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1.0 PROJECT DESCRIPTION

The Bull Hill Wind Project is a 19-turbine, 34.2-megawatt (MW) wind power project proposed by Blue Sky East, LLC (the applicant) for an 158-acre project area on Bull Hill and Heifer Hill ridges in T16 MD, Hancock County Maine (Figure 1). The collection system will be underground along the road corridor and will flow to a new substation and Operations and Maintenance (O&M) facility located centrally in the project area. This design eliminates the need for a new 115 kV transmission line. The entire Township of T16 MD is designated as expedited for permitting and is currently zoned as General Management Subdistrict (M-GN), which includes protection subdistricts for wetlands and streams. The project area is low elevation commercial forest, with a substantial road system that the project will utilize to the extent practicable. Ridge elevations are between 450 and 675 feet above sea level. Blue Sky East is seeking approval from the Land Use Regulation Commission (LURC) for development of the proposed wind project and associated structures.

Stantec Consulting (Stantec) completed wetland and waterbody delineations and vernal pool surveys of the Bull Hill project area in 2009 and 2010. This report is intended to provide information normally required for Maine LURC permitting and contains:

- A Site Location Map (Appendix A);
- Maps presenting the location of resources within the project area (Appendix B);
- A summary of wetlands present within the project area (Appendix C, Table C-1);
- A summary of vernal pools on the site (Appendix C, Table C-2);
- A summary of stream resource information (Appendix C, Table C-3);
- LURC Land Use Guidance Maps (Appendix D);
- Representative site photographs (Appendix E); and
- MDEP Vernal Pool data sheets (Appendix F).

2.0 METHODS

2.1. PRELIMINARY LANDSCAPE ANALYSIS

Prior to conducting field surveys, Stantec reviewed U.S. Geological Survey topographical maps, National Wetlands Inventory maps, and State of Maine Office of GIS digital data layers for Eastbrook and T16 MD, Maine, as well as the U.S. Department of Agriculture Soil Survey map for Hancock County, Maine. The information gathered from these sources was used to identify the approximate location of known wetland and waterbody resources within the project area to support field efforts.

2.2. WETLAND AND WATERBODY RESOURCE DELINEATION

Stantec delineated the majority of the project area in 2009. Portions of the project area were delineated during winter conditions and subsequently verified during seasonally appropriate field conditions in 2010 to confirm wetland boundaries. Wetland boundaries under federal, state, and local jurisdiction were determined using the technical criteria described in the U.S. Army Corps of Engineers (Corps) *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region*. Streams and Wetland Protection Subdistricts were identified and based on criteria in the Land Use Regulations and Standards (Chapter 10). Identification of streams and *Wetlands of Special Significance* (P-WL1) were limited to observable conditions within the project area and available background information. Wetland boundaries were marked with pink, numbered flagging and surveyed using Trimble® Pro-XR Global Positioning System (GPS) receivers. GPS data were then used to produce the attached resource maps (Appendix B).

2.3. VERNAL POOL SURVEYS

Stantec completed vernal pool surveys within the proposed project area in May 2009 and May 2010. The purpose of the surveys was to identify and evaluate vernal pool habitat throughout the project area. In

May 2010, Stantec also revisited those potential vernal pools (PVPs) identified during wetland delineations, which were conducted outside the appropriate window for verifying vernal pools. Vernal pools are dynamic habitats that vary in water level, vegetative cover, and other physical characteristics during the course of a year, as well as from year to year. In addition, the breeding activity of amphibians, particularly the initiation of breeding, is dependent upon seasonal environmental parameters such as temperature and precipitation. Due to this variability, the presence and number of egg masses may differ between breeding seasons and during the course of a given breeding season. The presence, absence, and number of egg masses presented in this report reflect the results of this survey. Based on Stantec's observations of the on-site vernal pools, the survey events were conducted at the appropriate time to characterize vernal pools.

Each vernal pool was surveyed by slowly wading through the pool basin, searching for amphibian breeding activity, including the presence of egg masses and use by other vernal pool-dependent species. During the surveys, egg masses for each vernal pool-dependent amphibian species were counted and recorded. In addition, the presence of other life stages of these amphibians was noted, as was the presence of other vernal pool-dependent species or associated species. Data were also collected on the physical characteristics of the pool such as the presence/absence of a permanently flowing inlet or outlet and the presence/absence of fish. A second field visit occurred one to two weeks after the first visit to focus on species that use vernal pools later in the spring. This second visit was only performed on naturally occurring pools. Information on the biological and physical characteristics of each pool then was used to determine if the vernal pools met the criteria of a Significant Vernal Pool (SVP) as defined in Chapter 335 Section 9 of the Natural Resources Protection Act (NRPA). According to this section, a vernal pool is a natural, temporary to semi-permanent body of water occurring in a shallow depression that typically fills during the spring or fall and may dry during the summer. Vernal pools have no permanently flowing inlet or outlet and no viable populations of predatory fish. In addition, an SVP contains one or any combination of the following:

- 40 or more wood frog (*Rana sylvatica*) egg masses;
- 20 or more spotted salamander (*Ambystoma maculatum*) egg masses;
- 10 or more blue spotted salamander (*Ambystoma laterale*) egg masses;
- Presence of fairy shrimp (*Eubranchipus* spp.); or
- Documented use by a state-listed rare, threatened or endangered species that commonly require a vernal pool to complete a critical portion of their life-history such as Blanding's turtle (*Emydoidea blandingii*), spotted turtle (*Clemmys guttata*), or ringed bog haunter dragonfly (*Williamsonia lintneri*).

Vernal pools that occur within wetlands but are man-made are not regulated under the NRPA; however, man-made vernal pools can be regulated by the Corps, the U.S. Environmental Protection Agency (USEPA), and the U.S. Fish and Wildlife Service (USFWS) under the Clean Water Act depending on their function and value as a resource. Further, the Corps does not have jurisdiction over vernal pools if they are not located within a jurisdictional wetland.

The boundary of each vernal pool envelope was located using GPS Trimble® Pro-Series receivers. GPS data were then used to produce the attached resource maps (Appendix B). Each vernal pool was assigned a unique alpha-numeric code (e.g., 01DD, 10MA) that appears on the map and within this report.

2.4. RARE, THREATENED, AND ENDANGERED PLANT SURVEYS

Rare, threatened, and endangered (RTE) plants surveys were completed concurrently with the vernal pool and wetland surveys in 2009 and 2010. Stantec's botanists traversed the project area, including the access roads and electrical collection systems with associated buffer distances. Surveys occurred in May, which ensured proper identification of spring ephemeral flowering species.

2.5. AGENCY CONTACTS

The Maine Natural Areas Program (MNAP), the Maine Department of Inland Fisheries and Wildlife (MDIFW), and the USFWS were contacted for information regarding documented occurrences of RTE species and communities within or in the vicinity of the project area. Responses to those inquiries are found in Exhibit 13B and Exhibit 14 of this application.

3.0 SURVEY RESULTS

3.1. GENERAL SITE DESCRIPTION

The project area includes the low-lying ridges of Bull Hill and Heifer Hill in T16-MD. The majority of the landscape consists of slightly to moderately sloping topography, with elevations ranging from approximately 350 feet in the valleys to approximately 650 feet above sea level along the ridges. General land use within the project area includes active and timber management on most of the areas along the ridges. The upland forest community present along the ridgelines and side slopes of the project area is dominated by Beech-Birch-Maple Forest in various stages of succession due to timber management practices. This type of Northern Hardwood Forest is characterized by a combination of American beech (*Fagus grandifolia*),¹ yellow birch (*Betula alleghaniensis*), and sugar maple (*Acer saccharum*). Additional tree species include American linden (*Tilia americana*), white ash (*Fraxinus americana*), paper birch (*Betula papyrifera*), and eastern hophornbeam (*Ostrya virginiana*). A Spruce-Northern Hardwoods Forest also occurs in the Project area within the valleys but constitutes a minimal portion of the overall community types. Dominant tree species in this forest community include red spruce (*Picea rubens*), balsam fir (*Abies balsamea*), and eastern hemlock (*Tsuga canadensis*), with yellow birch and other hardwoods such as sugar maple, balsam poplar (*Populus balsamifera*), and quaking aspen (*Populus tremuloides*) also occurring. The shrub stratum in the project area includes the above-mentioned tree species, as well as striped maple (*Acer pensylvanicum*), mountain maple (*Acer spicatum*), hobblebush (*Viburnum lantanoides*), red raspberry (*Rubus idaeus*), and beaked hazelnut (*Corylus cornuta*). Many upland portions of the project area contain well-developed herbaceous layers and include large colonies of Carolina spring beauty (*Claytonia caroliniana*), Dutchman's breeches (*Dicentra cucullaria*), Canada mayflower (*Maianthemum racemosum*), and trout lily (*Erythronium americanum*). Bracken fern (*Pteridium aquilinum*), Christmas fern (*Polystichum acrostichoides*), evergreen wood fern (*Dryopteris intermedia*), and mountain wood fern (*Dryopteris campyloptera*) also occur throughout the project area. A list of plant species observed within the Project area is presented in Appendix C.

Soil Mapping in the project area was completed by Albert Frick Associates. A full soils report is found in Exhibit 16A of this application.

3.2. WETLAND AND WATERBODY DELINEATION SURVEY RESULTS

Following is a brief summary of the wetland and waterbody resources identified within the project area.

- The project contains a total of 111 wetland resources.
- There are 14 streams, 3 of which are perennial.
- Of the 111 wetland resources, 21 would be considered *Wetlands of Special Significance* (part of the resource protection subdistrict P-WL1) for containing Significant Wildlife Habitat or due to their proximity to a stream resource.

Appendix C, Table C-1 details the wetland resources identified in the project area, including the resource identifier, wetland classifications (i.e., types), associated streams and vernal pools, dominant vegetation, hydric soil indicators, and observed evidence of hydrology. Table C-3 details the stream resources identified in the Project area, including the associated wetland, names, and stream width.

¹ Nomenclature follows Haines, A. 2009. *Flora Novae Angliae* available at: [www.arthurhaines.com/tracheophyte_keys/Flora_Novae_Angliae_11Dec09.pdf]. Appendix C contains synonymy.

Emergent wetlands account for at least one-quarter of the wetlands within the project area and are regulated in LURC's resource protection subdistrict P-WL2a. Emergent wetlands are those with more than 30 percent of their area dominated by herbaceous plants such as sedges, grasses, rushes, ferns and other forbs. The emergent wetlands often make up a component of a larger wetland complex containing other wetland types. The emergent wetlands within the project area are comprised of cinnamon fern (*Osmunda cinnamomea*), common soft rush (*Juncus effuses*), common woosedge (*Scirpus cyperinus*), dark-green bulrush (*Scirpus atrovirens*), grass-leaved goldenrod (*Euthamia graminifolia*), northeastern mannagrass (*Glyceria melicaria*), fowl mannagrass (*Glyceria striata*), fringed sedge (*Carex crinita*), fox sedge (*Carex vulpinoidea*), rough sedge (*Carex scabrata*), necklace sedge (*Carex projecta*), fringed willow-herb (*Epilobium ciliatum*), golden-saxifrage (*Chrysosplenium americanum*), bedstraw (*Galium sp.*), and sensitive fern (*Onoclea sensibilis*). The soils are generally an organic or dark A-horizon over a depleted matrix with redoximorphic features in the form of iron and manganese concentrations or depletions. At least 23 resources Stantec delineated have been disturbed, with the emergent species the first to be re-established.

Just less than one quarter of the wetland resources in the project area can be at least partially classified as scrub-shrub wetlands and are regulated in LURC's resource protection subdistrict P-WL2a. The scrub-shrub wetlands often make up a major component of a larger wetland complex containing other wetland types. Scrub-shrub wetlands can occur as the transition between a re-establishing emergent wetland and existing forested wetland. Alternatively, they can be dominated by species that occur naturally as shrubs. The majority of the scrub-shrub wetlands within the project area are comprised of speckled alder (*Alnus rugosa ssp. incana*), white meadowsweet (*Spiraea alba ssp. latifolia*), rosy meadowsweet (*Spiraea tomentosa*), yellow birch, gray birch (*Betula populifolia*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), high bush cranberry (*Viburnum opulus*), northern white-cedar (*Thuja occidentalis*), balsam fir, red osier dogwood (*Cornus sericea*), long beaked willow (*Salix bebbiana*), high bush blueberry (*Vaccinium corymbosum*), and pussy willow (*Salix discolor*).

Forested wetlands account for more than half of the Project area wetland resources, generally as a dominant community type with the other wetland types occurring as parts of a larger wetland complex. These resources are regulated under LURC's resource protection subdistrict P-WL3. Forested wetlands are those with more than 30 percent of their area dominated by woody vegetation that is greater than 3 inches in diameter and 20 feet in height. The forested wetlands often make up a major component of a larger wetland complex containing other wetland types. Canopy cover may be dominated by either deciduous, evergreen, or a combination. The forested wetlands within the Project area typically consist of yellow birch, balsam fir, black ash, green ash, eastern hop-hornbeam, and red maple (*Acer rubrum*). The soils in these wetlands vary from having more than 16 inches of mucky organic material to having 3-12 inches of organic and/or a dark A horizon over a depleted matrix with redoximorphic features. Most of these areas occur primarily at positions topographically lower on the landscape and do not appear to have been disturbed for several decades.

For the purposes of this report, all streams identified in the project area meet the LURC definition of a river, stream, or brook, as provided in LURC Land Use Regulations and Standards (Chapter 10). Streams within the project area vary in size from large, United States Geological Survey-named, perennial streams to smaller intermittent streams. Named streams in the project area include an unnamed tributary of Colson Branch and an unnamed tributary to Austin's Dam Heath. Wetlands within 25 feet of streams are regulated under the resource protection subdistrict P-WL1c6.

Data for each resource mapped are presented in Appendix C, Tables 1 and 3 as described above. Resource identification numbers that appear in these tables correspond to the numbers that appear on the resource delineation maps presented in Appendix B.

3.3. VERNAL POOL SURVEY RESULTS

Stantec identified 53 vernal pools within the Project area. Eighteen of those pools were determined to be naturally occurring. Of the 18 natural vernal pools, 7 were determined to be SVPs under the NRPA definition. Five pools are not naturally occurring but they meet the significance criteria of the NRPA and

are more likely to be regulated by the Corps. A table detailing observed amphibian breeding activity in each vernal pool is presented in as Table C-2. The vernal pool locations are shown on the resource delineation maps provided in Appendix B.

3.4. RARE, THREATENED, AND ENDANGERED PLANT SURVEY RESULTS

During the 2009 and 2010 surveys, Stantec botanists discovered no RTE plant species and observed no habitat in the project area that has potential to contain such plants. The landscape has been relatively heavily managed for timber harvest, and the community type is very commonly found across the state. The area of concern raised in the MNAP response to a project inquiry, French's Dam Meadow, is not near the project area.

4.0 STATE AND FEDERAL WETLAND REGULATIONS

LURC and the Corps regulate the wetlands identified within the Project area. Under the provisions of Section 404 of the Clean Water Act, the Corps regulates activities within waters of the United States, which include navigable waters and all their tributaries, adjacent wetlands, and other waters or wetlands where degradation or destruction could affect interstate or foreign commerce. The Corps has issued a Programmatic General Permit (PGP) for the State of Maine that merges the federal and state permit review process for many projects. In Maine, wetlands and waterbodies, as well as other protected natural resources, in unorganized plantations and townships are regulated under LURC's Land Use Districts and Standards (Chapter 10). The following provides information regarding LURC's zoning subdistricts. The purpose of this system of subdistricts is to protect valuable resources such as waterbodies, wetlands, wildlife habitat and mountain areas above 2,700 feet, and to prevent conflicts between incompatible land uses.

Development and Management Subdistricts

LURC's jurisdiction includes 10 development subdistricts and 3 management subdistricts. The Bull Hill project area includes the General Management Subdistrict (M-GN). The M-GN subdistrict includes those areas that LURC determined were appropriate for forestry or agricultural management activities, but that did not need the level of protection afforded by the Highly Productive Management Subdistrict (M-HP) or the Natural Character Management Subdistrict (M-NC). The M-GN subdistrict also includes those areas that do not fit within any other subdistrict.

Protection Subdistricts

Within LURC jurisdiction, the level of regulatory review for wetland alterations depends upon the size of the proposed impact and the **Wetland Protection Subdistrict (P-WL)** involved. Generally, projects that alter less than 4,300 square feet of P-WL2 or P-WL3 wetlands are exempt from the Tier permitting process. For all other projects, three categories of review exist: Tier 1, 2 and 3.

- Tier 1 reviews are limited to projects that alter between 4,300 square feet and 14,999 square feet of P-WL2 or P-WL3 wetlands.
- Tier 2 reviews are limited to projects that alter between 15,000 square feet and 43,560 square feet (1 acre) P-WL2 or P-WL3 wetlands provided the wetlands do not contain critically imperiled (S1) or imperiled (S2) natural communities.
- Tier 3 reviews are for projects that alter any area of a P-WL1 wetland; between 15,000 square and 43,559 square feet of P-WL2 or P-WL3 wetlands that contain critically imperiled (S1) or imperiled (S2) natural communities; or 43,560 square feet (1 acre) or more of a P-WL2 or P-WL3 wetlands.

Alterations of P-WL1 wetlands may be eligible for Tier 1 or 2 review if LURC determines that the activity will have no undue adverse impact on the freshwater wetlands or other protected natural resources present. The applicant must specifically request that LURC review the project's eligibility in order to reduce the level of regulatory review.

Based upon the available LURC *Land Use Guidance Map for T16 MD BPP*, and fieldwork conducted by Stantec, the project area includes P-SL2, P-WL1, P-WL2a and P-WL3 wetlands. Stantec identified 20 *Wetlands of Special Significance* (P-WL1) within the project area. Of these *Wetlands of Special Significance*, 12 include the P-WL3, 3 include the P-WL2a, and 5 occur with no other wetland protection sub-district. In some combination or alone, an additional 101 resources are associated with the P-WL2a and P-WL3 protection subdistricts.

LURC jurisdiction also includes 13 other protection subdistricts. The other applicable subdistrict for this project is the Shoreland Protection Subdistrict.

The **Shoreland Protection Subdistricts (P-SL)** are intended to protect water quality, habitat for plants, fish and wildlife, and scenic and recreational opportunities. There are two defined shoreland protection subdistricts, P-SL1 and P-SL2; of which only P-SL2 occurs within this Project area.

- The P-SL1 is defined as those areas within 250 feet of the normal high water mark, measured as a horizontal distance landward of such high water mark, of (a) tidal waters, and (b) flowing waters downstream from the point where such waters drain 50 square miles or more.
- The P-SL2 is defined as those areas within 75 feet measured as a horizontal distance landward of the normal high water mark of stream channels upstream from the point where such channels drain 50 square miles, the upland edge of those coastal and inland wetlands as defined in LURC Chapter 10, and the normal high water mark of bodies of standing water less than 10 acres in size, excluding bodies of standing water that are less than 3 acres in size and that are not fed or drained by a flowing water.

Depending upon the type of activities, projects located within a P-SL subdistrict may require a permit from LURC. Those uses that require a permit are described in Section 10.23, L of LURC's *Land Use Districts and Standards*. Wind energy development within designated expedited wind energy development areas is an allowed use that requires a permit from LURC.

Within the project area, 8 wetlands and 2 larger watercourses identified within the Project area would have an associated 75-foot P-SL2. These larger watercourses include S16 (an unnamed tributary to Austin's Dam Heath) and S03 (Colson Branch).

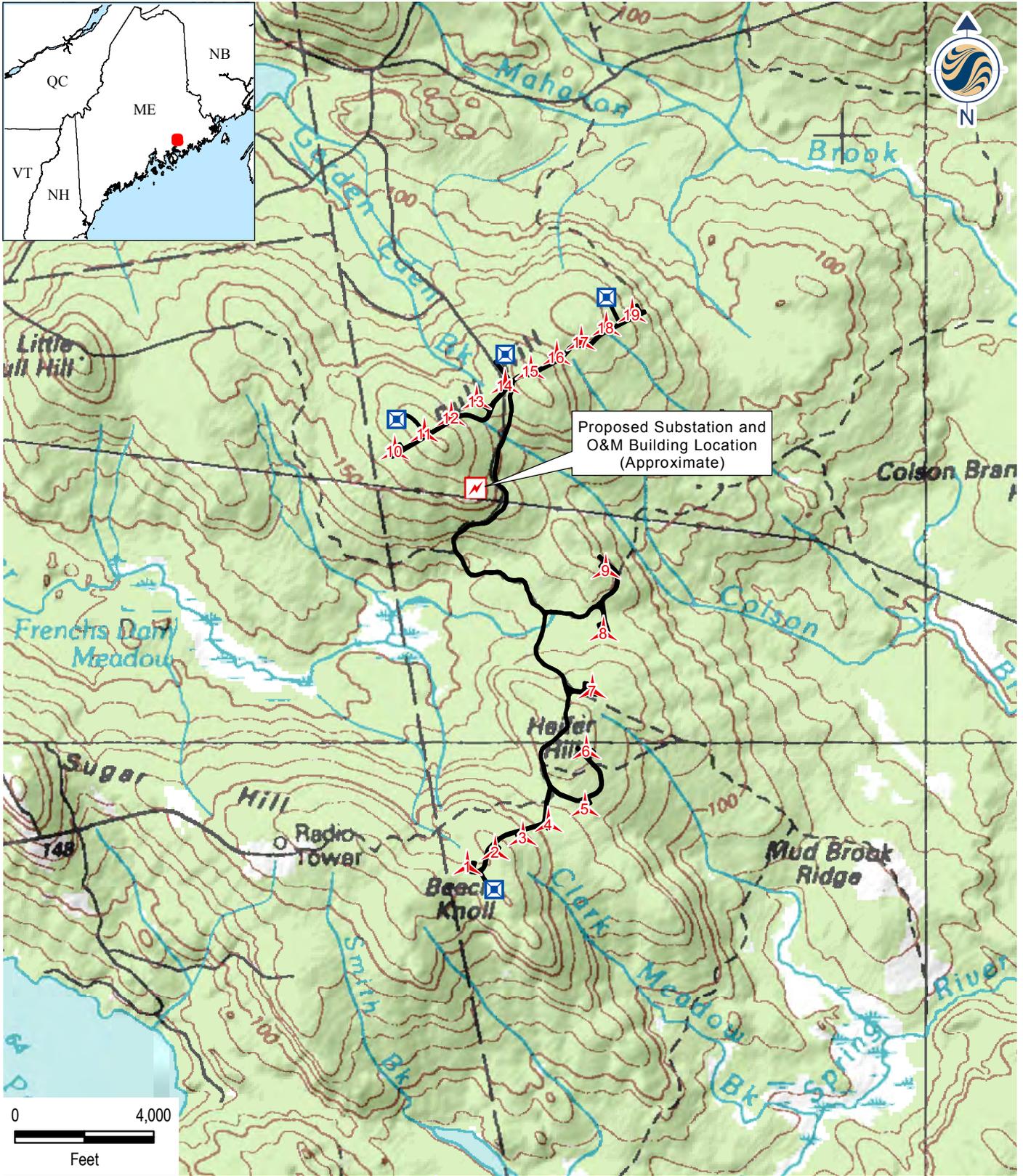
Regulatory Summary

The Project area includes one management subdistrict, M-GN, and two protection subdistricts, P-WL and P-SL. The M-GN subdistrict encompasses the entire Project area exclusive of those areas within one of the other protection subdistricts. Each of the identified stream and wetland resources occurs within the Wetland Protection Subdistrict, P-WL. In addition, the identified wetlands and waterbodies have an associated 75-foot Shoreland Protection Subdistrict, P-SL2. No resources within the Project area have an associated P-SL1.

Any proposed development is subject to the provisions and regulatory requirements of these respective subdistricts as outlined in the *Land Use Districts and Standards* (Chapter 10). If the proposed project is a "prohibited use" for the given subdistrict(s), an applicant can petition LURC for a change in subdistrict boundaries or zoning classification to allow for new uses. Such a zoning change can only be approved if it is (1) consistent with LURC's Comprehensive Land Use Plan, (2) satisfies a demonstrated need in the community or area, and (3) would have no undue adverse impacts on resources or uses [12 M.R.S.A. §685-A(8-A)].

Appendix A

Site Location Map



195600500



Stantec Consulting Services Inc.
 30 Park Drive
 Topsham, ME USA
 04086
 Phone (207) 729-1199
 Fax: (207) 729-2715
 www.stantec.com

- Legend**
- Turbine Layout
 - Permanent MET Towers
 - Proposed Access Road

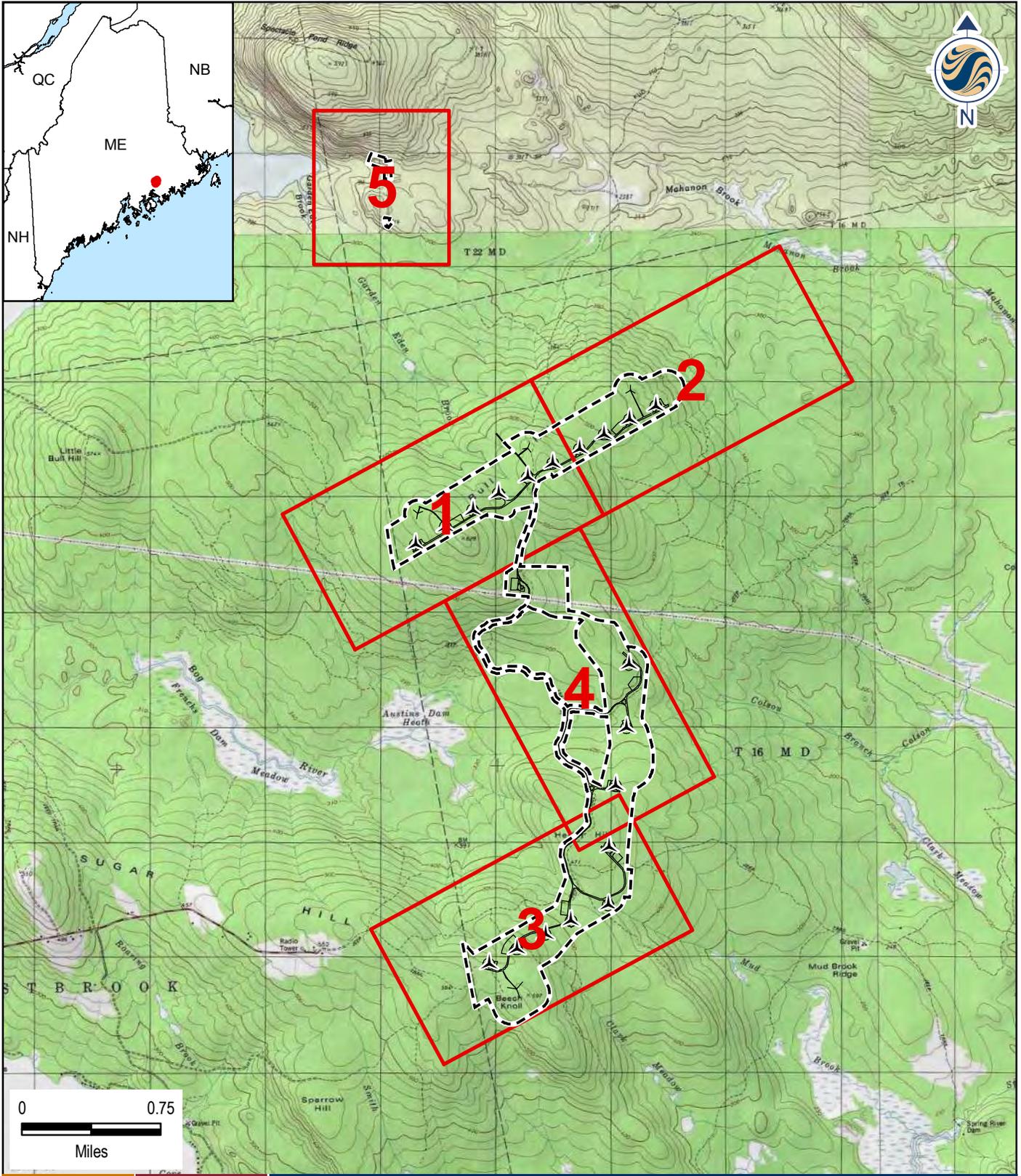
Client/Project
 Blue Sky East
 Bull Hill Wind Project
 T16 MD, Maine

Figure No.
1

Title
 Project Site Map
 December 3, 2010

Appendix B

Resource Maps



195600500



Stantec Consulting Services Inc.
 30 Park Drive
 Topsham, ME USA
 04086
 Phone (207) 729-1199
 Fax: (207) 729-2715
 www.stantec.com

Legend

 Map Extent

Client/Project
 Blue Sky East Wind, LLC
 Bull Hill
 Eastbrook and T16 MD, Maine

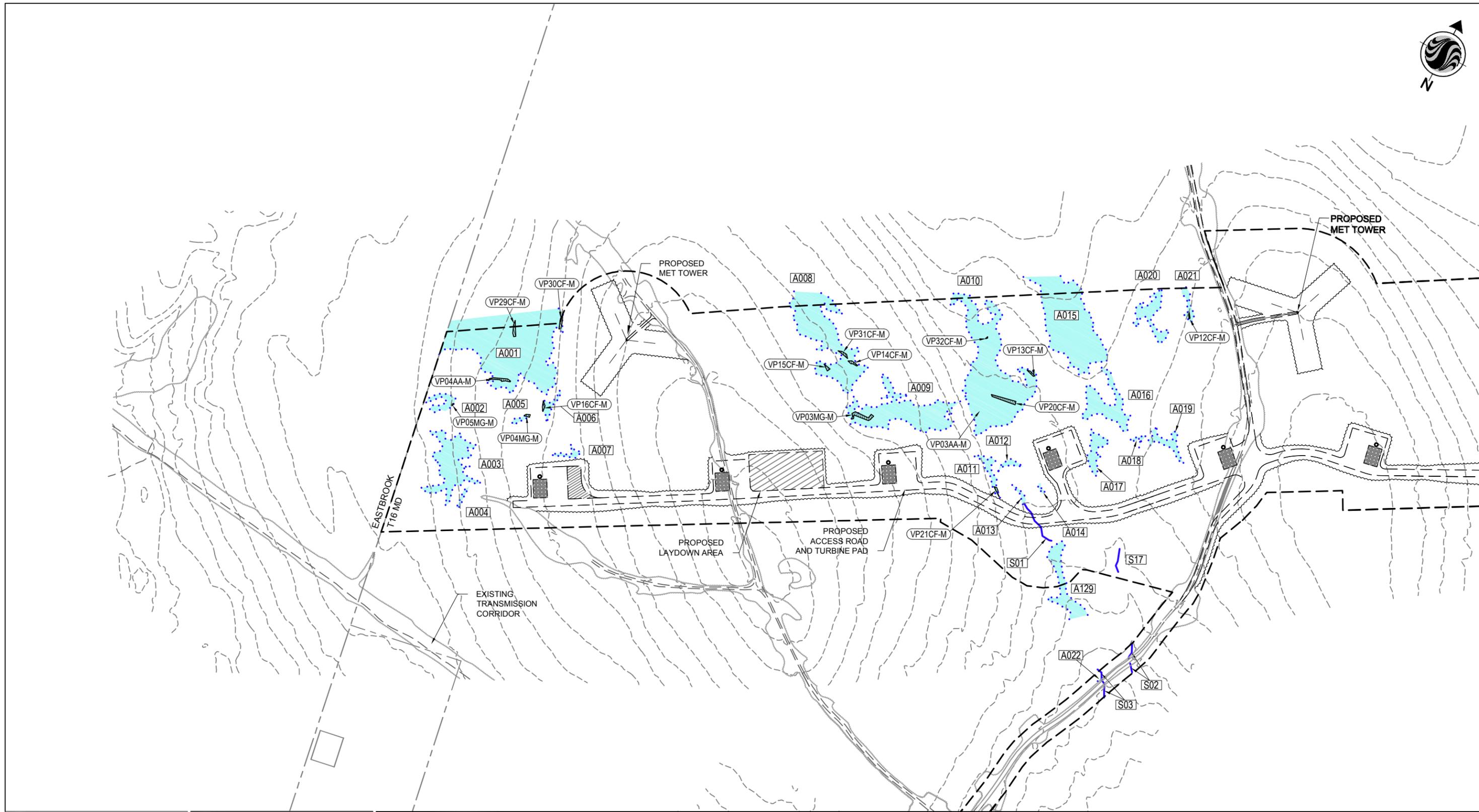
Figure No.

Key

Title

Delineated Natural Resource Map

December 2010



Legend

- Stream identified by Stantec
- Project/Delineation limits
- Wetland identified by Stantec
- Vernal pool identified by Stantec
- Significant vernal pool identified by Stantec

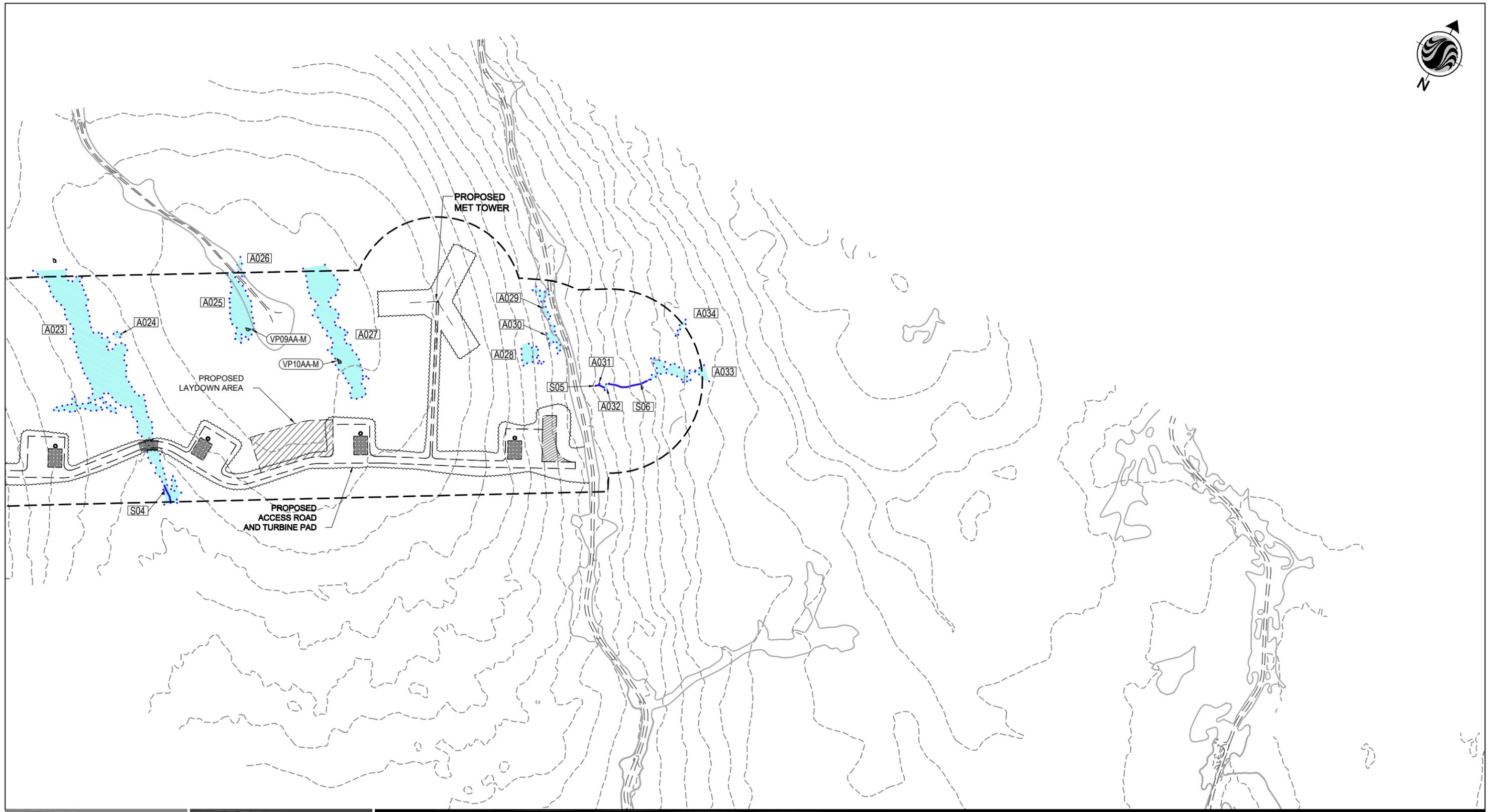
- A001** Resource identification
- VP01MA-N** Natural vernal pool identification
- VP02MA-M** Man-made vernal pool identification
- SVP01DD-N** Significant vernal pool identification
- PVP01BB-N** Potential vernal pool identification

Notes

1. Wetland boundaries delineated in accordance with USACE 1987 Wetland Delineation Manual or subsequent versions. Vernal pools surveyed in accordance with Maine Association of Wetland Scientists 2010 Interim Vernal Pool Survey Protocol, April 2010.
2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
3. Basemap features comprised of photogrammetry obtained from James W. Sewell Company.
4. Civil Design provided by James W. Sewell Company dated 11/15/2010.

Client/Project
Blue Sky East Wind, LLC
 Bull Hill
 Eastbrook and T16MD, Maine
 Figure No.
1
 Title
Delineated Natural Resource Map
 December 2010





Legend

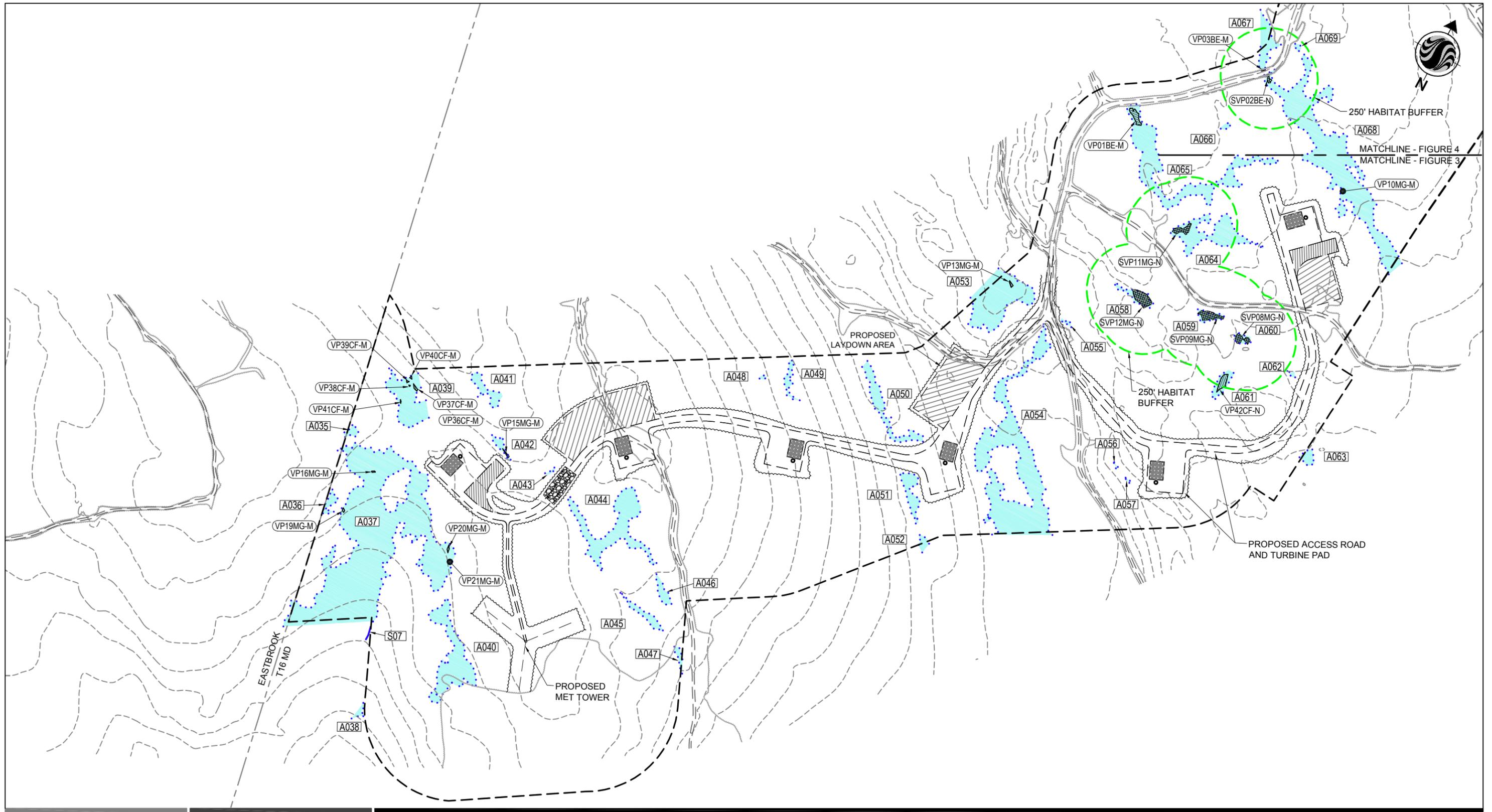
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-  Wetland identified by Stantec
-  Vernal pool identified by Stantec
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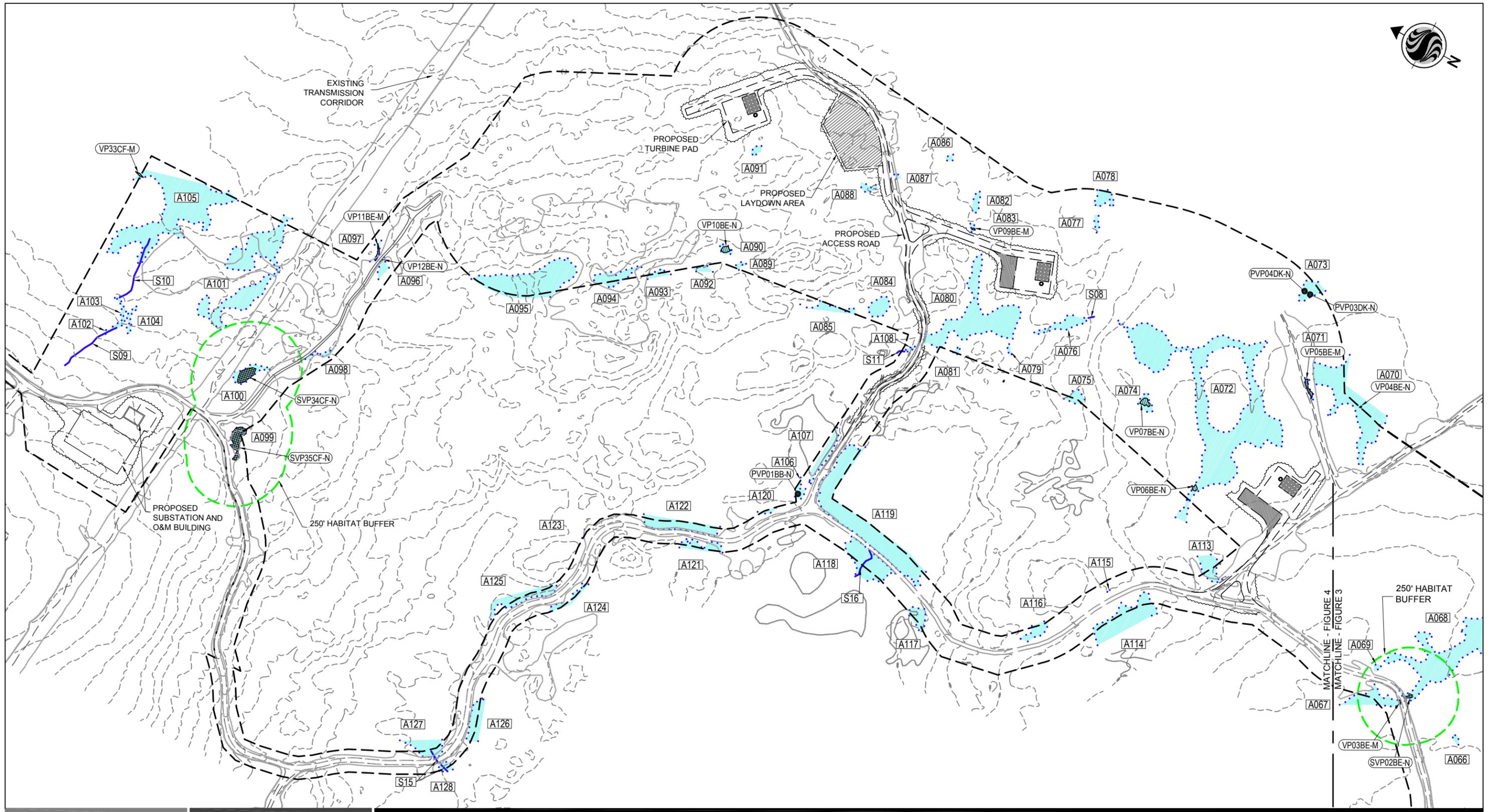
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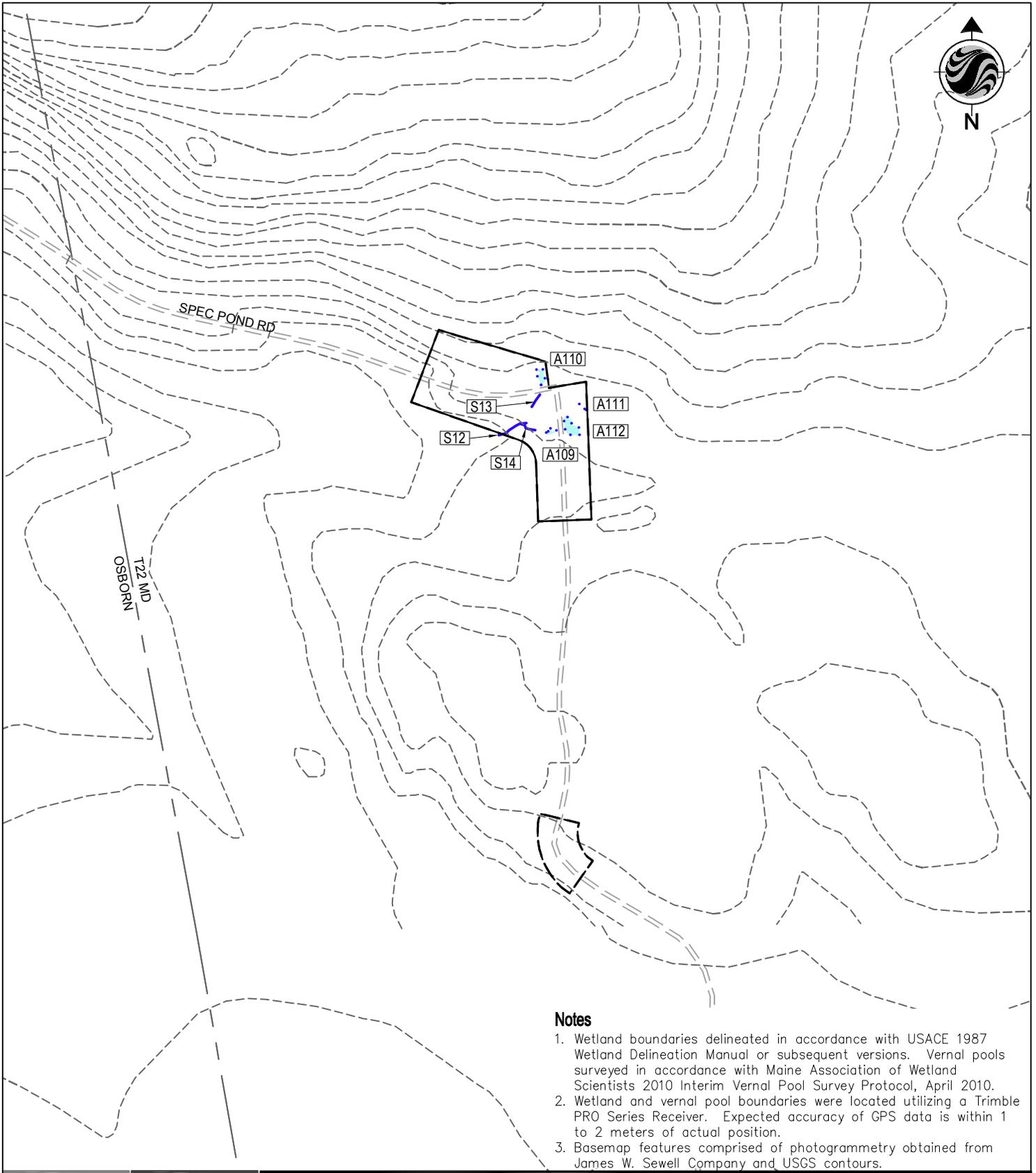
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2. Wetland and vernal pool boundaries were located utilizing a Trimble PRO Series Receiver. Expected accuracy of GPS data is within 1 to 2 meters of actual position.
3. Basemap features comprised of photogrammetry obtained from James W. Sewell Company and USGS contours.

Legend

-  Stream identified by Stantec
-  Project limits
-  Wetland identified by Stantec
-  Resource identification

Client/Project 195600500

Blue Sky East Wind, LLC

Bull Hill

Eastbrook and T16MD, Maine

Figure No.

5

Title

Delineated Natural Resource Map



Stantec

Appendix C

Resource Tables

Table C-1: Wetland Resource Table

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
1	A001	D		D			29CF_M, 04AA_M, 30CF_M	P-WL3		northern white-cedar, yellow birch, red spruce, balsam fir, green ash, red raspberry, common woolsedge, sedges, dwarf raspberry, three-leaved goldthread, common wrinkle-leaved goldenrod, Canada dwarf-dogwood, cinnamon fern	3" organic material over a depleted matrix	Areas of standing water, soil saturated to the surface
1	A002			D			05MG_M	P-WL2a		common woolsedge, common soft rush, creeping bentgrass, fringed willow-herb, sensitive fern, balsam fir, red maple	2-4" dark A horizon over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface
1	A003	D		D				P-WL3		yellow birch, balsam fir, American elm, quaking poplar, red maple, common woolsedge, sallow sedge, pointed broom sedge, fringed sedge, common soft rush, fringed willow-herb, dwarf raspberry, common grass-leaved-goldenrod, common wrinkle-leaved goldenrod	2-4" dark A horizon over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface
1	A004			D				P-WL2a		pointed broom sedge, sallow sedge, fringed sedge, creeping bentgrass	2-4" dark A horizon over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface
1	A005			D			04MG_M	P-WL2a		creeping bentgrass, slender wood-reed, pointed broom sedge, common soft rush, cinnamon fern, sensitive fern	2-4" dark A horizon over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
1	A006			D			16CF_M	P-WL2a		sallow sedge, slender wood-reed, fowl manna grass, fringed sedge, common soft rush, creeping bentgrass, cinnamon fern, sensitive fern, balsam fir, red maple, white meadowsweet	2-4" dark A horizon over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface
1	A007			D				P-WL2a		common woolsedge, sedges, common soft rush, dwarf raspberry	Thin layer of organic material over a depleted matrix	Areas of standing water, soil saturated to the surface
1	A008	D					14CF_M, 15CF_M, 31CF_M	P-WL3		red maple, yellow birch, gray birch, eastern hemlock, red spruce, common woolsedge, fringed sedge, pointed broom sedge, cinnamon fern, fringed willow-herb	3-6" mixed organic/A horizon over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface
1	A009	D					03MG_M	P-WL3		yellow birch, red maple, red spruce, eastern hemlock, three-seeded sedge, fringed sedge, greater bladder sedge, pointed broom sedge, creeping bentgrass, fringed willow-herb, cinnamon fern, sensitive fern, evergreen wood fern	4-10" organic material over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface, pit and mound micro-topography, wetland drainage patterns
1	A010	D					32CF_M, 20CF_M, 13CF_M, 03AA_M	P-WL3		northern white-cedar, yellow birch, red spruce, balsam fir, red maple, three-seeded sedge, greater bladder sedge, fringed willow-herb	4-6" organic material over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface
1	A011			D			21CF_M	P-WL2a		common woolsedge, common soft rush, cinnamon fern, sensitive fern, common grass-leaved-goldenrod, red raspberry	4" A horizon over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
1	A012			D			P-WL2a		fringed sedge, cinnamon fern, sensitive fern, royal fern, common wrinkle-leaved goldenrod, Virginian strawberry, red raspberry, yellow birch, red spruce, balsam fir, red maple	4" organic material over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface	
1	A013			D		S01	P-WL1c6, P-WL2a		yellow birch, green ash, red spruce, red maple, balsam fir, common winterberry, cinnamon fern, evergreen wood fern	4-6" A horizon over depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface, water-stained leaves	
1	A014		D				P-WL2a		balsam fir, yellow birch, common winterberry	4-6" A horizon over depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface	
1	A015	D					P-SL2, P-WL3		red spruce, balsam fir, yellow birch	4" organic material over a depleted matrix with redoximorphic concentrations	Soil saturated to the surface	
1	A016		D				P-SL2, P-WL2a		northern white-cedar, red spruce, balsam fir, gray birch, red maple, common winterberry, cinnamon fern, Canada dwarf-dogwood, northern wood sorrel	4-6" organic material over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface	
1	A017	D					P-WL3		red spruce, balsam fir, northern white-cedar, yellow birch, red maple, gray birch, eastern hemlock, cinnamon fern, royal fern, Canada dwarf-dogwood, three-leaved goldthread	4" organic material over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface	
1	A018	D					P-WL3		northern white-cedar, balsam fir, red maple, royal fern, cinnamon fern, sharp-toothed nodding-aster	4" organic material over a depleted matrix	Soil saturated to the surface	

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
1	A019	D	D	D			P-WL3, P-WL2a		balsam fir, red maple, gray birch, yellow birch, red spruce, red raspberry, common woosedge, common wrinkle-leaved goldenrod, Virginian strawberry	4" organic material over a depleted matrix	Areas of standing water, soil saturated to the surface	
1	A020		D				P-WL2a		northern white-cedar, red spruce, balsam fir, eastern hemlock, red maple, gray birch, yellow birch, cinnamon fern, sedges	4" organic material over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface	
1	A021			D			12CF_M P-WL2a		common woosedge, red raspberry, bristly blackberry, balsam fir, red spruce, red maple	4" organic material over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface	
1	A022	D				S15	P-SL2, P-WL1c6, P-WL3		no data	no data	no data	
2	A023	D		D		S04	P-WL1c6, P-WL2a, P-WL3		northern white-cedar, red spruce, eastern hemlock, red maple, yellow birch, balsam fir, silky dogwood, three-seeded sedge, fringed sedge, common woosedge, three-leaved goldthread, cinnamon fern, New York fern	4-10" organic material over a gleyed matrix	Areas of standing water, soil saturated to the surface, wetland drainage patterns	
2	A024			D			P-WL2a		common woosedge, red raspberry, balsam fir	4" organic material over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface	
2	A025	D					09AA_M P-WL3		red spruce, balsam fir, yellow birch, red maple, common woosedge, fringed sedge, three-seeded sedge	2-4" organic material over a depleted matrix with organic streaking and redoximorphic concentrations	Areas of standing water, soil saturated to the surface	
2	A026			D			P-WL2a		common woosedge, sensitive fern, red spruce, red maple, gray birch	2-4" dark A horizon over a depleted matrix with organic streaking and redoximorphic concentrations	Areas of standing water, soil saturated to the surface	

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
2	A027	D					10AA_M	P-WL3		red spruce, balsam fir, three-seeded sedge, common woolsedge, cinnamon fern	4" dark A horizon over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface
2	A028			D				P-WL2a		common woolsedge, common soft rush, fringed sedge, pointed broom sedge, tall white-aster, common wrinkle-leaved goldenrod, sensitive fern, red spruce, gray birch	3-6" dark A horizon over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface
2	A029			D				P-WL2a		common woolsedge, fringed sedge, common soft rush, tall white-aster, common wrinkle-leaved goldenrod, sensitive fern, red spruce, gray birch	2-4" dark A horizon over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface
2	A030			D				P-WL2a		common woolsedge, fringed sedge, common soft rush, common wrinkle-leaved goldenrod, sensitive fern, red spruce, gray birch	2-4" dark A horizon over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface
2	A031			D		S05		P-WL1c6, P-WL2a	R4UB	golden-saxifrage, Canada reed grass, sensitive fern, yellow birch	4-6" dark A horizon over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface
2	A032			D		S05, S06		P-WL1c6, P-WL2a	R4UB	golden-saxifrage, Canada reed grass, sensitive fern, yellow birch	4-6" dark A horizon over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface
2	A033	D				S06		P-WL1c6, P-WL3		yellow birch, green ash, red spruce, balsam fir, sensitive fern, cinnamon fern, fiddlehead fern	3-5" dark A horizon over a depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface, wetland drainage patterns
2	A034	D		D				P-WL2a, P-WL3		northern white-cedar, eastern hemlock, balsam fir, yellow birch, eastern rough sedge, three-seeded sedge, cinnamon fern	Areas with 12" of organic material; areas with 3-6" of organic material over a depleted matrix with redoximorphic features	Areas of standing water, soil saturated to the surface, wetland drainage patterns

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
3	A035	D						P-WL3	recently cut	balsam fir, red maple, tall white-aster, common soft rush, necklace sedge	Soil disturbed and mixed from recent harvest activity. 4" organic material over a mixed, depleted matrix with organic material throughout the coarse sandy loam	Areas of standing surface water, soil saturated to the surface
3	A036			D				P-WL2a	recently cut	red maple, common winterberry, common woosedge, cinnamon fern, common wrinkle-leaf goldenrod	3-4" organic material, 1-2" A horizon over a depleted B horizon with 15% redoximorphic features at 6"	Soil saturated to the surface, 1-3" standing water in ruts
3	A037	D				S07	16MG_M, 19MG_M, 20MG_M, 21MG_M	P-WL1c6, P-WL3		northern white-cedar, balsam fir, red maple, red spruce, common winterberry, white meadowsweet, sensitive fern, common woosedge, cinnamon fern	4-6" organic material over 3" A horizon over a depleted B horizon with 5% redoximorphic features at 10"	Soil saturated to the surface, wetland drainage patterns
3	A038	D						P-WL3		quaking poplar, yellow birch, red maple, balsam fir, green ash, cinnamon fern, evergreen wood fern	Very dark A horizon over a gravelly B horizon with many, common, prominent redoximorphic features at 7"	Soil saturated to the surface, wetland drainage patterns toward stream off project area
3	A039			D			41CF_M, 36CF_M, 37CF_M, 38CF_N, 39CF_M, 40CF_M, 33CF_M	P-WL2a		red maple, common woosedge, eastern rough sedge, common wrinkle-leaved goldenrod	8" very dark A horizon over a gravelly depleted matrix with many, common, prominent redoximorphic features at 6"	Areas of 5-6" standing water
3	A040			D				P-WL2a	recently cut	balsam fir, red spruce, yellow birch, red maple, speckled alder, cinnamon fern, three-seeded sedge, northern white-cedar	8" organic material over a very dark A horizon over rock	Standing water in pockets, recently altered hydrology by harvest activity
	A041			D				P-SL2, P-WL2a	recently cut	red spruce, balsam fir, yellow birch, speckled alder, cinnamon fern, three-seeded sedge, northern white-cedar, sheep American-laurel	8" organic material over a very dark A horizon over rock	Altered with standing water in ruts

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
3	A042			D			15MG_M	P-WL2a	skidder rut	red maple, balsam fir, gray birch, cinnamon fern, common woosedge, willow herb, fowl manna grass	4-5" organic material over 2-3" A horizon over a depleted B horizon with 15% redoximorphic features at 8"	Soil saturated to the surface, 1-2" standing water in ruts
3	A043			D				P-WL2a	skidder rut	gray birch, red maple, cinnamon fern, necklace sedge	6" organic material over 2-3" dark A horizon over a depleted B horizon with 5% redoximorphic concentrations at 10" and 25-35% coarse fragments	1-4" standing water in ruts, soil saturated to the surface
3	A044	D						P-WL3	winter conditions	northern white-cedar, red maple, red spruce, common winterberry, speckled alder, highbush blueberry, rhodora, cinnamon fern, common woosedge	6" organic material over 2-3" dark A horizon over a depleted B horizon with 5% redoximorphic concentrations at 10" and 25-35% coarse fragments	Soil saturated to the surface, wetland drainage patterns
3	A045	D						P-WL3		balsam fir, red spruce, red maple, common winterberry, cinnamon fern, three-seeded sedge	4-6" organic material over 3-4" dark A horizon over a depleted B horizon with 10% redoximorphic features at 10"	Soil saturated to the surface, wetland drainage patterns
3	A046	D						P-WL3		balsam fir, red spruce, gray birch, red maple, three-seeded sedge, cinnamon fern	6-8" organic material over a depleted B horizon with 5% redoximorphic features at 8-10" and 25% coarse fragments	Soil saturated to the surface, wetland drainage patterns
3	A047			D				P-WL2a		red spruce, Canada reed grass, common wrinkle-leaved goldenrod, tall white aster	8+" organic material over rock	3-4" standing water, soil saturated to the surface
3	A048			D				P-WL2a	recently cut	yellow birch, sheep American-laurel, common woosedge	Organic material over rock	Soil saturated to the surface

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
3	A049	D						P-WL3		northern white-cedar, red spruce, balsam fir, sheep American-laurel, three-seeded sedge, common woolsedge	10" organic material over depleted matrix with few, faint, fine redoximorphic features	Soil saturated to the surface
3	A050	D	D					P-WL3, P-WL2a	very disturbed soil, skid trail has filled part of wetland	northern white-cedar, balsam fir, red spruce, common woolsedge, three-seeded sedge, cinnamon fern	3" dark A horizon over loamy sand with stripped matrix, disturbed from harvesting activity, with redoximorphic concentrations at 8"	Areas of standing water, soil saturated
3	A051	D						P-WL3		balsam fir, red maple, red spruce, northern white-cedar, cinnamon fern, three-seeded sedge, common woolsedge	3-5" organic material over 2-3" dark A horizon over a depleted B horizon with 5% redoximorphic concentrations at 8"	Soil saturated to the surface, 1-2" standing water in pits
3	A052		D					P-WL2a	areas disturbed	balsam fir, red maple, red spruce, northern white-cedar, cinnamon fern, three-seeded sedge, common woolsedge	3-5" organic material over 2-3" dark A horizon over a depleted B horizon with 5% redoximorphic concentrations at 8"	Soil saturated to the surface, 1-2" standing water in pits
3	A053	D					13MG_M	P-SL2, P-WL3	cedar swamp, areas disturbed	northern white-cedar, balsam fir, red maple, yellow birch, common winterberry, cinnamon fern, sensitive fern, three-seeded sedge	Areas of histosol, areas of 4-6" organic material over 4-6" dark A horizon over a depleted B horizon	Soil saturated to the surface, wetland drainage patterns
3	A054	D						P-WL3	areas disturbed	balsam fir, red spruce, red maple, northern white-cedar, common winterberry, three-seeded sedge, cinnamon fern, three-leaved goldthread, fowl manna grass	6-12" organic material over rock and/or a depleted B horizon	Soil saturated to the surface, wetland drainage patterns
3	A055		D					P-WL2a		common winterberry, speckled alder, royal fern	6" very dark A horizon over a depleted B horizon with 3-5% redoximorphic concentrations in a fine sandy loam	Areas of standing water, soil saturated

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
3	A056	D						P-WL3		northern white-cedar, balsam fir, red spruce, eastern hemlock, starflower, cinnamon fern	4" organic material over a dark A horizon over a depleted B horizon with redoximorphic features	Soil saturated to the surface
3	A057	D						P-WL3		balsam fir, red spruce, red maple, starflower	4" organic material over a dark A horizon over a depleted B horizon with redoximorphic features	Soil saturated to the surface
3	A058		D		D		12MG_N	P-WL1c4, P-WL2a		red maple, balsam fir, common winterberry, cinnamon fern	Ponded for a long duration	24+" standing water in vernal pool basin
3	A059	D			D		09MG_N	P-WL1c4, P-WL3		red maple, yellow birch, eastern hemlock, balsam fir, common winterberry, sheep American-laurel, northern white-cedar, cinnamon fern	3" organic material over 4" dark A horizon over a depleted B horizon with 5% redoximorphic concentrations	Ponded with 2' standing water
3	A060	D					08MG_N	P-WL1c4, P-WL3		northern white-cedar, eastern hemlock, red maple, common winterberry, cinnamon fern	3" organic material over 8" stripped matrix (E horizon) with organic streaking and redoximorphic concentrations over a dark horizon with redoximorphic concentrations	8-10" standing water
3	A061		D				42CF_N	P-WL2a		yellow birch, red maple, common winterberry, cinnamon fern	8" organic material over a depleted matrix with 10% redoximorphic concentrations (Histic epipedon)	6-10" standing water, soil saturated to the surface, water stained leaves
3	A062	D						P-WL3		northern white-cedar, red maple, balsam fir, sheep American-laurel	Hydric spodosol with many, common, prominent redoximorphic features at 6"	Soil saturated to the surface
3	A063		D					P-WL2a	potential vernal pool outside project area--suspected significant	no data	no data	no data

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
3	A064	D	x				11MG_N	P-WL1c4, P-WL3		balsam fir, northern white-cedar, red spruce, red maple, common winterberry, highbush blueberry, speckled alder, gray birch, cinnamon fern, Canada dwarf-dogwood, common woolsedge	5" organic material 2" dark A horizon, 16" depleted B horizons, 2" hard pan, all with fine/faint redoximorphic concentrations	Soil saturated to the surface, 3-10" standing water
3	A065	D					01BE_N	P-WL3		balsam fir, northern white-cedar, red maple, red spruce, common winterberry, speckled alder, gray birch, cinnamon fern, common woolsedge, fowl manna grass, three-seeded sedge	2" very dark A horizon over 4" E horizon over Bhs horizon (10YR 3/3) with a cemented layer at 18"	Soil saturated to the surface, wetland drainage patterns, 3" standing water in pits
3	A066	D						P-WL3		balsam fir, gray birch, red maple, sheep American-laurel, cinnamon fern, Canada dwarf dogwood, three-seeded sedge	4" organic material over a depleted B horizon with 5% redoximorphic features at 7"	Soil saturated to the surface, water staining
3	A067	D					03BE_M	P-WL3		red maple, balsam fir, gray birch, speckled alder, common winterberry, white meadowsweet, sheep American-laurel, fowl manna grass, three-seeded sedge, common woolsedge	3-6" organic material over 4-6" dark A horizon over a depleted B horizon	Soil saturated to the surface, 3" standing water, water staining
3	A068	D					02BE_N, 10MG_M	P-WL1c4, P-WL3	(plots done)	northern white-cedar, balsam fir, red maple, red spruce, highbush blueberry, speckled alder, gray birch, three-seeded sedge, fowl manna grass, common woolsedge, common winterberry	3-10" organic material over a depleted B horizon with 10% redoximorphic concentrations; 4-6" organic material over a depleted B horizon with 10-20% redoximorphic concentrations; 6-10" organic material over rock	Wetland drainage patterns, soil saturated to the surface, water staining

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
3	A069	D						P-WL3		northern white-cedar, balsam fir, red spruce, speckled alder, red maple, cinnamon fern, northern white-cedar, Canada dwarf dogwood	5" organic material over 2-3" dark A horizon over a depleted B horizon	Soil saturated to the surface, water staining
4	A070	D					04BE_N	P-WL3	Larger cedar/spruce bog offsite. Plots done	northern white-cedar, balsam fir, red spruce, common winterberry, speckled alder, gray birch, highbush blueberry, cinnamon fern, fowl manna grass, common woolsedge	Areas of 8-15" organic over rock; or over a depleted B horizon	Soil saturated to the surface, water staining, wetland drainage patterns
4	A071			D			05BE_M	P-WL2a	Anthropogenic. Ditch	red maple, gray birch, common woolsedge, common soft rush, fowl manna grass, withe-rod	1" organic material over 5-6" A horizon over a depleted, sandy B horizon with 15-20% redoximorphic concentrations at 8"	Water staining, 2-6" standing water
4	A072	D	x				06BE_N	P-WL3		balsam fir, northern white-cedar, red spruce, red maple, common winterberry, speckled alder, highbush blueberry, gray birch, cinnamon fern, fowl manna grass	8-12" organic material over a depleted matrix with redoximorphic concentrations; some areas of 16+" organic material	2-10" standing water, wetland drainage patterns
4	A073	D					04DK_N, 03DK_N	P-WL1c4, P-WL3	recently cut. Potential vernal pools	no data	no data	no data
4	A074	D					07BE_N	P-WL3		red maple, balsam fir, common winterberry, highbush blueberry, rhodora, sheep American-laurel, cinnamon vern, three-seeded sedge, Canada dwarf dogwoon	6" organic material over 3" dark A horizon over a depleted B horizon with 5% redoximorphic concentrations at 10" and 25% coarse fragments	1-8" standing water, soil saturated to the surface
4	A075	D						P-WL3		northern white-cedar, red maple, balsam fir, red spruce, common winterberry, cinnamon fern, three-seeded sedge, three-leaved goldthread	36" organic material over rock (Histosol)	Soil saturated to the surface, standing water

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
4	A076	D				S08		P-WL1c6, P-WL3		balsam fir, red spruce, northern white-cedar, mountain holly, cinnamon fern, three-seeded sedge, dewdrop, three-leaved goldthread	2-3" dark to very dark A horizon over a depleted sandy soil with 25% redoximorphic concentrations	Wetland drainage patterns
4	A077	D						P-WL3		balsam fir, northern white-cedar, red maple, cinnamon fern	4-5" organic material over a thin dark A horizon over a depleted B horizon with 5% redoximorphic concentrations at 6"	Wetland drainage patterns, water staining
4	A078	D						P-SL2, P-WL3	recently cut	no data	no data	no data
4	A079		D					P-WL2a		balsam fir, highbush blueberry, sheep American-laurel, red spruce, cinnamon fern, three-seeded sedge, common wooldsedge	8-12" organic material over rock	Soil saturated to the surface, 1-3" standing water in some areas
4	A080	D						P-WL3		northern white-cedar, balsam fir, red spruce, common winterberry, speckled alder, mountain holly, cinnamon fern, three-seeded sedge, dewdrop	12+" organic material	Soil saturated, standing water
4	A081	D						P-WL3		balsam fir, red maple, red spruce, highbush blueberry, speckled alder, common winterberry, cinnamon fern, three-seeded sedge	6-8" organic material over rock, areas of 6-8" organic material over 5" dark A horizon over rock	Soil saturated to the surface, 1-2" standing water in pits, water staining
4	A082	D					09BE_M	P-WL3		northern white-cedar, balsam fir, red maple, speckled alder, highbush blueberry, cinnamon fern, sheep American-laurel, three-seeded sedge	6-8" organic material over a depleted B horizon with 5% redoximorphic concentrations at 8"	Soil saturated to the surface, 1-2" standing water in pits
4	A083	D						P-WL3		northern white-cedar, balsam fir, red maple, speckled alder, highbush blueberry, cinnamon fern, sheep American-laurel, three-seeded sedge	6-8" organic material over a depleted B horizon with 5% redoximorphic concentrations at 8"	Soil saturated to the surface, 1-2" standing water in pits

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
4	A084	D								red spruce*, common winterberry, mountain holly, speckled alder, withe-rod, cinnamon fern, three-seeded sedge	8-10" organic material over 6" very dark A horizon over very thin B horizon over bedrock	Soil saturated, standing water in pits, *trees on mounds
4	A085	D								northern white-cedar, balsam fir, red spruce, withe-rod, speckled alder, mountain holly, cinnamon fern, three-seeded sedge	Histosol	Soil saturated, water staining in pits
4	A086	D								balsam fir, cinnamon fern, three-seeded sedge, sharp-leaved nodding-aster	4-6" organic material over rock	Wetland drainage patterns, soil saturated to the surface
4	A087	D								balsam fir, red maple, gray birch, common winterberry, sheep American-laurel	6-8" organic matter mixed with a mucky A horizon over rock	Soil saturated, water stained leaves, standing water in pits
4	A088	D								balsam fir, red maple, gray birch, speckled alder, highbush blueberry, sheep American-laurel, cinnamon fern	6-10 inches of organic material over rock	Soil saturated to the surface
4	A089	D								balsam fir, common winterberry, highbush blueberry, speckled alder, sheep American-laurel, three-seeded sedge, cinnamon fern	8-10" of organic material over rock	Soil saturated to the surface, water staining
4	A090	D					10BE_N			red maple, balsam fir, gray birch, speckled alder, common winterberry, highbush blueberry, sheep American-laurel, cinnamon fern	Areas with 3-6" organic matter over depleted matrix with redoximorphic concentrations	Areas with 1-10" standing water
4	A091		D							red maple, common winterberry, rhodora, highbush blueberry, sheep American-laurel, cinnamon fern	6-10" organic material over a depleted B horizon with 5% redoximorphic concentrations at 8-10"	Water staining, soil saturated to the surface

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
4	A092	D						P-WL3		northern white-cedar, balsam fir, red spruce, red maple, common winterberry, three-seeded sedge, common soft rush, fowl manna grass, creeping spicky-wintergreen, cinnamon fern	Histosol	Areas with 1-2" standing water, soil saturated to the surface
4	A093	D						P-WL3		northern white-cedar, balsam fir, red spruce, red maple, common winterberry, three-seeded sedge, common soft rush, fowl manna grass, creeping spicky-wintergreen, cinnamon fern	Histosol	Areas with 1-2" standing water, soil saturated to the surface
4	A094	D						P-WL3		balsam fir, red spruce northern white-cedar, red maple, common winterberry, sheep American-laurel, three-seeded sedge, Canada dwarf-dogwood, cinnamon fern	Histosol	Areas with 2-6" standing water, soil saturated to the surface
4	A095	D						P-WL3	plots done	northern white-cedar, balsam fir, red spruce, common winterberry, three-seeded sedge, cinnamon fern	Histosol	Areas of standing water, soil saturated to the surface
4	A096	D					12BE_N	P-WL3		northern white-cedar, balsam fir, green ash, eastern hemlock, three-seeded sedge, peat moss	4-8" organic material over a depleted matrix (Mineral Histic)	Areas of standing water, soil saturated to the surface
4	A097	D	x	x			11BE_M	P-WL3		northern white-cedar, balsam fir, white meadowsweet, speckled alder, common winterberry, sensitive fern	Areas of histosol; areas with depleted matrix	Areas of standing water, soil saturated to the surface
4	A098			D				P-WL2a		common woolsedge, sedges, sensitive fern	4" thick dark A horizon over a depleted matrix	Soil saturated to the surface, wetland drainage patterns

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
4	A099		D		D		35CF_N	P-WL1c4, P-WL2a		common winterberry, rosy meadowsweet	Seasonally ponded	36" standing water
4	A100		D				34CF_N	P-WL1c4, P-WL2a		common winterberry, white meadowsweet, yellow birch, red spruce, red maple, green ash, balsam fir, gray birch, common woolsedge, three-seeded sedge	6" organic material over depleted matrix with redoximorphic concentrations	10-15" standing water
4	A101	D						P-WL3		northern white-cedar, red spruce, eastern hemlock, yellow birch, green ash, balsam fir, common winterberry, common woolsedge, three-seeded sedge, cinnamon fern, crested wood fern, peat moss	10-15" organic material over depleted matrix with redoximorphic concentrations (Histic Epipedon)	Areas of standing water, soil saturated to the surface
4	A102			D		S09		P-WL1c6, P-WL2a		fowl manna grass, common woolsedge, Canada reed grass, fringed willow-herb, bristly swamp currant, balsam fir, yellow birch	Areas with 6-8" dark A horizon over rock, area with depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface, wetland drainage patterns
4	A103			D		S09, S10		P-WL1c6, P-WL2a		fowl manna grass, common woolsedge, fringed willow-herb, bristly swamp currant, Canada reed grass, yellow birch	Areas with 6-8" dark A horizon over rock; area with depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface
4	A104			D				P-WL2a		fowl manna grass, common woolsedge, Canada reed grass, fringed willow-herb, bristly swamp currant, yellow birch	Areas with 6-8" dark A horizon over rock; area with depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface
4	A105	D				S10	33CF_M	P-WL1c6, P-WL3		northern white-cedar, yellow birch, balsam fir, eastern hemlock, common woolsedge, three-seeded sedge, fowl manna grass, cinnamon fern	4-8" organic material over depleted matrix with redoximorphic concentrations	Areas of standing water, soil saturated to the surface, wetland drainage patterns

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4, 5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
4	A106	D					01BB_N	P-WL3	potential vernal pool suspected significant	balsam fir, red maple, speckled alder, common winterberry, mountain holly, three-seeded sedge	8-12" organic material over bedrock	Soil saturated to the surface, water stained leaves, free water at surface (not inundated)
4	A107		x	D				P-SL2, P-WL2a	measure to see if 20,000 ft ²	three-way sedge, common winterberry, Canada dwarf-dogwood, speckled alder, cottonsedge, meadowsweet, three-seeded sedge, tussock sedge, balsam fir, rhodora, northern white-cedar, American larch	Histosol	Areas inundated, soil saturated to the surface, standing dead trees in the wettest area
4	A108	D				S11		P-WL1c6, P-WL3		balsam fir, northern white-cedar, cinnamon fern, drooping sedge, red maple	8" organic material over rock	Wetland drainage patterns, soil saturated at 3", water stained leaves
5	A109	x	D					P-WL2a		red maple, yellow birch, speckled alder, balsam fir	Soil disturbed by wash in from road and culvert. Loamy coarse sand with sand particles more than 70% coated with organic material. Refusal at 10"	Water stained leaves, observable water line on hummocks, free water at 2", soil saturated to the surface
5	A110		D					P-WL2a		red maple, gray birch, northern white-cedar, balsam fir, long-beaked willow, cinnamon fern, sensitive fern, rattlesnake manna grass, three-seeded sedge	3" A horizon over 6" depleted loamy coarse gravel, over 4" depleted soil with organic streaking over 4" very decomposed organic material. Refusal at hardpan.	Wetland drainage patterns, soil saturated at the surface, hydrogen sulfide odor
5	A111		D					P-WL2a	in old road	northern white-cedar, balsam fir, red maple, gray birch	3" very decomposed organic material over a depleted coarse sandy soil with few prominent redoximorphic concentrations.	Soil saturated at 2", water stained leaves
5	A112		D					P-WL2a		speckled alder, mountain holly, red maple, balsam fir, cinnamon fern, Canada dwarf-dogwood	4" organic material over 2" depleted fine gravel with organic coating 70% of the	Topographical depression, observable water line on hummocks,

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
										particles, refusal at rock.	water stained leaves	
4	A113	D						P-WL3		red spruce, balsam fir, speckled alder, common winterberry, three-seeded sedge, cinnamon fern	10+'' mucky organic material over a depleted loamy sand	Standing water, soil saturated
4	A114	D						P-WL3		northern white-cedar, balsam fir, red spruce, witherod, mountain holly, cinnamon fern, common wooldsedge	10-12'' organic material over a mucky A horizon over a depleted sandy soil (Histic epipedon)	Soil saturated to the surface, areas of standing water
4	A115			D				P-WL2a		cinnamon fern, meadowsweet, red raspberry	4'' organic material over a depleted matrix	Soil saturated to the surface
4	A116	D						P-WL3		red spruce, red maple, speckled alder, balsam fir, yellow birch, northern white-cedar, common wooldsedge, cinnamon fern, manna grass	8-12'' organic material over very rocky soil (Histic epipedon)	Areas of standing water
4	A117	D						P-WL3	Previously disturbed by harvest activity	northern white-cedar, balsam fir, speckled alder, red maple, witherod, cinnamon fern	Stripped matrix (E horizon) with depletions in a Bhs horizon at 10'' (Hydric spodosol)	Standing water in pits, soil saturated
4	A118	D				S16		P-SL2, P-WL1c6, P-WL3		northern white-cedar, red spruce, balsam fir, mountain holly, red maple, white meadowsweet, common winterberry, fowl manna grass, cinnamon fern, common soft rush	Deep mucky A horizon	Soil saturated, areas of standing water
4	A119	D	D	D				P-SL2, P-WL3, P-WL2a		northern white-cedar, red maple, balsam fir, yellow birch, speckled alder, witherod, rattlesnake manna grass, common soft rush, cinnamon fern, sensitive fern	no data	24+'' standing water in ditch basin, wetland drainage patterns
4	A120	D	x					P-WL3		no data	no data	no data
4	A121		D					P-WL2a		no data	no data	no data
4	A122	x	D					P-WL2a		no data	no data	no data
4	A123		D					P-		no data	no data	no data

Map #	Resource Identification Number	Wetland Type ^{1,2}				Stream ³	Vernal Pool	WPS ^{4,5}	Notes	Dominant Vegetation	Hydric Soil Indicators	Evidence of Hydrology
		PFO	PSS	PEM	PUB							
							WL2a					
4	A124	D	x				P-WL3		no data	no data	no data	
4	A125	D					P-WL3		no data	no data	no data	
4	A126	D					P-WL3		no data	no data	no data	
4	A127	x	D			S15	P-WL2a		no data	no data	no data	
4	A128	D				S15	P-WL3		no data	no data	no data	

¹ Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. FWS/OBS-79/31, USFWS, Office of Biological Services, Washington, D.C.

² D = Dominant; X = Present: As characterized here the community types represent only those communities present within delineation limits.

³ P = Perennial; I = Intermittent

⁴ P-WL1: Wetland Protection Subdistrict

- a) Areas enclosed by the normal high water mark of flowing waters, stream channels, and bodies of standing water, except for constructed ponds less than 10 acres in size which are not fed or drained by flowing waters;
- b) Coastal wetlands, together with areas below the high water mark of tidal waters and extending seaward to the limits of the State's jurisdiction; or
- c) Freshwater wetlands, as follows:
 - i) Within 250' of a coastal wetland or of the normal high water mark of any body of standing water greater than 10 acres;
 - ii) Containing at least 20,000 square feet in total of the following: aquatic vegetation, emergent marsh vegetation, or open water, unless the wetlands are the result of constructed ponds less than 10 acres in size which are not fed or drained by flowing waters;
 - iii) That are inundated with floodwater during a 100 year flood event;
 - iv) Containing significant wildlife habitat;
 - v) Consisting of, or containing, peatlands, except that LURC may determine that a previously mined, peatland or portion thereof, is not a wetland of special significance; or
 - vi) Within 25' of a stream channel.

P-WL2: Wetland Protection Subdistrict

- a) Scrub shrub and other non-forested freshwater wetlands, excluding those covered under P-WL1;
- b) Constructed ponds less than 10 acres in size which are not fed or drained by flowing waters.

P-WL3: Wetland Protection Subdistrict – Forested freshwater wetlands, excluding those covered under P-WL1 and P-WL2.

⁵ Wetlands and some streams identified within the Project area have an associated Shoreland Protection Subdistrict, P- SL2. P-SL2 includes: areas within 75 feet, measured as a horizontal distance landward, of (a) the normal high water mark of stream channels upstream for the point where such channels drain 50 square miles; (b) the upland edge of those coastal and inland wetlands identified in Section 10.23, N, 2, a, (1)(b) and (c) and (2) and (3); and (c) the normal high water mark of bodies of standing water less than 10 acres in size, but excluding bodies of standing water which are less than three acres in size and which are not fed or drained by a flowing water.

⁶ P-FP = Flood Prone Area Protection Subdistrict: Those areas identified and mapped by the Federal Emergency Management Agency as areas of special flood hazard (Zones A, AE, A1-30, VE) are those that fall within the P-FP subdistrict.

Table C-2: Stream Resource Table

Map Number	Stream Name	Stream Resource ID	Wetland Resource ID	Stream Name	Flow	Width
1	02BB	S01	A013	Colson Branch Stream	intermittent	12-24"
1	04BB	S02	-	-	intermittent	12-24"
1	03BB	S03	-	Colson Branch Stream	intermittent	12-24"
2	22CF	S04	A023	Unnamed Blue Line on USGS	intermittent	36"
2	21CF	S05	A031, A032	-	intermittent	12-24"
2	20cf	S06	A033, A032	-	intermittent	12-24"
3	10DD	S07	A037	-	perennial	10-15"
4	01MA	S08	A76	-	perennial	36-42"
4	23CF	S09	A102, A103	-	intermittent	12-24"
4	24CF	S10	A105	-	intermittent	24-36"
	23DD	S11	A107	-	intermittent	12"
	20DD	S12	-	-	intermittent	12-24"
	21DD	S13	-	-	intermittent	12-24"
	22DD	S14	-	-	intermittent	10-15"
4	04BB	S15	A022	-	perennial	24-36"
4	03MA	S16	A118	Unnamed Tributary to Austin's Dam Heath	perennial	48-60"

Table C-3: Vernal Pool Resource Table

Vernal Pool Identifier	Associated Wetland ID	NRPA		Corps Regulated Vernal Pool	Number of Egg Masses ¹						Presence ²		Comments
		Vernal Pool	SVP		Wood Frog		Spotted Salamander		Blue-Spotted Salamander		Fairy Shrimp	Other Indicator Species ³	
					V1	V2	V1	V2	V1	V2			
29CF_M	A001			x	3	-	11	-	0	-	-	-	anthropogenic pool: skidder rut
04AA_M	A001			x	6*	-	6	-	0	-	-	-	anthropogenic pool: skidder rut
30CF_M	A001			x	4	-	16	-	0	-	-	-	anthropogenic pool: skidder rut
05MG_M	A002			x	9*	-	4	-	0	-	-	-	anthropogenic pool: skidder rut. *tadpoles observed
04MG_M	A005			x	2	-	3	-	0	-	-	-	anthropogenic pool: skidder rut. *tadpoles observed
16CF_M	A006			x	4	-	6	-	0	-	-	-	anthropogenic pool: skidder rut
14CF_M	A008			x	7	-	0	-	0	-	-	-	anthropogenic pool: skidder rut
15CF_M	A008			x	3	-	4	-	0	-	-	-	anthropogenic pool
31CF_M	A008			x	12	-	1	-	0	-	-	-	anthropogenic pool: skidder rut
03MG_M*	A009		x**	x	18*	-	28	-	0	-	-	-	anthropogenic pool: skidder rut. **meets MDEP's significance criteria. *tadpoles observed
32CF_M	A010			x	3	-	0	-	0	-	-	-	anthropogenic pool: skidder rut. 1 adult wood frog observed
20CF_M	A010			x	24*	-	0	-	0	-	-	-	anthropogenic pool: skidder rut. *tadpoles observed
13CF_M	A010			x	13	-	0	-	0	-	-	-	anthropogenic pool

¹The headers V1 and V2 represent the results of the first and second site visits respectively.

²Presence indicates observation during vernal pool survey.

³BT = Blanding's Turtle; ST = Spotted Turtle; RB = Ringed Boghaunter Dragonfly; WT = Wood Turtle; RS = Ribbon Snake; SD = Swamp Darner Dragonfly; CD = Comet Darner Dragonfly

Vernal Pool Identifier	Associated Wetland ID	NRPA		Corps Regulated Vernal Pool	Number of Egg Masses ¹						Presence ²		Comments
		Vernal Pool	SVP		Wood Frog		Spotted Salamander		Blue-Spotted Salamander		Fairy Shrimp	Other Indicator Species ³	
					V1	V2	V1	V2	V1	V2			
03AA_M	A010			x	5	-	2	-	0	-	-	-	anthropogenic pool: skidder rut. *tadpoles observed. Adult female wood frog observed
21CF_M	A011			x	4*	-	8	-	0	-	-	-	anthropogenic pool. *tadpoles observed
12CF_M	A021			x	4	-	5	-	0	-	-	-	anthropogenic pool: skidder rut
09AA_M	A025			x	2*	-	18	-	0	-	-	-	anthropogenic pool: skidder rut. *tadpoles observed
10AA_M	A027			x	0	-	8	-	0	-	-	-	anthropogenic pool: skidder rut
16MG_M	A037			x	4	-	0	-	0	-	-	-	anthropogenic pool: skidder rut
19MG_M	A037			x	0*	-	4	-	0	-	-	-	anthropogenic pool: skidder rut. *tadpoles observed
20MG_M*	A037		x**	x	0	-	28	-	0	-	-	-	anthropogenic pool: skidder rut. **meets MDEP's significance criteria
21MG_M	A037			x	9	-	0	-	0	-	-	-	anthropogenic pool: skidder rut
19/41CF_M	A039			x	36	-	1	-	0	-	-	-	anthropogenic pool: skidder rut
14/36CF_M	A039			x	21	-	14	-	0	-	-	-	anthropogenic pool: skidder rut
15/37CF_M	A039			x	3	-	2	-	0	-	-	-	anthropogenic pool: skidder rut
16/38CF_N	A039	x		x	7	0	4	4	0	0	-	-	natural pool: tree tip-up. Water level significantly less at second visit

¹ The headers V1 and V2 represent the results of the first and second site visits respectively.

² Presence indicates observation during vernal pool survey.

³ BT = Blanding's Turtle; ST = Spotted Turtle; RB = Ringed Boghaunter Dragonfly; WT = Wood Turtle; RS = Ribbon Snake; SD = Swamp Darner Dragonfly; CD = Comet Darner Dragonfly

Vernal Pool Identifier	Associated Wetland ID	NRPA		Corps Regulated Vernal Pool	Number of Egg Masses ¹						Presence ²		Comments
		Vernal Pool	SVP		Wood Frog		Spotted Salamander		Blue-Spotted Salamander		Fairy Shrimp	Other Indicator Species ³	
					V1	V2	V1	V2	V1	V2			
17/39CF_M*	A039		x**	x	1*	0	45	30	0	0	-	-	anthropogenic pool: skidder ruts. **meets MDEP's significance criteria. *tadpoles observed
18/40CF_M	A039			x	6	-	14	-	0	-	-	-	anthropogenic pool
33/16CF_M	A039			x	4	-	6	-	0	-	-	-	anthropogenic pool: skidder rut
15MG_M	A042			x	14	-	0	-	0	-	-	-	anthropogenic pool: skidder rut
13MG_M	A53			x	0	-	8	-	0	-	-	-	anthropogenic pool: skidder rut. Additional ruts contain activity but are not within wetland boundary
12MG_N*	A58	x	x	x	147	0	0	>20	0	0	-	-	natural-modified: roadside
09MG_N*	A59	x	x	x	0*	0	41	48	0	0	-	-	natural-modified: skidder activity. *tadpoles observed
08MG_N*	A60	x	x	x	0	0	35	34	0	0	-	-	
20/42CF_N	A61	x		x	12	*	10	8-12	0	0	-	-	
11MG_N*	A64	x	x	x	17	0	0	49	0	0	-	-	natural-modified: skidder activity, tadpoles observed
01BE_N	A65	x		x	19	0	15	12	0	0	-	-	natural-modified: roadside
03BE_M	A67			x	0	-	2	-	0	-	-	-	anthropogenic pool: roadside ditch
02BE_N*	A68	x	x	x	12	0	66	29	0	0	-	-	natural-modified: roadside
10MG_M	A68			x	0*	-	9	-	0	-	-	-	anthropogenic pool: skidder rut. *tadpoles observed
04BE_N	A70	x		x	0	0	1	1	0	0	-	-	natural pool, water level dropping quickly

¹ The headers V1 and V2 represent the results of the first and second site visits respectively.

² Presence indicates observation during vernal pool survey.

³ BT = Blanding's Turtle; ST = Spotted Turtle; RB = Ringed Boghaunter Dragonfly; WT = Wood Turtle; RS = Ribbon Snake; SD = Swamp Darner Dragonfly; CD = Comet Darner Dragonfly

Vernal Pool Identifier	Associated Wetland ID	NRPA		Corps Regulated Vernal Pool	Number of Egg Masses ¹						Presence ²		Comments
		Vernal Pool	SVP		Wood Frog		Spotted Salamander		Blue-Spotted Salamander		Fairy Shrimp	Other Indicator Species ³	
					V1	V2	V1	V2	V1	V2			
05BE_M*	A71		x**	x	30	-	26	-	0	-	-	-	anthropogenic pool: roadside ditch. **meets MDEP's significance criteria
06BE_N	A72	x		x	0	0	3	0	0	0	-	-	natural pool, water level significantly less than at first visit
04DK_N	A73	x	PVP	x	-	-	-	-	-	-	-	-	potential vernal pool
03DK_N	A73	x	PVP	x	-	-	-	-	-	-	-	-	potential vernal pool
07BE_N	A74	x		x	14	0	14	14	0	0	-	-	natural pool, water level significantly less than at first visit
09BE_M	A82			x	0	-	10	-	0	-	-	-	anthropogenic pool: skidder rut
10BE_N	A90	x		x	2	0	18	15	0	0	-	-	water level significantly lower at second visit, one egg mass out of water
12BE_N	A96	x		x	0	-	5	-	0	-	-	-	natural-modified: adjacent to road
11BE_M*	A97		x**	x	0	0	41	39	1	0	-	-	anthropogenic pool: roadside ditch. **meets MDEP's significance criteria
13/35CF_N*	A99	x	x	x	217	*	226	241	135	16			
11/34CF_N*	A100	x	x	x	19	*	21	13	0	0	-	-	
10/33CF_M	A105			x	0	-	9	-	0	-	-	-	anthropogenic pool: skidder rut
01BB_N	A106	x	PVP	*	-	-	-	-	-	-	-	-	potential vernal pool

¹ The headers V1 and V2 represent the results of the first and second site visits respectively.

² Presence indicates observation during vernal pool survey.

³ BT = Blanding's Turtle; ST = Spotted Turtle; RB = Ringed Boghaunter Dragonfly; WT = Wood Turtle; RS = Ribbon Snake; SD = Swamp Darner Dragonfly; CD = Comet Darner Dragonfly

Table C-4: Plant Resource Table

Scientific name	Common name
<i>Abies balsamea</i>	balsam fir
<i>Acer pensylvanicum</i>	striped maple
<i>Acer rubrum</i>	red maple
<i>Agrostis stolonifera</i>	creeping bentgrass
<i>Alnus incana</i>	speckled alder
<i>Betula alleghaniensis</i>	yellow birch
<i>Betula populifolia</i>	gray birch
<i>Calamagrostis canadensis</i>	Canada reed grass
<i>Carex sp.</i>	sedge
<i>Carex crinita</i>	fringed sedge
<i>Carex gynandra</i>	nodding sedge
<i>Carex intumescens</i>	greater bladder sedge
<i>Carex scabrata</i>	eastern rough sedge
<i>Carex scoparia</i>	pointed broom sedge
<i>Carex lurida</i>	sallow sedge
<i>Carex trisperma</i>	three-seeded sedge
<i>Chamaepericlymenum canadense</i>	Canada dwarf-dogwood
<i>Chrysosplenium americanum</i>	golden-saxifrage
<i>Cinna latifolia</i>	slender wood-reed
<i>Comptonia peregrina</i>	sweet-fern
<i>Coptis trifolia</i>	three-leaved goldthread
<i>Doellingeria umbellata</i>	tall white-aster
<i>Dryopteris cristata</i>	crested wood fern
<i>Dryopteris intermedia</i>	evergreen wood fern
<i>Epilobium ciliatum</i>	fringed willow-herb
<i>Euthamia graminifolia</i>	common grass-leaved-goldenrod
<i>Fragaria virginiana</i>	Virginia strawberry
<i>Fraxinus pennsylvanica</i>	green ash
<i>Fraxinus americana</i>	white ash
<i>Gaultheria hispidula</i>	creeping spicy-wintergreen
<i>Gaultheria procumbens</i>	eastern spicy-wintergreen
<i>Glyceria canadensis</i>	rattlesnake manna grass
<i>Glyceria striata</i>	fowl manna grass
<i>Juncus effusus</i>	common soft rush
<i>Ilex verticillata</i>	common winterberry
<i>Kalmia angustifolia</i>	sheep American-laurel
<i>Larix laricina</i>	American larch
<i>Matteuccia struthiopteris</i>	fiddlehead fern
<i>Osmunda cinnamomea</i>	cinnamon fern

Scientific name	Common name
<i>Parathelypteris noveboracensis</i>	New York fern
<i>Picea mariana</i>	black spruce
<i>Picea rubens</i>	red spruce
<i>Pinus resinosa</i>	red pine
<i>Pinus strobus</i>	eastern white pine
<i>Populus tremuloides</i>	quaking poplar
<i>Pteridium aquilinum</i>	bracken fern
<i>Oclemena acuminata</i>	sharp-toothed nodding-aster
<i>Onoclea sensibilis</i>	sensitive fern
<i>Osmunda cinnamomea</i>	cinnamon fern
<i>Osmunda claytoniana</i>	interrupted fern
<i>Osmunda regalis</i>	royal fern
<i>Oxalis montana</i>	northern wood sorrel
<i>Ribes lacustre</i>	bristly swamp currant
<i>Rubus hispidus</i>	bristly blackberry
<i>Rubus idaeus</i>	red raspberry
<i>Rubus pubescens</i>	dwarf raspberry
<i>Scirpus cyperinus</i>	common woolsedge
<i>Solidago rugosa</i>	common wrinkle-leaved goldenrod
<i>Spiraea alba</i>	white meadowsweet
<i>Spiraea tomentosa</i>	rosy meadowsweet
<i>Swida amomum</i>	silky dogwood
<i>Thuja occidentalis</i>	northern white-cedar
<i>Trientalis borealis</i>	starflower
<i>Tsuga canadensis</i>	eastern hemlock
<i>Ulmus americana</i>	American elm
<i>Vaccinium angustifolium</i>	common lowbush blueberry
<i>Vaccinium corymbosum</i>	highbush blueberry
<i>Viola sp.</i>	violet
<i>Viola pallens</i>	smooth white violet

Appendix D

LURC Land Use Guidance Map

Land Use Guidance Map

T16 MD BPP

Hancock County



Maine Department of Conservation
 LAND USE REGULATION COMMISSION
 Augusta, Maine 04333-0022
 (207) 287-2631
 TTY (207) 287-2213
<http://www.state.me.us/doc/lurc>

Legend

Development Subdistricts

D-CI Commercial/Industrial

Protection Subdistricts

- P-GP Great Pond
- P-SL1 250 feet Shoreland – Major
- P-SL2 75 feet Shoreland – Minor
- P-WL1 Wetlands – Significant
- P-WL2 Wetlands – Scrub-shrub
- P-WL3 Wetlands – Forested

Management Subdistricts

M-GN General

Water body

- Improved road
- Unimproved road
- Trail

Areas designated as two or more protection zones are annotated with each zone, e.g. P-FP/FW/WL1, P-FP/SL1, etc., where necessary

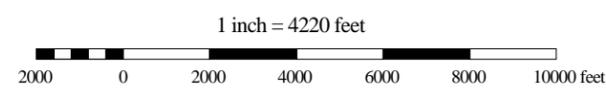
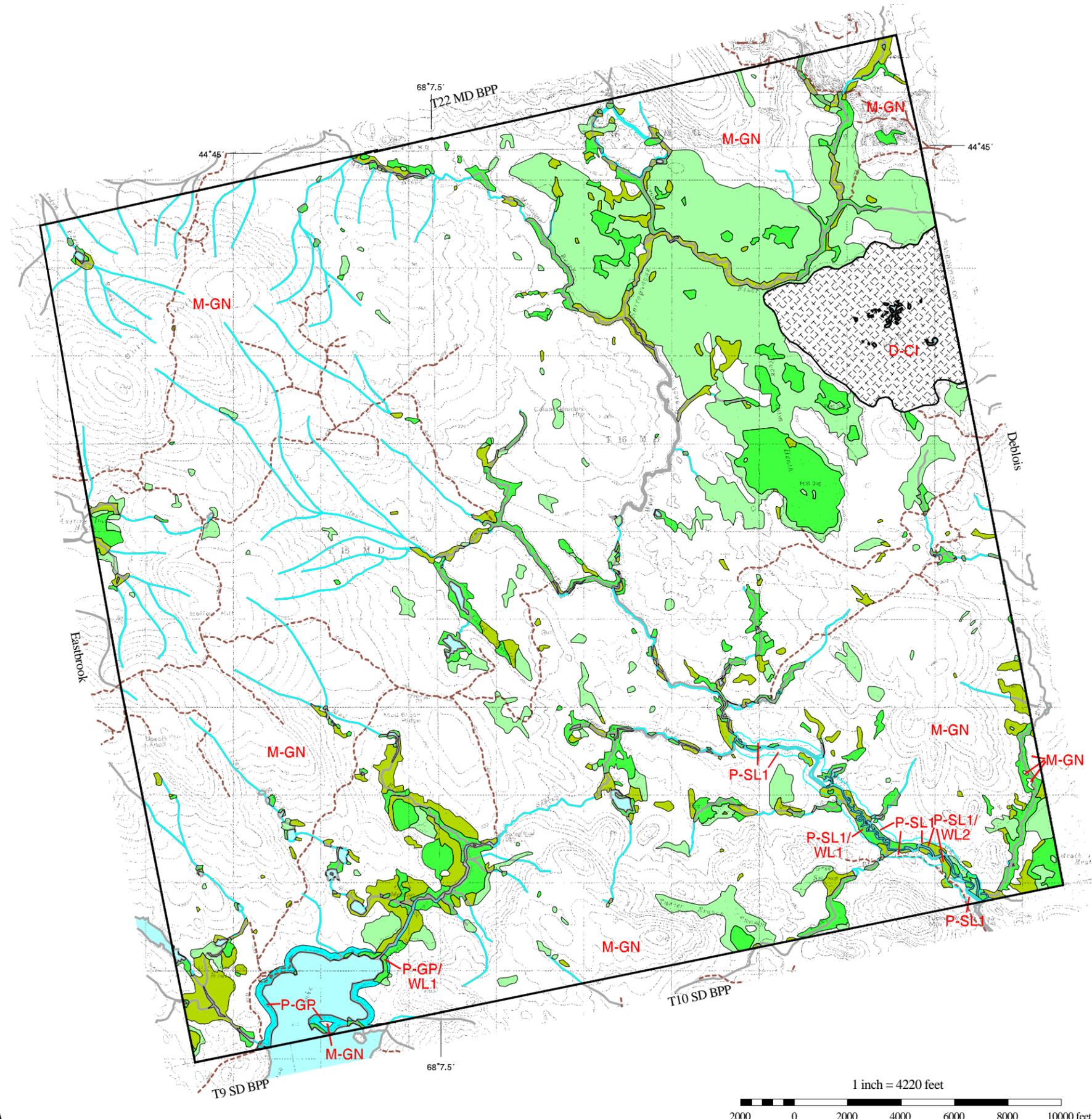
- or Subdistrict boundary
- Zoning amendment

Topographic base, roads and trails from U.S. Geological Survey 7.5-minute map series

For the purpose of simplicity, this map does not show the Wetland Protection Subdistricts for areas identified pursuant to Section 10.16,K.2 such as beds of rivers, lakes, and other water bodies, and freshwater wetlands within 25 feet of stream channels, which are nevertheless within P-WL Subdistricts.

This map is a reduced version of the official Land Use Guidance Map. It is not certified to be a true and correct copy. Full size official LURC Land Use Guidance Maps are available from the Commission at its Augusta office. Potential applicants unsure of their zoning should request a full size map from the Augusta office.

Land Use Guidance Map last amended on August 18, 2005



Appendix E

Representative Site Photographs



Photo 1. LURC intermittent stream S06.
Stantec Consulting, April 16, 2010.



Photo 2. LURC intermittent stream S04.
Stantec Consulting, November 30, 2009.



Photo 3. LURC intermittent stream S09.
Stantec Consulting, April 16, 2010.



Photo 4. Man-made vernal pool 32CF_M.
Stantec Consulting, April 12, 2010.



Photo 5. Natural vernal pool 13CF_M.
Stantec Consulting, April 12, 2010.



Photo 6. Natural vernal pool 16CF_M.
Stantec Consulting, April 12, 2010.



Photo 7. Natural vernal pool 20CF_M.
Stantec Consulting, April 12, 2010.



Photo 8. Natural vernal pool 07BE_N.
Stantec Consulting, April 12, 2010.



Photo 9. Natural vernal pool 10BE_N.
Stantec Consulting, April 12, 2010.



Photo 10. Typical emergent wetland A006.
Stantec Consulting, November 30, 2009.



Photo 11. Typical emergent wetland A005.
Stantec Consulting, November 30, 2009.



Photo 12. Typical emergent wetland A002.
Stantec Consulting, November 30, 2009.



Photo 13. Typical emergent wetland A071.
Stantec Consulting, December 2, 2009.



Photo 14. LURC perennial stream S08.
Stantec Consulting, December 2, 2009.



Photo 15. Mixed forested and emergent wetland A023.
Stantec Consulting, November 30, 2009.



Photo 15. Typical forested wetland A009.
Stantec Consulting, November 30, 2009.



Photo 16. Typical hardwood forested wetland A067.
Stantec Consulting, November 30, 2009.



Photo 17. Typical scrub-shrub wetland A100.
Stantec Consulting, April 12, 2010.



Photo 18. Typical hardwood scrub-shrub wetland A061.
Stantec Consulting, April 28, 2010.



Photo 19. Typical unconsolidated bottom wetland A058.
Stantec Consulting, December 2, 2009.

Appendix F

Vernal Pool Data Sheets

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

Project Name/ #: Bull Hill Organization Name: Stantec Consulting Pool ID: 01BE

Observer Contact Information

Primary Observer (include secondary, if applicable) : Bryan Emerson Phone or Email 207-729-1199

Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____

Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____

Street Address: 179 Lincoln St. City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant (include notes in section 3d on Page 2)	<input checked="" type="checkbox"/> Not significant due to:	<input checked="" type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock County, Maine

Brief site directions to the pool (using mapped landmarks): _____ within 1000ft from existing carriage path _____

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No

Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1579W, 44.7020N

GPS-location of pool perimeter included as polygon shapefile named* _____

Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.

** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

*** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression Pool associated with larger wetland complex

Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland Wet meadow Slow stream

Shrub wetland Shallow pond Floodplain overflow / Oxbow

Peatland (acidic fen or bog) Abandoned beaver flowage Headwater seepage

Emergent marsh Active beaver flowage Other:

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

b. Vernal Pool Origin or Impacts

i. Pool's Origin: Natural Natural-Modified Non-Natural Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

April 14, 2010

Page 1 of 2

3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 01 BE

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 50 m ft (check one) Length 20 m ft (check one)
- Maximum depth at time of survey: 18 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 4/21/10, 5/4/10

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	4/21/1	5/4/1	4/21/1	5/4/10	4/21/1	5/4/10	4/21/1	5/4/10	4/21/10	5/4/10	4/21/1	5/4/10
Wood frog		19	0	S	NA	3	3	F	H	NA	S	NA	3
Spotted Salamander		15	12	S	S	3	3	F	M	NA	NA	NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA						
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Bryan Emerson Date 10/7/2010

For MDIF&W Use Only:

Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

- Significant Potentially significant but lacking critical data Not significant due to: does not meet biological criteria and/or

Maine Association of Wetland Scientists (MAWS)

Vernal Pool Data Collection Form

Project Name/#: Bull Hill **Organization Name:** Stantec Consulting **Pool ID:** 02 BE

Observer Contact Information

Primary Observer (include secondary, if applicable) : Bryan Emerson Phone or Email 207-729-1199

Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____

Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____

Street Address: 179 Lincoln St. City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input checked="" type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> Not significant due to:	<input checked="" type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock County, Maine

Brief site directions to the pool (using mapped landmarks): _____ within 1000ft from existing carriage path _____

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No

Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1557W, 44.7061N

GPS-location of pool perimeter included as polygon shapefile named* _____

Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.

** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

*** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression Pool associated with larger wetland complex
 Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested wetland | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input checked="" type="checkbox"/> Shrub wetland | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow / Oxbow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: |

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- | | |
|--|---|
| <input type="checkbox"/> Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) | <input checked="" type="checkbox"/> Sphagnum moss (anchored or suspended) |
| <input type="checkbox"/> Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) | <input checked="" type="checkbox"/> Wet site ferns (e.g. royal fern, marsh fern) |
| <input type="checkbox"/> Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) | <input checked="" type="checkbox"/> Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail) |
| <input type="checkbox"/> Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) | <input type="checkbox"/> Aquatic vascular spp. (e.g. pickerelweed, arrowhead) |
| | <input type="checkbox"/> Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort) |

b. Vernal Pool Origin or Impacts

i. Pool's Origin: Natural Natural-Modified Non-Natural Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

April 14, 2010

Page 1 of 2

3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 02 BE

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 60 m ft (check one) Length 40 m ft (check one)
- Maximum depth at time of survey: 21 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 4/21/10, 5/4/10

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	4/21/1	5/4/1	4/21/1	5/4/10	4/21/1	5/4/10	4/21/1	5/4/10	4/21/10	5/4/10	4/21/1	5/4/10
Wood frog		12	0	S	NA	3	3	F	H	NA	S	NA	3
Spotted Salamander		66	0	S	S	3	3	F	M	NA	NA	NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA						
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Bryan Emerson Date 10/7/2010

For MDIF&W Use Only: Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

Maine Association of Wetland Scientists (MAWS)

Vernal Pool Data Collection Form

Project Name/#: Bull Hill **Organization Name:** Stantec Consulting **Pool ID:** 04 BE

Observer Contact Information

Primary Observer (include secondary, if applicable) : Bryan Emerson Phone or Email 207-729-1199

Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____

Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____

Street Address: 179 Lincoln St. City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> Not significant due to:	<input checked="" type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock County, Maine

Brief site directions to the pool (using mapped landmarks): _____ within 1000ft from existing carriage path _____

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No

Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1540W, 44.7061N

GPS-location of pool perimeter included as polygon shapefile named* _____

Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.

** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

*** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression Pool associated with larger wetland complex
 Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland Wet meadow Slow stream
 Shrub wetland Shallow pond Floodplain overflow / Oxbow
 Peatland (acidic fen or bog) Abandoned beaver flowage Headwater seepage
 Emergent marsh Active beaver flowage Other: _____

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Sphagnum moss (anchored or suspended)
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) Wet site ferns (e.g. royal fern, marsh fern)
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

b. Vernal Pool Origin or Impacts

i. Pool's Origin: **Natural** **Natural-Modified** **Non-Natural** **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 04BE

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 10 m ft (check one) Length 10 m ft (check one)
- Maximum depth at time of survey: 6 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 4/22/10, 5/4/10

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10
Wood frog		3	1	S	S	3	3	F	M	NA	NA	NA	NA
Spotted Salamander		6	0	S	NA	3	NA	F	NA	NA	NA	NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Bryan Emerson Date 10/7/2010

For MDIF&W Use Only:

Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

- Significant Potentially significant but lacking critical data Not significant due to: does not meet biological criteria and/or does not meet definition criteria

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

Project Name/#: Bull Hill **Organization Name:** Stantec Consulting **Pool ID:** 06 BE

Observer Contact Information

Primary Observer (include secondary, if applicable) : Bryan Emerson Phone or Email 207-729-1199

Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____

Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____

Street Address: 179 Lincoln St. City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> Not significant due to:	<input checked="" type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock County, Maine

Brief site directions to the pool (using mapped landmarks): within 1000ft from existing carriage path

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No

Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1540W, 44.7077N

GPS-location of pool perimeter included as polygon shapefile named* _____

Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.

** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

*** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression Pool associated with larger wetland complex
 Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:

- | | | |
|---|---|--|
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input checked="" type="checkbox"/> Shrub wetland | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow / Oxbow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- | | |
|--|---|
| <input type="checkbox"/> Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) | <input checked="" type="checkbox"/> Sphagnum moss (anchored or suspended) |
| <input type="checkbox"/> Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) | <input checked="" type="checkbox"/> Wet site ferns (e.g. royal fern, marsh fern) |
| <input type="checkbox"/> Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) | <input checked="" type="checkbox"/> Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail) |
| <input type="checkbox"/> Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) | <input type="checkbox"/> Aquatic vascular spp. (e.g. pickerelweed, arrowhead) |
| | <input type="checkbox"/> Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort) |

b. Vernal Pool Origin or Impacts

i. Pool's Origin: **Natural** **Natural-Modified** **Non-Natural** **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 06BE

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 20 m ft (check one) Length 20 m ft (check one)
- Maximum depth at time of survey: 10 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 4/22/10, 5/4/10

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10
Wood frog		0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spotted Salamander		3	0	S	NA	3	NA	F	NA	NA	NA	NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Bryan Emerson Date 10/7/2010

For MDIF&W Use Only:

Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

- Significant Potentially significant but lacking critical data Not significant due to: does not meet biological criteria and/or does not meet definition criteria

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

Project Name/ #: Bull Hill Organization Name: Stantec Consulting Pool ID: 07BE

Observer Contact Information

Primary Observer (include secondary, if applicable) : Bryan Emerson Phone or Email 207-729-1199

Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____

Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____

Street Address: 179 Lincoln St. City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant (include notes in section 3d on Page 2)	<input checked="" type="checkbox"/> Not significant due to:	<input checked="" type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock County, Maine

Brief site directions to the pool (using mapped landmarks): _____ within 1000ft from existing carriage path _____

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No

Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1529, 44.7089N

GPS-location of pool perimeter included as polygon shapefile named* _____

Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.

** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

*** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression Pool associated with larger wetland complex

Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland Wet meadow Slow stream

Shrub wetland Shallow pond Floodplain overflow / Oxbow

Peatland (acidic fen or bog) Abandoned beaver flowage Headwater seepage

Emergent marsh Active beaver flowage Other:

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

b. Vernal Pool Origin or Impacts

i. Pool's Origin: Natural Natural-Modified Non-Natural Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

April 14, 2010

Page 1 of 2

3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 07BE

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 30 m ft (check one) Length 30 m ft (check one)
- Maximum depth at time of survey: 12 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 4/22/10, 5/4/10

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	4/22/1	5/4/1	4/22/1	5/4/10	4/22/1	5/4/10	4/22/1	5/4/10	4/22/10	5/4/10	4/22/1	5/4/10
Wood frog		14	0	S	NA	3	NA	F	H	NA	S	NA	3
Spotted Salamander		14	14	S	S	3	3	F	M	NA	NA	NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA						
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Bryan Emerson Date 10/7/2010

For MDIF&W Use Only:

Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

- Significant Potentially significant but lacking critical data Not significant due to: does not meet biological criteria and/or

Maine Association of Wetland Scientists (MAWS)

Vernal Pool Data Collection Form

Project Name/#: Bull Hill **Organization Name:** Stantec Consulting **Pool ID:** 08 MG

Observer Contact Information

Primary Observer (include secondary, if applicable) : Michael Glessner _____ Phone or Email 207-729-1199

Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____

Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____

Street Address: 179 Lincoln St. City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input checked="" type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> Not significant due to:	<input type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock, Maine

Brief site directions to the pool (using mapped landmarks): _____ within 1000ft from existing carriage path _____

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No

Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1538W, 44.6999N

GPS-location of pool perimeter included as polygon shapefile named* _____

Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.

** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

*** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression Pool associated with larger wetland complex
 Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland Wet meadow Slow stream
 Shrub wetland Shallow pond Floodplain overflow / Oxbow
 Peatland (acidic fen or bog) Abandoned beaver flowage Headwater seepage
 Emergent marsh Active beaver flowage Other: _____

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Sphagnum moss (anchored or suspended)
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) Wet site ferns (e.g. royal fern, marsh fern)
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

b. Vernal Pool Origin or Impacts

i. Pool's Origin: **Natural** **Natural-Modified** **Non-Natural** **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: **08MG**

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 50 m ft (check one) Length 85 m ft (check one)
- Maximum depth at time of survey: 36 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 5/18/09, 6/4/09

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09
Wood frog		0	0	NA	NA	NA	NA	NA	NA	NA	S	NA	3
Spotted Salamander		35	34	S	S	3	3	M	M	NA	NA	NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Michael Glessner Date 10/7/2010

For MDIF&W Use Only:

Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

- Significant Potentially significant but lacking critical data Not significant due to: does not meet biological criteria and/or does not meet definition criteria

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

Project Name/#: Bull Hill **Organization Name:** Stantec Consulting **Pool ID:** 09 MG

Observer Contact Information

Primary Observer (include secondary, if applicable) : Michael Glessner _____ Phone or Email 207-729-1199

Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____

Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____

Street Address: 179 Lincoln St. City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input checked="" type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> Not significant due to:	<input type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock, Maine

Brief site directions to the pool (using mapped landmarks): _____ within 1000ft from existing carriage path _____

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No

Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1545W, 44.7008N

GPS-location of pool perimeter included as polygon shapefile named* _____

Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.

** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

*** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression Pool associated with larger wetland complex
 Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland Wet meadow Slow stream
 Shrub wetland Shallow pond Floodplain overflow / Oxbow
 Peatland (acidic fen or bog) Abandoned beaver flowage Headwater seepage
 Emergent marsh Active beaver flowage Other: _____

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Sphagnum moss (anchored or suspended)
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) Wet site ferns (e.g. royal fern, marsh fern)
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

b. Vernal Pool Origin or Impacts

i. Pool's Origin: Natural Natural-Modified Non-Natural Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 09 MG

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 35 m ft (check one) Length 100 m ft (check one)
- Maximum depth at time of survey: 36 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 5/18/09, 6/4/09

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09
Wood frog		20+	0	S	NA	3	NA	H	H	S	S	3	3
Spotted Salamander		41	48	S	S	3	3	M	M	NA	NA	NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Michael Glessner Date 10/7/2010

For MDIF&W Use Only:

Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

- Significant Potentially significant but lacking critical data Not significant due to: does not meet biological criteria and/or does not meet definition criteria

Maine Association of Wetland Scientists (MAWS)

Vernal Pool Data Collection Form

Project Name/#: Bull Hill **Organization Name:** Stantec Consulting **Pool ID:** 10BE

Observer Contact Information

Primary Observer (include secondary, if applicable) : Bryan Emerson Phone or Email 207-729-1199

Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____

Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____

Street Address: 179 Lincoln St. City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> Not significant due to:	<input checked="" type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock County, Maine

Brief site directions to the pool (using mapped landmarks): _____ within 1000ft from existing carriage path _____

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No

Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1542W, 44.7155N

GPS-location of pool perimeter included as polygon shapefile named* _____

Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.

** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

*** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression Pool associated with larger wetland complex
 Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland Wet meadow Slow stream
 Shrub wetland Shallow pond Floodplain overflow / Oxbow
 Peatland (acidic fen or bog) Abandoned beaver flowage Headwater seepage
 Emergent marsh Active beaver flowage Other:

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Sphagnum moss (anchored or suspended)
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) Wet site ferns (e.g. royal fern, marsh fern)
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

b. Vernal Pool Origin or Impacts

i. Pool's Origin: **Natural** **Natural-Modified** **Non-Natural** **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

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3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 10BE

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 30 m ft (check one) Length 30 m ft (check one)
- Maximum depth at time of survey: 18 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 4/22/10, 5/4/10

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10
Wood frog		2	0	S	NA	3	NA	F	H	NA	S	NA	3
Spotted Salamander		18	15	S	S	3	3	F	F	NA	NA	NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Bryan Emerson Date 10/7/2010

For MDIF&W Use Only: Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

Project Name/ #: Bull Hill Organization Name: Stantec Consulting Pool ID: 11CF

Observer Contact Information

Primary Observer (include secondary, if applicable) : Charles Ferris Phone or Email 207-729-1199

Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____

Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____

Street Address: 179 Lincoln St. City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input checked="" type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant (include notes in section 3d on Page 2)	<input type="checkbox"/> Not significant due to:	<input type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock County, Maine

Brief site directions to the pool (using mapped landmarks): _____ within 1000ft from existing carriage path _____

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No

Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1612W, 44.7211N

GPS-location of pool perimeter included as polygon shapefile named* _____

Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.

** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

*** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression Pool associated with larger wetland complex

Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland Wet meadow Slow stream

Shrub wetland Shallow pond Floodplain overflow / Oxbow

Peatland (acidic fen or bog) Abandoned beaver flowage Headwater seepage

Emergent marsh Active beaver flowage Other:

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

b. Vernal Pool Origin or Impacts

i. Pool's Origin: Natural Natural-Modified Non-Natural Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

April 14, 2010

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3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 11CF

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 50 m ft (check one) Length 100 m ft (check one)
- Maximum depth at time of survey: 15 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 4/15/10, 5/3/10

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)						Tadpoles/Larvae					
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	4/15/10	5/3/10	4/15/10	5/3/10	4/15/10	5/3/10	4/15/10	5/3/10	4/15/10	5/3/10	4/15/10	5/3/10
Wood frog		19	0	S	NA	3	NA	F	H	NA	S	NA	3
Spotted Salamander		21	13	S	S	3	3	F	F	NA	NA	NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Charles Ferris Date 10/7/2010

For MDIF&W Use Only: Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

Maine Association of Wetland Scientists (MAWS)

Vernal Pool Data Collection Form

Project Name/#: Bull Hill **Organization Name:** Stantec Consulting **Pool ID:** 11 MG

Observer Contact Information

Primary Observer (include secondary, if applicable) : Michael Glessner _____ Phone or Email 207-729-1199

Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____

Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____

Street Address: 179 Lincoln St City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input checked="" type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> Not significant due to:	<input type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock, Maine

Brief site directions to the pool (using mapped landmarks): _____ within 1000ft from existing carriage path _____

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No

Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1559W, 44.7008N

GPS-location of pool perimeter included as polygon shapefile named* _____

Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.

** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

*** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression Pool associated with larger wetland complex
 Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland Wet meadow Slow stream
 Shrub wetland Shallow pond Floodplain overflow / Oxbow
 Peatland (acidic fen or bog) Abandoned beaver flowage Headwater seepage
 Emergent marsh Active beaver flowage Other: _____

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Sphagnum moss (anchored or suspended)
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) Wet site ferns (e.g. royal fern, marsh fern)
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

b. Vernal Pool Origin or Impacts

i. Pool's Origin: Natural Natural-Modified Non-Natural Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 11 MG

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 70 m ft (check one) Length 120 m ft (check one)
- Maximum depth at time of survey: 60 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 5/18/09, 6/4/09

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09
Wood frog		7+	0	S/H	NA	3	NA	H	NA	S	S	3	3
Spotted Salamander		0	49	NA	S	NA	3	NA	M	NA	NA	NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Michael Glessner Date 10/7/2010

For MDIF&W Use Only:

Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

- Significant Potentially significant but lacking critical data Not significant due to: does not meet biological criteria and/or does not meet definition criteria

Maine Association of Wetland Scientists (MAWS)

Vernal Pool Data Collection Form

Project Name/#: Bull Hill **Organization Name:** Stantec Consulting **Pool ID:** 12 BE

Observer Contact Information

Primary Observer (include secondary, if applicable) : Bryan Emerson Phone or Email 207-729-1199

Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____

Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____

Street Address: 179 Lincoln St. City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> Not significant due to:	<input checked="" type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock County, Maine

Brief site directions to the pool (using mapped landmarks): _____ within 1000ft from existing carriage path _____

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No

Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1577W, 44.7200N

GPS-location of pool perimeter included as polygon shapefile named* _____

Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.

** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

*** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression Pool associated with larger wetland complex

Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland Wet meadow Slow stream

Shrub wetland Shallow pond Floodplain overflow / Oxbow

Peatland (acidic fen or bog) Abandoned beaver flowage Headwater seepage

Emergent marsh Active beaver flowage Other:

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

b. Vernal Pool Origin or Impacts

i. Pool's Origin: Natural Natural-Modified Non-Natural Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

April 14, 2010

Page 1 of 2

3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 12BE

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 10 m ft (check one) Length 10 m ft (check one)
- Maximum depth at time of survey: 18 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 4/22/10, 5/4/10

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)						Tadpoles/Larvae					
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10	4/22/10	5/4/10
Wood frog		0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spotted Salamander		5	39	S	S	3	3	F	F	NA	NA	NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Bryan Emerson Date 10/7/2010

For MDIF&W Use Only: Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

Project Name/#: Bull Hill Organization Name: Stantec Consulting Pool ID: 12 MG

Observer Contact Information

Primary Observer (include secondary, if applicable) : Michael Glessner Phone or Email 207-729-1199
Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____
Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____
Street Address: 179 Lincoln St. City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input checked="" type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> Not significant due to:	<input type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock, Maine
Brief site directions to the pool (using mapped landmarks): _____ within 1000ft from existing carriage path _____

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No
Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1560W, 44.6996N
 GPS-location of pool perimeter included as polygon shapefile named* _____
 Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.

** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

*** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression Pool associated with larger wetland complex
 Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland Wet meadow Slow stream
 Shrub wetland Shallow pond Floodplain overflow / Oxbow
 Peatland (acidic fen or bog) Abandoned beaver flowage Headwater seepage
 Emergent marsh Active beaver flowage Other:

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Sphagnum moss (anchored or suspended)
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) Wet site ferns (e.g. royal fern, marsh fern)
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

b. Vernal Pool Origin or Impacts

i. Pool's Origin: Natural Natural-Modified Non-Natural Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 12MG

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 35 m ft (check one) Length 90 m ft (check one)
- Maximum depth at time of survey: 36 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 5/18/09, 6/4/09

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09	5/18/09	6/4/09
Wood frog		147	0	S	NA	3	NA	F	NA	NA	S	NA	3
Spotted Salamander		0	20+	NA	S	NA	3	NA	M	NA	NA	NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Michael Glessner Date 10/7/2010

For MDIF&W Use Only:

Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

- Significant Potentially significant but lacking critical data Not significant due to: does not meet biological criteria and/or does not meet definition criteria

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

Project Name/#: Bull Hill **Organization Name:** Blue Sky LLC **Pool ID:** 13CF

Observer Contact Information

Primary Observer (include secondary, if applicable) : Charles Ferris Phone or Email 207-729-1199
 Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____
 Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____
 Street Address: 179 Lincoln St. City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input checked="" type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant <small>(include notes in section 3d on Page 2)</small>	<input type="checkbox"/> Not significant due to:	<input type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock County, Maine
 Brief site directions to the pool (using mapped landmarks): _____ within 1000ft from existing carriage path _____

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)
 Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No
 Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1524W, 44.7207N
 GPS-location of pool perimeter included as polygon shapefile named* _____
 Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.
 ** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.
 *** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:
 Isolated Upland Depression Pool associated with larger wetland complex
 Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:
 Forested wetland Wet meadow Slow stream
 Shrub wetland Shallow pond Floodplain overflow / Oxbow
 Peatland (acidic fen or bog) Abandoned beaver flowage Headwater seepage
 Emergent marsh Active beaver flowage Other: _____

iii. Predominate substrate in order of increasing hydroperiod:
 Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):
 Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Sphagnum moss (anchored or suspended)
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) Wet site ferns (e.g. royal fern, marsh fern)
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

b. Vernal Pool Origin or Impacts

i. Pool's Origin: **Natural** **Natural-Modified** **Non-Natural** **Unknown**
 • Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

April 14, 2010

Page 1 of 2

3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 13CF

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 50 m ft (check one) Length 100 m ft (check one)
- Maximum depth at time of survey: 15 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 4/15/10, 5/3/10

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)						Tadpoles/Larvae					
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	4/15/10	5/3/10	4/15/10	5/3/10	4/15/10	5/3/10	4/15/10	5/3/10	4/15/10	5/3/10	4/15/10	5/3/10
Wood frog		226	0	S	NA	3	NA	F	H	NA	S	NA	3
Spotted Salamander		217	241	S	S	3	3	F	F	NA	NA	NA	NA
Blue-spotted Salamander		135	15	S	S	3	3	F	A/H	NA	NA	NA	NA
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Charles Ferris Date 10/7/2010

For MDIF&W Use Only: Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

Project Name/#: Bull Hill **Organization Name:** Stantec Consulting **Pool ID:** 16CF

Observer Contact Information

Primary Observer (include secondary, if applicable) : Charles Ferris Phone or Email 207-729-1199
 Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____
 Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____
 Street Address: 179 Lincoln St. City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant <small>(include notes in section 3d on Page 2)</small>	<input checked="" type="checkbox"/> Not significant due to:	<input checked="" type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock County, Maine
 Brief site directions to the pool (using mapped landmarks): _____ within 1000ft from existing carriage path _____

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No
 Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1687W, 44.6934N
 GPS-location of pool perimeter included as polygon shapefile named* _____
 Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.

** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

*** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

- Isolated Upland Depression Pool associated with larger wetland complex
 Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:

- Forested wetland Wet meadow Slow stream
 Shrub wetland Shallow pond Floodplain overflow / Oxbow
 Peatland (acidic fen or bog) Abandoned beaver flowage Headwater seepage
 Emergent marsh Active beaver flowage Other: _____

iii. Predominate substrate in order of increasing hydroperiod:

- Mineral soil (bare, leaf-litter bottom, or upland mosses present)
 Mineral soil (sphagnum moss present)
 Organic matter (peat/muck) shallow or restricted to deepest portion
 Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

- Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Sphagnum moss (anchored or suspended)
 Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) Wet site ferns (e.g. royal fern, marsh fern)
 Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)
 Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)
 Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

b. Vernal Pool Origin or Impacts

i. Pool's Origin: **Natural** **Natural-Modified** **Non-Natural** **Unknown**

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 16CF

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 7 m ft (check one) Length 7 m ft (check one)
- Maximum depth at time of survey: 6 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 4/15/10, 5/3/10

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	4/15/10	5/3/10	4/15/10	5/3/10	4/15/10	5/3/10	4/15/10	5/3/10	4/15/10	5/3/10	4/15/10	5/3/10
Wood frog		7	0	S	NA	3	NA	F	NA	NA	NA	NA	NA
Spotted Salamander		4	4	S	S	3	3	F	A/F	NA	NA	NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	A/H	NA	NA	NA	NA
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Charles Ferris Date 10/7/2010

For MDIF&W Use Only:

Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

- Significant Potentially significant but lacking critical data Not significant due to: does not meet biological criteria and/or does not meet definition criteria

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

Project Name/ #: Bull Hill Organization Name: Stantec Consulting Pool ID: 20 CF

Observer Contact Information

Primary Observer (include secondary, if applicable) : Charles Ferris Phone or Email 207-729-1199

Primary Observer has Submitted the MAWS VP Credential Form: Previously Submitted Included w/this Submission

Landowner Contact Information

Landowner permission obtained for this survey & submission: Yes No Notes: _____

Landowner contact information (REQUIRED): Name: Blue Sky LLC Phone: _____

Street Address: 179 Lincoln St. City: Boston State: MA Zip: 02111

1. OBSERVER RECOMMENDATION

This pool is:	<input type="checkbox"/> Significant	<input type="checkbox"/> Potentially Significant (include notes in section 3d on Page 2)	<input checked="" type="checkbox"/> Not significant due to:	<input checked="" type="checkbox"/> does not meet MDEP SVP biological criteria
				<input type="checkbox"/> does not meet MDEP vernal pool definition criteria
				Notes:

2. VERNAL POOL LOCATION INFORMATION

Municipality or Township: Eastbrook/ Hancock County, Maine

Brief site directions to the pool (using mapped landmarks): _____ within 1000ft from existing carriage path _____

Location of Vernal Pool* (Required Coordinate System, Datum and Units: UTM, NAD83, Zone 19 North, meters)

Brand and Model of GPS unit**: Trimble Pro-XT Mapping grade GPS with post processed corrections: Yes No

Check / submit one: GPS-location of center point of the pool included in shapefile named* -68.1537W, 44.6991N

GPS-location of pool perimeter included as polygon shapefile named* _____

Pool Center Point Easting***: _____ Pool Center Point Northing***: _____

* Observers must check the information on an aerial photo to ensure data quality.

** If mapping grade GPS or Professional Survey is not available, observers must use the most current MDIF&W Vernal Pool Data Collection Form.

*** Center points entered on this form must be submitted with a paper map showing the pool location on USGS Topo Quad or large scale aerial photo.

3. VERNAL POOL SURVEY INFORMATION

a. Pool or Wetland Habitat Characterization

i. Choose the best descriptor for the physical setting:

Isolated Upland Depression Pool associated with larger wetland complex

Floodplain Depression Other: _____

ii. Check all palustrine types that best apply to this pool or wetland:

Forested wetland Wet meadow Slow stream

Shrub wetland Shallow pond Floodplain overflow / Oxbow

Peatland (acidic fen or bog) Abandoned beaver flowage Headwater seepage

Emergent marsh Active beaver flowage Other:

iii. Predominate substrate in order of increasing hydroperiod:

Mineral soil (bare, leaf-litter bottom, or upland mosses present)

Mineral soil (sphagnum moss present)

Organic matter (peat/muck) shallow or restricted to deepest portion

Organic matter (peat/muck) deep and widespread

iv. Nonwoody pool vegetation indicators in order of increasing hydroperiod (check all that apply):

Terrestrial nonvascular spp. (e.g. haircap moss, lycopodium spp.) Sphagnum moss (anchored or suspended)

Dry site ferns (e.g. spinulose wood fern, lady fern, polypody fern) Wet site ferns (e.g. royal fern, marsh fern)

Moist site ferns (e.g. sensitive, cinnamon, interrupted, New York) Wet site graminoids (e.g. blue-joint grass, tussock sedge, cattail)

Moist site vasculars (skunk cabbage, jewelweed, blue flag iris, swamp candle) Aquatic vascular spp. (e.g. pickerelweed, arrowhead)

Floating or submerged aquatics (e.g. water lily, water shield, pond weed, bladderwort)

b. Vernal Pool Origin or Impacts

i. Pool's Origin: Natural Natural-Modified Non-Natural Unknown

• Describe any modern or historic modifications to the pool and associated wetland (REQUIRED):

Maine Association of Wetland Scientists (MAWS) Vernal Pool Data Collection Form

April 14, 2010

Page 1 of 2

3. VERNAL POOL SURVEY INFORMATION (continued)

Pool ID: 20CF

ii. Hydrology

- Approximate size of pool (at max. capacity): Width 40 m ft (check one) Length 150 m ft (check one)
- Maximum depth at time of survey: 20 in ft cm m (check one)

Select the pool's likely hydroperiod and give evidence in the space to the right.

- Permanent _____
- Semi-permanent (drying partially in all years and completely in drought years) _____
- Ephemeral (drying out completely in most years) _____
- Recommend dry out period observation _____

iii. Inlet/Outlet Permanency

- No inlet / outlet Permanent inlet or outlet (channel with well-defined banks and permanent flow)
- Ephemeral inlet / outlet Other _____

iv. Faunal Indicators:

- Fish (species): _____ Bullfrog or Green frog tadpoles Other: _____

c. Significant Vernal Pool Status under NRPA

i. Survey Date(s): 4/16/10, 5/5/10

ii. Abundance Criteria

- Was the entire pool comprehensively surveyed for egg masses? Yes No
- For each indicator species, indicate the exact number of egg masses, verification method (VM), confidence level (CL), and egg mass integrity (EI) for each life stage (separate cells are provided for separate survey dates).

Indicator Species	Observation:	Egg Masses (or Adult Fairy Shrimp)								Tadpoles/Larvae			
	Information:	#		VM*		CL**		EMI***		VM*		CL**	
	Date:	4/16/10	5/5/10	4/16/10	5/5/10	4/16/10	5/5/10	4/16/10	5/5/10	4/16/10	5/5/10	4/16/10	5/5/10
Wood frog		12	0	S	NA	3	NA	F	NA	NA	S	NA	3
Spotted Salamander		10	12	S	S	3	3	F	H	NA	NA	NA	NA
Blue-spotted Salamander		0	0	NA	NA	NA	NA	NA	A/H	NA	NA	NA	NA
Fairy Shrimp		0	0	NA	NA	NA	NA	NA	NA				

*Verification Method: S= Seen, H= Handled, P= Photographed

**Confidence Level (species ID): 1= <60%, 2= 60-95%, 3= >95%

*** Egg Mass Integrity: F= Fresh (<24 hrs), M= Mature (round embryos), A= Advanced (looser matrix, curved embryos), H= Hatched or hatching

iii. Rarity Criteria

- Was a specific effort made to survey for rare species? Yes No
- If yes, indicate which species were targeted: _____
- Note any rare species associated with vernal pools using the box below. Observations should be accompanied photographs (labeled with observer name, pool location, and date).

Species	Verification Method*			CL**	Species	Verification Method*			CL**
	P	H	S			P	H	S	
Blanding's Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Wood Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Spotted Turtle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Ribbon Snake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Ringed Boghaunter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Other:				

*Verification Method: P= Photographed, H= Handled, S= Seen

**CL-Confidence level in verification: 1= <60%, 2= 60-95%, 3= >95%

d. General Comments:

- Completed Vernal Pool Survey per guidelines outlined in the MAWS 2010 Interim Vernal Pool Survey Protocol
- Sent hard copy of MAWS Vernal Pool Data Collection Form to: MDIF&W, Attn: Vernal Pools; 650 State Street; Bangor, ME 04401
- Sent hard copy map of pool center point with coordinates on MAWS Vernal Pool Data Collection Form to MDIF&W (address above)
- Sent shapefile of pool perimeter / center point on CD to MDIF&W (address above) or emailed to: vernalpools.mdifw@maine.gov

OBSERVER SIGNATURE

I hereby certify that the information contained in this report is true and complete to the best of my knowledge:

Signature: Charles Ferris Date 10/7/2010

For MDIF&W Use Only:

Reviewed by MDIF&W Date: _____ Initials: _____

This pool is:

- Significant Potentially significant but lacking critical data Not significant due to: does not meet biological criteria and/or

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Blue Sky East / Bull Hill Wind

City/County: T16 MD / Hancock

Sampling Date: 12/2/2009

Applicant/Owner: Blue Sky East, LLC

State: ME

Sampling Point: A070

Investigator(s): ETD

Section, Township, Range:

Landform (hillslope, terrace, etc.):

Local relief (concave, convex, none):

Slope (%):

Lat:

Long:

Datum:

Soil Map Unit Name:

NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in remarks)

Are Vegetation , Soil , or Hydrology significantly disturbed?

Are "Normal Circumstances" present? Yes No

Are Vegetation , Soil , 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area Within a wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID: A070
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: 30')					
1. Picea rubens	50	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: 6 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)	
2. Acer rubrum	10	No	FAC		
3. Thuja occidentalis	10	No	FACW		
4. Betula papyrifera	10	No	FACU		
5.					
6.					
7.					
	80	= Total Cove		Prevalence Index worksheet: <div style="display: flex; justify-content: space-between;"> <u>Total % Cover of:</u> <u>Multiply by:</u> </div> 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 =	
Sapling/Shrub Stratum (Plot size: 15')					
1. Picea rubens	20	Yes	FACU		
2. Acer rubrum	20	Yes	FAC		
3. Abies balsamea	10	No	FAC		
4.					
5.					
6.					
7.					
	50	= Total Cover		Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Herb Stratum (Plot size: 5')					
1. Abies balsamea	2	Yes	FAC		
2. Mitella repens	2	Yes	FACU		
3. Osmunda cinamomea	15	Yes	FACW		
4. Pinus strobus	1	No	FACU		
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
	20	= Total Cover		Definitions of Vegetation Strata: Tree – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 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.	
Woody Vine Stratum (Plot size: 15')					
1.					
2.					
3.					
4.					
	0	= Total Cover		Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Include photo numbers here or on a separate sheet.):					

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Blue Sky East / Bull Hill Wind

City/County: T16 MD / Hancock

Sampling Date: 12/2/2009

Applicant/Owner: Blue Sky East, LLC

State: ME

Sampling Point: A070

Investigator(s): TT, MPA

Section, Township, Range:

Landform (hillslope, terrace, etc.):

Local relief (concave, convex, none):

Slope (%):

Lat:

Long:

Datum:

Soil Map Unit Name:

NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in remarks)

Are Vegetation , Soil , or Hydrology significantly disturbed?

Are "Normal Circumstances" present? Yes No

Are Vegetation , Soil , 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area Within a wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID: A070
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (Inches): Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 4" Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (Inches): 0" (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: 30')				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: 5 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)																
1. Picea rubens*	80	Yes	FACU																	
2. Thuja occidentalis	30	No	FACW																	
3. Abies balsamea	20	No	FAC																	
4. Acer rubrum	10	No	FAC																	
5.																				
6.																				
7.																				
= Total Cover																				
<u>Sapling/Shrub Stratum</u> (Plot size: 15')					Prevalence Index worksheet: <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>Total % Cover of:</u></td> <td style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL Species</td> <td style="text-align: right;">x 1 =</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: right;">x 2 =</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: right;">x 3 =</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: right;">x 4 =</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">x 5 =</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: right;">(A) (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A =</td> </tr> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	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 =
<u>Total % Cover of:</u>	<u>Multiply by:</u>																			
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 =																				
1. Picea rubens	18	Yes	FACU																	
2. Thuja occidentalis	15	Yes	FACW																	
3. Abies balsamea	10	No	FAC																	
4.																				
5.																				
6.																				
7.																				
= Total Cover																				
<u>Herb Stratum</u> (Plot size: 5')				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 ¹ <input checked="" type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. Osmunda cinamomea	15	Yes	FACW																	
2. Carex trisperma	3	Yes	OBL																	
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
= Total Cover																				
<u>Woody Vine Stratum</u> (Plot size: 15')				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 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.																
1.																				
2.																				
3.																				
4.																				
= Total Cover																				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				
Remarks (Include photo numbers here or on a separate sheet.): Red spruce trees with morphological adaptations: Buttressed trunks																				

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Blue Sky East / Bull Hill Wind

City/County: T16 MD / Hancock

Sampling Date: 12/1/2009

Applicant/Owner: Blue Sky East, LLC

State: ME

Sampling Point: A095

Investigator(s): MPA / TT

Section, Township, Range:

Landform (hillslope, terrace, etc.):

Local relief (concave, convex, none):

Slope (%):

Lat:

Long:

Datum:

Soil Map Unit Name:

NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in remarks)

Are Vegetation , Soil , or Hydrology significantly disturbed?

Are "Normal Circumstances" present? Yes No

Are Vegetation , Soil , 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 <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area Within a wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status																						
<u>Tree Stratum</u> (Plot size: 30')				<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)</p> <p>Total Number of Dominant Species Across All Strata: 7 (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: 29% (A/B)</p> <hr/> <p>Prevalence Index worksheet:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 25%; text-align: center;">Total % Cover of:</th> <th style="width: 25%; text-align: center;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL Species</td> <td style="text-align: center;">0</td> <td style="text-align: center;">x 1 = 0</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: center;">11</td> <td style="text-align: center;">x 2 = 22</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: center;">15</td> <td style="text-align: center;">x 3 = 45</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: center;">35</td> <td style="text-align: center;">x 4 = 140</td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">0</td> <td style="text-align: center;">x 5 = 0</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: center;">61 (A)</td> <td style="text-align: center;">207 (B)</td> </tr> </tbody> </table> <p style="text-align: center;">Prevalence Index = B/A = 3.39</p> <hr/> <p>Hydrophytic Vegetation Indicators:</p> <p><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation</p> <p><input type="checkbox"/> Dominance Test is > 50%</p> <p><input type="checkbox"/> Prevalence Index is $\leq 3.0^1$</p> <p><input type="checkbox"/> Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p><input type="checkbox"/> Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <hr/> <p>Definitions of Vegetation Strata:</p> <p>Tree – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height.</p> <p>Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.</p> <p>Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</p> <p>Woody vines – All woody vines greater than 3.28 ft in height.</p> <hr/> <p>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>		Total % Cover of:	Multiply by:	OBL Species	0	x 1 = 0	FACW Species	11	x 2 = 22	FAC Species	15	x 3 = 45	FACU Species	35	x 4 = 140	UPL species	0	x 5 = 0	Column Totals	61 (A)	207 (B)
	Total % Cover of:	Multiply by:																							
OBL Species	0	x 1 = 0																							
FACW Species	11	x 2 = 22																							
FAC Species	15	x 3 = 45																							
FACU Species	35	x 4 = 140																							
UPL species	0	x 5 = 0																							
Column Totals	61 (A)	207 (B)																							
1. Thuja occidentalis	10	Yes	FACW																						
2. Picea rubens	10	Yes	FACU																						
3.																									
4.																									
5.																									
6.																									
7.																									
	20	= Total Cover																							
<u>Sapling/Shrub Stratum</u> (Plot size: 15')																									
1. Picea rubens	8	Yes	FACU																						
2. Abies balsamea	15	Yes	FAC																						
3. Comptonia perigrina	3	No	NI																						
4. Gaylussacia baccata	10	Yes	FACU																						
5. Pinus strobus	1	No	FACU																						
6.																									
7.																									
	37	= Total Cover																							
<u>Herb Stratum</u> (Plot size:)																									
1. Pteridium aquilinum	3	Yes	FACU																						
2. Gaultheria procumbens	3	Yes	FACU																						
3. Epigaea repens	1	No	NI																						
4. Gaultheria hispidula	1	No	FACW																						
5.																									
6.																									
7.																									
8.																									
9.																									
10.																									
11.																									
12.																									
	8	= Total Cover																							
<u>Woody Vine Stratum</u> (Plot size: 15')																									
1.																									
2.																									
3.																									
4.																									
	0	= Total Cover																							
Remarks (Include photo numbers here or on a separate sheet.):																									

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Blue Sky East / Bull Hill Wind

City/County: T16 MD / Hancock

Sampling Date: 12/1/2009

Applicant/Owner: Blue Sky East, LLC

State: ME

Sampling Point: A095

Investigator(s): MPA / TT

Section, Township, Range:

Landform (hillslope, terrace, etc.):

Local relief (concave, convex, none):

Slope (%):

Lat:

Long:

Datum:

Soil Map Unit Name:

NWI Classification:

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in remarks)

Are Vegetation , Soil , or Hydrology significantly disturbed?

Are "Normal Circumstances" present? Yes No

Are Vegetation , Soil , 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area Within a wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID: A095
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks (Explain alternative procedures here or in a separate report):		

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status																																	
Tree Stratum (Plot size: 30')																																				
1. <i>Picea rubens</i>	40	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: 5 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)																																
2. <i>Thuja occidentalis</i>	10	No	FACW																																	
3. <i>Abies balsamea</i>	10	No	FAC																																	
4.																																				
5.																																				
6.																																				
7.																																				
	60	= Total Cover		Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 20%; text-align: center;">Total % Cover of:</th> <th style="width: 20%;"></th> <th style="width: 30%; text-align: center;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL Species</td> <td style="text-align: center;">20</td> <td style="text-align: center;">x 1 =</td> <td style="text-align: center;">20</td> </tr> <tr> <td>FACW Species</td> <td style="text-align: center;">63</td> <td style="text-align: center;">x 2 =</td> <td style="text-align: center;">126</td> </tr> <tr> <td>FAC Species</td> <td style="text-align: center;">48</td> <td style="text-align: center;">x 3 =</td> <td style="text-align: center;">144</td> </tr> <tr> <td>FACU Species</td> <td style="text-align: center;">78</td> <td style="text-align: center;">x 4 =</td> <td style="text-align: center;">312</td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">0</td> <td style="text-align: center;">x 5 =</td> <td style="text-align: center;">0</td> </tr> <tr> <td>Column Totals</td> <td style="text-align: center;">209 (A)</td> <td></td> <td style="text-align: center;">602 (B)</td> </tr> <tr> <td colspan="4" style="text-align: center;">Prevalence Index = B/A = 2.88</td> </tr> </tbody> </table>		Total % Cover of:		Multiply by:	OBL Species	20	x 1 =	20	FACW Species	63	x 2 =	126	FAC Species	48	x 3 =	144	FACU Species	78	x 4 =	312	UPL species	0	x 5 =	0	Column Totals	209 (A)		602 (B)	Prevalence Index = B/A = 2.88			
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Column Totals	209 (A)		602 (B)																																	
Prevalence Index = B/A = 2.88																																				
Sapling/Shrub Stratum (Plot size: 15')																																				
1. <i>Picea rubens</i>	38	Yes	FACU	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is > 50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
2. <i>Abies balsamea</i>	35	Yes	FAC																																	
3. <i>Thuja occidentalis</i>	3	No	FACW																																	
4.																																				
5.																																				
6.																																				
7.																																				
	76	= Total Cover																																		
Herb Stratum (Plot size: 5')																																				
1. <i>Osmunda cinamomea</i>	50	Yes	FACW	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (76 cm) or more in diameter (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>																																
2. <i>Rubus dalibarda</i>	3	No	FAC																																	
3. <i>Carex trisperma</i>	20	Yes	OBL																																	
4.																																				
5.																																				
6.																																				
7.																																				
8.																																				
9.																																				
10.																																				
11.																																				
12.																																				
	73	= Total Cover																																		
Woody Vine Stratum (Plot size: 15')																																				
1.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																																
2.																																				
3.																																				
4.																																				
		= Total Cover																																		
Remarks (Include photo numbers here or on a separate sheet.):																																				

