill, LLC City/County: Coos Sampling Date: 6/22  
 Applicant/Owner: JW Chipping, Inc. State: NH Sampling Point: 33-56  
 Investigator(s): BHK Section, Township, Range: Dalton  
 Landform (hillside, terrace, etc.): upper headwater Local relief (concave, convex, none): slightly sloping Slope (%): 0-3  
 Subregion (LRR or MLRA): LRR K, MLRA 90A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: 647 Pillsbury NWI classification: PSS1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>x</u> No _____ Hydric Soil Present? Yes <u>x</u> No _____ Wetland Hydrology Present? Yes <u>x</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.)   	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) <u>x</u> High Water Table (A2) _____ Aquatic Fauna (B13) <u>x</u> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>x</u> Depth (inches): _____ Water Table Present? Yes <u>x</u> No _____ Depth (inches): <u>2"</u> Saturation Present? Yes <u>x</u> No _____ Depth (inches): <u>2"</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Plot center is 30'+/- from edge of ATF road fill. Fill appears to be 3-4' in depth. Re-processed asphalt and aggregate road bed. No culvert observed.

**VEGETATION** – Use scientific names of plants.

Sampling Point: 33-56

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Pinus resinosa</u>	100	Yes	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)  Total Number of Dominant Species Across All Strata: _____ (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	100 =Total Cover			<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u>)</b>				
1. <u>Populus tremula</u>	5	No	FACU	
2. <u>Ilex verticillata</u>	13	No	FAC	
3. <u>Spiraea tomentosa</u>	82	Yes	FACU	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	100 =Total Cover			<b>Hydrophytic Vegetation Indicators:</b> x 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
<b>Herb Stratum (Plot size: <u>5'</u>)</b>				
1. <u>Sparganium</u>	50	Yes	OBL	
2. <u>Scirpus cyperinus</u>	30	Yes	OBL	
3. <u>Carex lurida</u>	20	Yes		
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
	100 =Total Cover			
<b>Woody Vine Stratum (Plot size: <u>5'</u>)</b>				
1. <u>N/A</u>	0			
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
	_____ =Total Cover			
<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.				
				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No <u>x</u>

Remarks: (Include photo numbers here or on a separate sheet.)  
 Road fill to depths of 4"+/-.

**SOIL**

Sampling Point: 33-56

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4"	10YR 2/1						Mucky Sand	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- High Chroma Sands (S11) (LRR K, L)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR K, L)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Stoney glacial till with fragipan  
 Depth (inches): 4"

**Hydric Soil Present?** Yes  No

Remarks:  
 Hummocky with scalltered surface boulders. Wetland likely partially ponded in depression areas periodically.

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Granite State Landfill, LLC City/County: Coos Sampling Date: 6/22  
 Applicant/Owner: JW Chipping, Inc. State: NH Sampling Point: 34-59  
 Investigator(s): BHK Section, Township, Range: Dalton  
 Landform (hillside, terrace, etc.): upper headwater Local relief (concave, convex, none): slightly sloping Slope (%): 0-3  
 Subregion (LRR or MLRA): LRR K, MLRA 90A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: 647 Pillsbury NWI classification: PSS1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>x</u> No _____ Hydric Soil Present? Yes <u>x</u> No _____ Wetland Hydrology Present? Yes <u>x</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Plot center +/- 30' from utility pole.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2)                      _____ Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3)                                  _____ Marl Deposits (B15) _____ Water Marks (B1)                      _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2)                      _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3)                                  _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4)                                  _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5)                                  _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7)                      _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <u>x</u> No _____ Depth (inches): <u>1"</u> Water Table Present? Yes <u>x</u> No _____ Depth (inches): <u>6"</u> Saturation Present? Yes <u>x</u> No _____ Depth (inches): <u>surface</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Hummocky glacial till with scattered boulders. No culvert observed. After the fact road fill +/- 4' in depth.

**VEGETATION** – Use scientific names of plants.

Sampling Point: 34-59

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Abies balsamea</u>	<u>100</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A)

Total Number of Dominant Species Across All Strata: \_\_\_\_\_ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A/B)

Sapling/Shrub Stratum (Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Larix laricina</u>	<u>8</u>	<u>No</u>	<u>FACU</u>
2. <u>Betula populifolia</u>	<u>46</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Abies balsamea</u>	<u>3</u>	<u>No</u>	<u>FACU</u>
4. <u>Viburnum lentago</u>	<u>19</u>	<u>No</u>	<u>FAC</u>
5. <u>Ilex verticillata</u>	<u>24</u>	<u>Yes</u>	<u>FACW</u>
6. <u>l</u>	_____	_____	_____
7. _____	_____	_____	_____

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>10</u>	x 1 = <u>10</u>
FACW species <u>43</u>	x 2 = <u>86</u>
FAC species <u>180</u>	x 3 = <u>540</u>
FACU species <u>11</u>	x 4 = <u>44</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>244</u>	(A) <u>680</u> (B)
Prevalence Index = B/A = <u>2.79</u>	

Herb Stratum (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Spagnum</u>	<u>10</u>	<u>No</u>	<u>OBL</u>
2. <u>Carex crinita</u>	<u>19</u>	<u>No</u>	<u>FACW</u>
3. <u>Cornus canadensis</u>	<u>56</u>	<u>Yes</u>	<u>FAC-</u>
4. <u>Spiraea latifolia</u>	<u>15</u>	<u>No</u>	<u>FAC</u>
5. _____	_____	_____	<u>FAC</u>
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Woody Vine Stratum (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>N/A</u>	<u>0</u>	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**      Yes       No \_\_\_\_\_

Remarks: (Include photo numbers here or on a separate sheet.)  
 Plot adjacent to road fill edge.

**SOIL**

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12"	10YR 2/1						Muck	Refusal

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.     <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- High Chroma Sands (S11) (LRR K, L)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR K, L)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Bouldery glacial till (refusal)  
 Depth (inches): 12" +/- to refusal

**Hydric Soil Present?**     Yes x     No       

Remarks:

Saturated to surface.



**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Granite State Landfill, LLC City/County: Coos Sampling Date: 9/22  
 Applicant/Owner: JW Chipping, Inc. State: NH Sampling Point: 34-60  
 Investigator(s): BHK Section, Township, Range: Dalton  
 Landform (hillside, terrace, etc.): upper headwater Local relief (concave, convex, none): slightly sloping Slope (%): 0-3  
 Subregion (LRR or MLRA): LRR K, MLRA 90A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: 647 Pillsbury NWI classification: PSS1/FO4

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>x</u> No _____ Hydric Soil Present? Yes <u>x</u> No _____ Wetland Hydrology Present? Yes <u>x</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Plot center at wetland-upland edge west of after-the-fact road fill. Approximately 50% wetland and 50% forested upland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2)                      _____ Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3)                                  _____ Marl Deposits (B15) _____ Water Marks (B1)                      _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2)                      _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3)                                  _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4)                                  _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5)                                  _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7)                      _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <u>x</u> No _____ Depth (inches): <u>3"</u> Water Table Present? Yes <u>x</u> No _____ Depth (inches): <u>3"</u> Saturation Present? Yes <u>x</u> No _____ Depth (inches): <u>surface</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION – Use scientific names of plants.**

Sampling Point: 34-60

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Abies balsamea</u>	<u>42</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Larix laricina</u>	<u>21</u>	<u>Yes</u>	<u>FACW</u>
3. <u>Acer rubrum</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>
4. <u>Betula populifolia</u>	<u>8</u>	<u>No</u>	<u>FAC</u>
5. <u>Betula papyrifera</u>	<u>4</u>	<u>No</u>	<u>FACU</u>
6. _____	_____	_____	_____
7. _____	_____	_____	_____
<u>100</u> =Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>15</u>	<u>No</u>	_____
2. <u>Betula populifolia</u>	<u>8</u>	<u>No</u>	<u>FAC</u>
3. <u>Abies balsamea</u>	<u>77</u>	<u>Yes</u>	<u>FACU</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. <u>l</u>	_____	_____	_____
7. _____	_____	_____	_____
<u>100</u> =Total Cover			
Herb Stratum (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Spagnum</u>	<u>50</u>	<u>Yes</u>	<u>OBL</u>
2. <u>No groundcover - upland</u>	<u>50</u>	<u>Yes</u>	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
<u>100</u> =Total Cover			
Woody Vine Stratum (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>N/A</u>	<u>0</u>	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
<u>_____</u> =Total Cover			

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A)

Total Number of Dominant Species Across All Strata: \_\_\_\_\_ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>50</u>	x 1 = <u>50</u>
FACW species <u>21</u>	x 2 = <u>42</u>
FAC species <u>83</u>	x 3 = <u>249</u>
FACU species <u>81</u>	x 4 = <u>324</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>235</u> (A)	<u>665</u> (B)
Prevalence Index = B/A = <u>2.83</u>	

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**      Yes   x        No       

Remarks: (Include photo numbers here or on a separate sheet.)  
One half of plot is upland and one-half wetland.

**SOIL**

Sampling Point: 34-60

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5"	10YR 2/1						Muck	
5-15"	5Y 5/1						Mucky Sand	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

<b>Hydric Soil Indicators:</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B)	<input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)	
<input checked="" type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)	
<input checked="" type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> High Chroma Sands (S11) (LRR K, L)	<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Marl (F10) (LRR K, L)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Stripped Matrix (S6)		<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Dark Surface (S7)			

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b>		<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type: <u>Bouldery glacial till (refusal)</u>	Depth (inches): <u>Bouldery glacial till</u>	

Remarks:  
15" to refusal.

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Granite State Landfill, LLC City/County: Coos Sampling Date: 9/22  
 Applicant/Owner: JW Chipping, Inc. State: NH Sampling Point: 34-61  
 Investigator(s): BHK Section, Township, Range: Dalton  
 Landform (hillside, terrace, etc.): upper headwater Local relief (concave, convex, none): slightly sloping Slope (%): 0-3  
 Subregion (LRR or MLRA): LRR K, MLRA 90A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: 647 Pillsbury NWI classification: PFO4

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>x</u> No _____ Hydric Soil Present? Yes <u>x</u> No _____ Wetland Hydrology Present? Yes <u>x</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Plot center +/- 30' from edge of after-the-fact road fill edge.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) <u>x</u> Water-Stained Leaves (B9) <u>x</u> High Water Table (A2) _____ Aquatic Fauna (B13) <u>x</u> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>x</u> Depth (inches): _____ Water Table Present? Yes <u>x</u> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <u>x</u> No _____ Depth (inches): <u>surface</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: 34-61

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Abies balsamea</u>	<u>3</u>	<u>No</u>	<u>FAC</u>
2. <u>Larix laricina</u>	<u>97</u>	<u>Yes</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>100</u> =Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Larix laricina</u>	<u>28</u>	<u>Yes</u>	_____
2. <u>Betula populifolia (Dead)</u>	_____	_____	<u>FAC</u>
3. <u>Abies balsamea</u>	<u>72</u>	<u>Yes</u>	<u>FACU</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. <u>l</u>	_____	_____	_____
7. _____	_____	_____	_____
	<u>100</u> =Total Cover		
Herb Stratum (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Spagnum</u>	<u>100</u>	<u>Yes</u>	<u>OBL</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	<u>100</u> =Total Cover		
Woody Vine Stratum (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>N/A</u>	<u>0</u>	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	_____ =Total Cover		

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A)

Total Number of Dominant Species Across All Strata: \_\_\_\_\_ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>100</u>	x 1 = <u>100</u>
FACW species <u>97</u>	x 2 = <u>194</u>
FAC species <u>3</u>	x 3 = <u>9</u>
FACU species <u>72</u>	x 4 = <u>288</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>272</u> (A)	<u>591</u> (B)
Prevalence Index = B/A = <u>2.17</u>	

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

---

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

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**Hydrophytic Vegetation Present?**      Yes       No

Remarks: (Include photo numbers here or on a separate sheet.)  
Dense forested wetland.

**SOIL**

Sampling Point: 34-61

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 2/1						Muck	
3+								Boulders - Refusal

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (LRR R, **MLRA 149B**)
- Thin Dark Surface (S9) (LRR R, **MLRA 149B**)
- High Chroma Sands (S11) (LRR K, L)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR K, L)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, **MLRA 149B**)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Bouldery glacial till (refusal)  
 Depth (inches): Bouldery glacial till

**Hydric Soil Present?**      Yes x      No     

Remarks:  
 Dense sphagnum mat over excessively bouldery glacial till. ATF road fill approximately 5-6' in depth.

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Granite State Landfill, LLC City/County: Coos Sampling Date: 9/22  
 Applicant/Owner: JW Chipping, Inc. State: NH Sampling Point: 35-62  
 Investigator(s): BHK Section, Township, Range: Dalton  
 Landform (hillside, terrace, etc.): upper headwater Local relief (concave, convex, none): slightly sloping Slope (%): 0-3  
 Subregion (LRR or MLRA): LRR K, MLRA 90A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: 647 Pillsbury NWI classification: PSS1E

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>x</u> No _____ Hydric Soil Present? Yes <u>x</u> No _____ Wetland Hydrology Present? Yes <u>x</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Plot center 10' north of after-the-fact fill for sign access road. Approximately 50% of plot is upland/50% wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) <u>x</u> Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) <u>x</u> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>x</u> Depth (inches): _____ Water Table Present? Yes <u>x</u> No _____ Depth (inches): <u>6</u> Saturation Present? Yes <u>x</u> No _____ Depth (inches): <u>surface</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Wooded wetland/ upland area periodically bush hogged.

**VEGETATION** – Use scientific names of plants.

Sampling Point: 35-62

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>None</u>			
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
7. _____			
_____ =Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15'</u> )			
1. <u>Betula populifolia</u>	<u>68</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Acer rubrum</u>	<u>13</u>	<u>No</u>	<u>FAC</u>
3. <u>Rhus typhina</u>	<u>19</u>	<u>No</u>	
4. _____			
5. _____			
6. <u>l</u>			
7. _____			
_____ =Total Cover			
Herb Stratum (Plot size: <u>5'</u> )			
1. <u>Onoclea sensibilis</u>	<u>40</u>	<u>Yes</u>	<u>OBL</u>
2. <u>Betula populifolia</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Abies balsamea</u>	<u>15</u>	<u>No</u>	
4. <u>Carex lurida</u>	<u>20</u>	<u>Yes</u>	
5. <u>Other- no dominants</u>	<u>5</u>	<u>No</u>	
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
11. _____			
12. _____			
_____ =Total Cover			
Woody Vine Stratum (Plot size: <u>5'</u> )			
1. <u>N/A</u>	<u>0</u>		
2. _____			
3. _____			
4. _____			
_____ =Total Cover			

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A)

Total Number of Dominant Species Across All Strata: \_\_\_\_\_ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: \_\_\_\_\_ (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>40</u>	x 1 = <u>40</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>101</u>	x 3 = <u>303</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>141</u>	(A) <u>343</u> (B)
Prevalence Index = B/A = <u>2.43</u>	

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

---

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

---

**Hydrophytic Vegetation Present?**      Yes       No

Remarks: (Include photo numbers here or on a separate sheet.)  
 Plot center near large boulders.



**SOIL**

Sampling Point: 35-62

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 2/1						Sandy	
5-12	10YR 2/2							loamy sandy till

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- High Chroma Sands (S11) (LRR K, L)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR K, L)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Bouldery glacial till (refusal)  
 Depth (inches): 12"+

Hydric Soil Present? Yes x No   

Remarks:  
 Very large scattered boulders.

**WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region**

Project/Site: Granite State Landfill, LLC City/County: Coos Sampling Date: 6/22  
 Applicant/Owner: JW Chipping, Inc. State: NH Sampling Point: 33-53  
 Investigator(s): BHK Section, Township, Range: Dalton  
 Landform (hillside, terrace, etc.): upper headwater Local relief (concave, convex, none): slightly sloping Slope (%): 0-8  
 Subregion (LRR or MLRA): LRR K, MLRA 90A Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: 647 Pillsbury NWI classification: PFO4

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation N, Soil N, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes _____ No <u>x</u> Hydric Soil Present? Yes <u>x</u> No _____ Wetland Hydrology Present? Yes _____ No <u>x</u>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <u>X</u> If yes, optional Wetland Site ID: <u>Sht 33-52</u>
Remarks: (Explain alternative procedures here or in a separate report.) After the fact road fill. Plot center is 15' west of road edge.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1)      _____ Water-Stained Leaves (B9) _____ High Water Table (A2)      _____ Aquatic Fauna (B13) _____ Saturation (A3)      _____ Marl Deposits (B15) _____ Water Marks (B1)      _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2)      _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3)      _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4)      _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5)      _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7)      _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>x</u> Depth (inches): _____ Water Table Present? Yes <u>x</u> No _____ Depth (inches): <u>12"</u> Saturation Present? Yes <u>x</u> No _____ Depth (inches): <u>12"</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 Plot is +/- 50% upland and 50% wetland.

**VEGETATION** – Use scientific names of plants.

Sampling Point: 33-53

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Pinus resinosa</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Acer rubrum</u>	<u>18</u>	<u>No</u>	<u>FAC</u>
3. <u>Picea rubens</u>	<u>32</u>	<u>Yes</u>	<u>FACU</u>
4. <u>Abies balsamea</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
<u>92</u> =Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Betula populifolia</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
2. <u>Abies balsamea</u>	<u>32</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Picea rubens</u>	<u>36</u>	<u>Yes</u>	<u>FACU</u>
4. <u>Acer rubrum</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
5. <u>Betula papyrifera</u>	<u>22</u>	<u>Yes</u>	<u>FACU</u>
6. _____	_____	_____	_____
7. _____	_____	_____	_____
<u>100</u> =Total Cover			
Herb Stratum (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Cornus canadensis</u>	<u>70</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Scant groundcover</u>	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
<u>70</u> =Total Cover			
Woody Vine Stratum (Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>N/A</u>	<u>0</u>	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
_____ =Total Cover			

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>5</u>	x 2 = <u>10</u>
FAC species <u>127</u>	x 3 = <u>381</u>
FACU species <u>130</u>	x 4 = <u>520</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>262</u> (A)	<u>911</u> (B)
Prevalence Index = B/A = <u>3.48</u>	

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0<sup>1</sup>

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

   Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**      Yes         No    x

Remarks: (Include photo numbers here or on a separate sheet.)  
Road fill to depths of 4"+/-.

**SOIL**

Sampling Point: 33-53

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-1"								organic mat/leaves
1-6"	10YR 3/2							very dark gray sandy loam
6-16+	10YR 2/1							fine sandy loam
16+	2.5Y 5/1							fine sandy loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- Thin Dark Surface (S9) (LRR R, MLRA 149B)
- High Chroma Sands (S11) (LRR K, L)
- Loamy Mucky Mineral (F1) (LRR K, L)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR K, L)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- Coast Prairie Redox (A16) (LRR K, L, R)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Polyvalue Below Surface (S8) (LRR K, L)
- Thin Dark Surface (S9) (LRR K, L)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Piedmont Floodplain Soils (F19) (MLRA 149B)
- Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- Red Parent Material (F21)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: none  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes X No \_\_\_\_\_

Remarks: