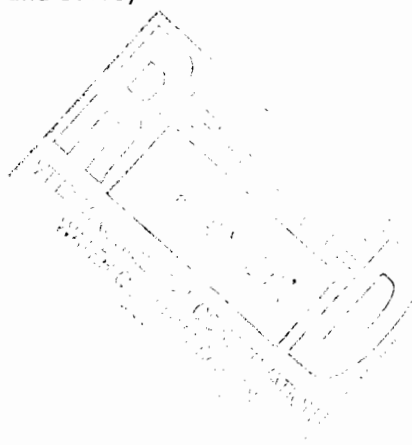
Lamoureux & Dickinson

Civil Engineers Planners Septic Designers Landscape Architects Land Surveyors



August 3, 2011

Ms. Julie Foley
Vermont Wetlands Program
103 South Main Street
Building 10 North
Waterbury, VT 05671-0408

Re: John K. Pheeney property, 183 Towers Road Extension, Essex, VT
Vermont Individual Wetland Permit application

Dear Julie:

On behalf of the applicant and landowner, John K. Pheeney, we are submitting an application to allow impact to 280 square feet of Class 2 wetland and 2,118 square feet of wetland buffer. The project purpose is to construct one single-family home on this 9.3-acre property. Because of soil conditions, there is only a limited area suitable for the on-site wastewater system that the house will require. This area is located across a narrow portion of wetland from the house site and we are proposing temporary impacts for the installation of force main pipe and access road. You, Mr. Pheeney, and I met at this property on May 17, 2011.

We have enclosed the application, a check for the application fee of $324.22, the project plans, wetland data forms, a list of abutting landowners, a location map, and a photo of the proposed impact area. If you have any questions or need additional information, please don't hesitate to contact me.

Sincerely,

Brian

Brian Tremback
Certified Professional Soil Scientist
Licensed Designer Class B
Wetland Scientist

cc: John K. Pheeney

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Vermont Wetland Section
Wetland Application Database Form
(AFFIX TO THE FRONT OF THE APPLICATION)

Applicant Name: John K. Pheeney	**Representative Name: Brian Tremback**
Town where project is located: Essex	**County: Chittenden**

Project Location Description: 183 Towers Road Extension
911 Street Address or direction from nearest intersection

Project Summary:Construction of a single-family residence and on-site sewer and water.

Permit Type Requested (check all that apply)

☐ Vermont General Permit Coverage ☐ Wetland Determination ☒ Vermont Wetland Permit

Impact Calculations: Total up proposed impacts from wetland tables listed below

Total Wetland Impact	280square feet (s.f.)	Total Buffer Zone Impact	2,118square feet (s.f.)

Permit Fees: Make check payable to - *State of Vermont*

Wetland Impact Fee: ($0.12/sf)	$33.60	Administrative Fee:	$100
Buffer Impact Fee: ($0.09/sf)	$190.62	Total Check Amount:	$324.22

Existing Land Use Type: (check all that apply)
☐ Forestry ☐ Residential (Subdivision) ☐ Industrial/ commercial
☐ Agriculture ☐ Transportation ☐ Parks/Rec/Trail ☐ Residential (Single Family) ☐ Institutional ☒ Undeveloped

Proposed Land Use Type: (check all that apply)
☐ Forestry ☐ Residential (Subdivision) ☐ Industrial/ commercial
☐ Agriculture ☐ Transportation ☐ Parks/Rec/Trail ☒ Residential (Single Family) ☐ Institutional ☐ No Change

Proposed Impact Type: (check all that apply)
☐ Buildings ☐ Utilities ☐ Parking ☒ Septic/Well ☐ Stormwater
☐ Driveway ☐ Road ☐ Parks/Path ☐ Agriculture ☐ Pond ☐ Lawn
☐ Dry Hydrant ☐ Beaver dam alteration ☐ Silviculture ☐ Aesthetics ☐ Other ☐ No Impact

Wetland 1: (Label using Wetland ID from application if applicable, use supplemental sheets if more than one wetland is being impacted) **Location:**

Wetland Type: **PEM/PFO - Emergent a**WL Size Class : **<1 acre**

Proposed Alterations

Wetland Alteration:		**Buffer Zone Alteration:**		**Wetland Alteration Type** (check all that apply)	
Wetland Fill:	280s.f.			☐Dredge	☐Drain
Temporary:	280s.f.	Temporary:	2,118 s.f	☐Cut Vegetation	☐Stormwater
Permanent: :	0s.f.	Permanent: :	0 s.f	☒Trench/Fill	☐Other

Mitigation

Avoidance and Minimization (s.f. of wetland NOT impacted): Wetland: 117,585 s.f. Buffer Zone 93,194 s.f.

Wetland Mitigation: (s.f. Gained)				**Buffer Zone Mitigation (s.f. Gained):**			
Restoration	s.f.	Enhancement	s.f.	Restoration	s.f.	Enhancement	s.f
Creation	s.f.	Conservation	s.f..	Creation	s.f	Conservation	s.f

Reason for Mitigation: ☐ Correction of Violation ☐ Mitigation to offset permit impacts ☐ Voluntary

All Applications Should be Mailed To:

Vermont Wetlands Program
Water Quality Division
103 South Main St
Building 10 North
Waterbury, VT 05671-0408

Staff To Complete		
Wetland Project Number:		
Wetland Project Name:	**DEC ID#:**	
Date Application Received:		
Request for Information Date:	**Information Received Date:**	
Request for Information Date:	**Information Received Date:**	
Date Application Complete:	**Distribution Complete Date:**	
Notice Begin Date:	**Notice End Date:**	
Final Action Date:	**Public Meeting Date:**	
Check#	**Check Amount**	**Date Check Received**
Check#	**Check Amount**	**Date Check Received**

Vermont Wetland Permit Application/Determination Petition

QUESTION	INSTRUCTIONS AND APPLICANT ANSWER	STAFF NOTE
1. Applicant	If the applicant is someone other than the landowner, the landowner information must also be included below.	
1.1. Applicant Name	John K. Pheeney	
1.2. Applicant Address	12 Gregory Drive, Suite 4	
1.3. Applicant Phone Number	802-865-0090	
1.4. Applicant Email	John.P@RadioNorthGroup.com	
1.5. Applicant Signature (original signature required)	By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge. X [signature] Date: 7.30.2011	
2. Representative	Consultant, engineer, or other representative that is responsible for filling out this application, if other than the applicant or landowner	
2.1. Representative Name	Brian Tremback	
2.2. Representative Address	Lamoureux & Dickinson, 14 Morse Drive, Essex Junction, VT 05452	
2.3. Representative Phone Number	802-878-4450	
2.4. Applicant Email	brian@LDengineering.com	
2.5. Representative Signature (original signature required)	By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge. X [signature] Date: 8-3-2011	
3. Landowner	Landowner must sign the application. Use this space if landowner is different from the applicant	
3.1. Landowner Name	same as applicant	
3.2. Landowner Address		
3.3. Landowner Phone Number		
3.4. Landowner Email		
3.5. Landowner Easement	Attach copies of any easements, agreements or other documents conveying permission, and agreement with the landowner stating who will be responsible for meeting the terms and conditions of the permit. List the attachment for this information in this section. N/A	
3.6. Landowner Signature (original signature required)	By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge. X [signature] Date: 7.30.2011	
4. Location of Wetland and Project	Location description should include the road the wetland is located on, the compass direction of the wetland in relation to the road, 911 street address if available, and any other distinguishing geographic features. 183 Towers Road Extension, Essex	

5. Site Visit Date and Attendees	Date of visit with District Wetlands Ecologist May 17, 2011	List people present for site visits including Ecologist, landowner, and representatives. Julie Foley, John K. Pheeney, Brian Tremback
6. Wetland Classification	The wetland is a Class II wetland because (Choose one): The wetland is contiguous to a VSWI mapped wetland	
7. Description of Entire Wetland or Wetland Complex	Answer the following questions regarding the entire wetland or wetland complex. A wetland complex is generally defined as two or more wetland types that are contiguous and interrelated. Specific questions about the wetland in the project area will follow.	
7.1. Size of Wetland Complex in Acres	Can be obtained from the Environmental Interest Locator Map for mapped wetlands 6.9	
7.2. Natural Community Types Present	List all wetland types in the wetland or wetland complex and their abundance or relative abundance. For example: 50 acres of softwood forested swamp; or 30% scrub swamp, 70% emergent wetland 50% forested swamp 30% emergent wetland 20% shrub swamp	
7.3. Landscape Position	Where is the wetland located on the landscape? Examples: bottom of a basin, edge of a stream, shore of a lake, etc. In a valley between two low bedrock ridges.	
7.4. Wetland Hydrology	Describe the main source of wetland hydrology for the wetland complex. List any river, streams, lakes and ponds. Runoff, groundwater perched on glacial till hardpan Include answers to the following where appropriate:	
7.4.1. Direction of flow	For example: stream flows from north to south through the wetland complex. Intermittent stream flows north to south through the wetland complex.	
7.4.2. Influence of hydrology on wetland complex	For example: The river provides flood water to the wetland in the spring. Small stream is probably of minor importance in supplying water, and more important for removing water.	
7.4.3. Relation to the project area	Distance between the project area and any nearby surface waters. The project area is about 2/3 mile from Indian Brook Reservoir.	
7.4.4. Hydroperiod	Discuss frequency and duration of flooding, ponding, and/or soil saturation. Much of the wetland is likely to have long-term soil saturation, with inundation during spring and fall rainy periods.	
7.5. Surrounding Landuse of the Wetland Complex	For example: rural residential and forested; agricultural and undeveloped, Forested and rural residential	
7.6. Relation to Other Nearby Wetlands	Provide any information on wetlands or wetland complexes that are close enough to contribute to the overall function of the wetland in question. There appears to be approximately 8.7 acres of similar wetland just north of the subject VSWI wetland and within 1/4 mile of the project area.	
7.7. Pre-project Cumulative Impacts to the Wetland	Identify any cumulative ongoing impacts outside of the project that may influence the wetland. Examples include but are not limited to wetland encroachments off the subject property, land management in or surrounding the wetland, or development that influences hydrology or water quality. Some of the former hayfields are being maintained in an open state by residential users. Residential density is low and portions of the peripheral wet meadows are being reclaimed by forest.	
8. Description of Subject Wetland	Subject Wetland is defined as the area of wetland in the project area, but not limited to the portion of the wetland to be directly impacted by the project. For the purposes of this application, the subject wetland should encompass any portion of the larger wetland or wetland complex that could be directly or indirectly impacted by the project, as defined by hydrology, vegetation and/or physical characteristics.	

8.1. Context of Subject Wetland	Describe where the subject wetland is in the context of the larger wetland or wetland complex described above. The subject wetland is located east of the VSWI wetland, and it is associated with its own drainageway that has a confluence with the drainage from the wetland complex about 1,000 feet south of Towers Road Extension.	
8.2. Wetland Landuse	For example: mowed lawn; old field; naturally vegetated. Describe any previous and ongoing disturbance in the subject wetland. Most of the wetland is naturally vegetated. Some of the peripheral wet meadow areas may be mowed occasionally.	
8.3. Wetland Vegetation	List dominant wetland community type and associated dominant plant species. At the proposed impact area, the vegetation is dominated by Impatiens capensis and Carex scoparia. The overstory (rooted in the upland) consists of Pinus strobus and Acer rubrum.	
8.4. Wetland Soils	Use USDA NRCS information where possible and use the ACOE Delineation Manual soil description The soil survey shows the wetland in the Peru stony loam map unit, but it's more properly placed in the Cabot series. The wetland soils consist of silt loam overlying dense basal till .	
8.5. Wetland Hydrology	Use descriptions from the ACOE Delineation Manual. Evidence of wetland hydrology includes Sediment Deposits and Drift Deposits carried by water that drains through this wetland from the forested wetland to the north. Also observed were Water-Stained Leaves. Secondary indicators include Drainage Patterns and Geomorphic Position.	
8.6. Buffer Zone	Describe the buffer zone of the subject wetland including:	
8.6.1. General landuse	For example: mowed road shoulder; forested; old field; paved road and residential lawns etc. Describe any previous and ongoing disturbance in the buffer zone. Forested, old field	
8.6.2. Buffer vegetation	List community type and dominant plant species Buffer vegetation is dominated by Pinus strobus, with a small proportion of Acer rubrum, Picea glauca, and Rhamnus cathartica.	
8.6.3. Buffer soils	Use USDA NRCS information where possible, and the ACOE Delineation Manual soil description Buffer soils are in the Peru series and consist of fine sandy loam overlying dense basal till. The upper 12 to 18 inches of soil is well drained. Redoximorphic features are observed just above the basal till.	

9. **Wetland Determination**	If the application involves a wetland determination please answer the following. **If not, skip to Section 10.**	
9.1. Reason for Petition	Please choose one from the dropdown menu: Add a Section 4.6 presumed wetland to the VSWI map	
9.2. Previous Decisions	Please list all determinations and decisions, if any, issued by the Secretary, Panel or former Water Resources Board, pertaining to the wetland or buffer at issue:	
9.3. Narrative	Please provide any narrative to support the petition for a wetland determination here. This section is not required for petitions to add a Section 4.6 presumed wetland to the VSWI map, but is required for all other petitions.	
If the application is only for a Wetland Determination only, skip to Section 13		

10. Project Description		

10.1. Overall Project	Description of the project. For example: six-lot residential subdivision; expansion of an existing commercial building, access drive to a single family residence. The project consists of the construction of one house and accessory building, with driveway, and on-site wastewater and potable water systems.	
10.2. Project Purpose	For example: To construct a residential subdivision, upgrade existing road to improve access, extend a trail system To construct a single-family residence and associated utilities.	
10.3. Acres Owned by Applicant	Acreage of subject property. 9.3	
10.4. Acres Involved in the Project	Acreage of area involved in the project. Less than 1/2 acre will be used to accommodate driveways, structures, and wastewater system. A larger area will be lawn or occasionally mowed field, as currently maintained.	
11. Project Details	Provide details regarding specific impacts to the wetland and buffer zone	
11.1. Specific Impacts to Wetland and Buffer Zone	List portions of the project that will specifically impact the wetland or buffer zone. The wetland and buffer zone will be temporarily impacted by a force main and construction access road. After construction is complete, the road will be removed and the native grade restored.	
11.2. Dimension Details	Square footage of buildings, dimension of roads including fill footprint. The house will be a total of approximately 2,000 sq ft on two floors, and the garage/workshop about 1,000 sq ft. The driveway will be about 750 ft long and 12 ft wide.	
11.3. Bridges and Culverts	Culvert circumference, length, placement and shapes, or bridge details. Depending on the season of construction, a temporary culvert will be installed before the construction access road to allow continued flow of water and prevent ponding of water upslope and within the road fill. After construction is complete, the culvert and road will be removed.	
11.4. Construction Sequence	Describe any details pertaining to the worked planned in the wetland and buffer in terms of sequence or phasing that is relevant At crossing: 1) Install silt fences 2) Install force main 2) Place culvert and fill for access road on roadway separation fabric to facilitate complete removal when work is finished 3) Construct mound system 4) When mound system is complete, tested, and finish graded, remove fill, culvert, and fabric. 5) Re-establish native grade; seed and mulch 6) When vegetation is established, remove silt fence	
11.5. Stormwater Design	List any stormwater permits obtained or applied for. Describe any stormwater and/or erosion controls proposed to prevent discharges to the wetland and buffer zone. N/A	
11.6. Permanent Demarcation of Limits of Impact	Describe any plantings, fencing, signage, or other memorialization that provides permanent on-the-ground boundaries for the limits of disturbance for ongoing uses. None proposed	
12. Wetland and Buffer Zone Impacts		

12.1. Wetland Impacts

Summarize the square footage of impact in the appropriate category. If more than one wetland is impacted, provide that information and use the supplemental wetland sheets.

Totals

Wetland Fill	0 s.f.
Temporary Wetland Impact	280 s.f.
Other Permanent Wetland Impact	0 s.f.

Describe in detail the proposed impact.

The wetland will be impacted by the installation of a buried wastewater force main. Additionally, to construct the proposed mound system, a temporary gravel access road will be constructed.

12.2. Buffer Zone Impacts

Summarize the square footage of impact in the appropriate category. If more than one wetland is impacted, provide that information and use the supplemental wetland sheets.

Totals

Temporary Buffer Impact	2,118 s.f.
Permanent Buffer Impact	0 s.f.

Describe in detail the proposed impact.

The buffer will be impacted by the installation of a buried wastewater force main. Additionally, to construct the proposed mound system, a temporary gravel access road will be constructed.

12.3. Cumulative Impacts

List any potential cumulative or ongoing, direct and indirect impacts on the functions of the wetland that could result from the proposed project.

None expected. The temporary access road will be removed upon completion of construction and the native grade restored.

12.4. Avoidance and Minimization

Please refer to Section 9.5b of the rules on Mitigation Sequencing for this section.

12.4.1. Avoidance

Can the proposed activity be practicably located outside the wetland/buffer zone, or on another site owned or controlled by the applicant or reasonably available to satisfy the basic project purpose? If not, indicate why. This answer should include any examination of alternatives that you have explored including using other properties, requesting easements, and altering the project design.

The proposed site for the wastewater absorption system is the only one on the property that can support a system in accordance with the State wastewater regulations. Other areas either have too shallow a depth to seasonal high groundwater or too little slope.

12.4.2. Minimization

If the proposed activity cannot practicably be located outside the wetland/buffer zone, have all practicable measures have been taken to avoid adverse impacts on protected functions? Please include any information on on-site alternatives that have been examined; minimizing the size and scope of the project to avoid impacts; or relocating portions of the project to avoid impacts

The narrowest crossing of the wetland was used. The temporary access road will be removed when the work is finished.

12.4.3. Mitigation

If avoidance of adverse effects on protected functions cannot be practically achieved, has the proposed activity has been planned to minimize adverse impacts on the protected functions and a plan has been developed for the prompt restoration of any adverse impacts on protected functions? Include any information on best management practices to be used for the project both for the initial construction and ongoing use. Also include any proposed

	restoration of temporary impacts, previously disturbed wetland or buffer zones or proposed conservation that are being used to offset the proposed impacts. The temporary access road will be removed when work is finished. Native grade will be re-established and the disturbed area will be seeded and mulched.
12.4.4. Compensation	Please refer to Section 9.5c of the rules for compensation, which is appropriate when the project will result in an undue adverse impact. If compensation is proposed please include a summary here. N/A
13. Supporting materials	Where appropriate list the accompanying material by title, author, date and last revision date. Submit these documents and plans with the application.
13.1. Location map	Provide a project location map that is 8 ½" x 11" and reproducible in black and white. An Environmental Interest Locator Map is appropriate using the USGS topography map base layer, roads, and VSWI wetlands at minimum. Attached
13.2. Site Plans	List by title, author, date and last revision date. Plans should include wetland delineation and buffer zones, limits of disturbance, erosion controls, building envelopes and permanent memorialization. Sheet S1: Wastewater System and Potable Water Supply Design Sheet D1: Wastewater System Details and Specifications
13.3. ACOE Delineation Forms	List by author, location, and date. Required only for Individual Permits. Data form 1A: Brian Tremback, near proposed crossing, 7-25-2011 Data form 1B: Brian Tremback, near proposed crossing, 7-25-2011
13.4. Other Supporting Documents	Provide any other documentation that supports the application. List photographs; easements; agreements; may include a GIS-compatible wetland submittal for determinations; etc. Photograph attached
13.5. List of Abutters (Neighbors with land adjoining wetland or buffer zone)	Attach list of names and mailing addresses or submit as word mailing document. Neighbors with land in or adjacent to wetland or buffer zone within 500 feet of proposed impact: 1) Mun & Ock Sun, 156 Old Stage Rd, Essex Jct, VT 05452 2) Brian & Laura Murphy, 187 Towers Rd Ext, Essex Jct, VT 05452 3) The A Johnson Company, 995 South 116 Rd, Bristol, VT 05443
13.5.1. Newspaper Notification	If choosing the option to fulfill the notice requirement with a newspaper notice, list the newspaper to be used here. A list of names and addresses for immediately adjacent landowners (500 foot radius) of the project area is required for the List of Abutters. ***NOTE: The applicant will be billed directly by the newspaper you list here. Use of newspaper notification may extend the notice period, depending on when the notice posts in the newspaper.** Use Burlington Free Press to notify other owners beyond 500 feet.
14. Check Which Functions are Present in the Subject Wetland and in the Wetland Complex.	**Wetland Function Summary:** (if more than one wetland use supplemental wetland sheets)

Functions & Values	Subject Wetland	Wetland Complex	Functions & Values	Subject Wetland	Wetland Complex
Flood/Storm Storage	☐	☒	RTE Species	☐	☐
Surface & Groundwater Protection	☒	☒	Education & Research	☐	☐
Fish Habitat	☐	☐	Recreation/ Economic	☐	☒

	Wildlife Habitat	☐	☒	Open Space/ Aesthetics	☐	☐
	Exemplary Natural Community	☐	☐	Erosion Control	☒	☒

15. Coverage under Vermont General Wetland Permit	**If applying for an Individual Vermont Wetland Permit or Determination, please proceed to number 16 and answer the remaining application questions.** **If applying for Coverage under the Vermont General Wetland Permit, please complete question 15.1 prior to submitting application.**
15.1. VWP Vermont General Permit eligibility checklist	If applying for coverage under the Vermont General Wetland Permit, please verify the following to complete the application: ☐ The activity qualifies as an eligible activity for coverage under the Vermont General Wetland Permit ☐ The proposed project will meet the conditions applicable to the proposed project in the Vermont Wetland General Permit ☐ The activity does not qualify as an Allowed Use under Section 6 of the Vermont Wetland Rules. ☐ The activity will not result in an undue adverse impact on protected wetland functions and values, nor does it need additional conditions to protect functions and values. ☐ All impacts have been avoided and minimized to the greatest extent possible. ☐ The wetland complex is not significant for Function 5.5 Exemplary Wetland Natural Community or 5.6 Rare, Threatened and Endangered Species Habitat. ☐ The activity is not located in or adjacent to a vernal pool, fen, or bog. ☐ The wetland is not at or above 2,500' in elevation (headwaters wetland). ☐ The project is not located in a Class I wetland or associated buffer zone. ☐ The activity is not an as-built project that constitutes a violation of the Vermont Wetland Rules.
Stop here if applying for Coverage under the Vermont General Wetland Permit	

Complete the following Functions and Values checklist if applying for an Individual Wetland Permit and/or a Wetland Determination	
Functions and Values	For each Function and Value, first evaluate the entire wetland or **wetland complex** and check all that apply. Secondly, evaluate how the wetland in the project area contributes to that function. Thirdly explain how the project will not result in adverse impacts to this function. Include any information on specific avoidance and minimization measures. If more than one wetland complex is involved, use the Supplemental Wetland Forms.
16. Storage for Flood Water and	☒ Function is present and likely to be significant: Any of the

Storm Runoff	following physical and vegetative characteristics indicate the wetland provides this function. ☐ Constricted outlet or no outlet and an unconstricted inlet. ☒ Physical space for floodwater expansion and dense, persistent, emergent vegetation or dense woody vegetation that slows down flood waters or stormwater runoff during peak flows and facilitates water removal by evaporation and transpiration. ☐ If a stream is present, its course is sinuous and there is sufficient woody vegetation to intercept surface flows in the portion of the wetland that floods. ☐ Physical evidence of seasonal flooding or ponding such as water stained leaves, water marks on trees, drift rows, debris deposits, or standing water. ☐ Hydrologic or hydraulic study indicates wetland attenuates flooding. If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level. ☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *lower* level. ☐ Significant flood storage capacity upstream of the wetland, and the wetland in question provides this function at a negligible level in comparison to upstream storage (unless the upstream storage is temporary such as a beaver impoundment). ☐ Wetland is contiguous to a major lake or pond that provides storage benefits independently of the wetland. ☐ Wetland's storage capacity is created primarily by recent beaver dams or other temporary structures. ☐ Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively. ☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *higher* level. ☐ History of downstream flood damage to public or private property. ☐ Any of the following conditions present downstream of the wetland, but upstream of a major lake or pond, could be impacted by a loss or reduction of the water storage function. ☐ 1. Developed public or private property. ☐ 2. Stream banks susceptible to scouring and erosion. ☐ 3. Important habitat for aquatic life.

	☐ The wetland is large in size and naturally vegetated. ☐ Any of the following conditions present upstream of the wetland may indicate a large volume of runoff may reach the wetland. ☐ 1. A large amount of impervious surface in urbanized areas. ☐ 2. Relatively impervious soils. ☐ 3. Steep slopes in the adjacent areas.	
16.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above The subject wetland is unlikely to contribute significantly to this function. It appears to be an old drainageway dug to drain a now forested wetland along the northern property line. It has little ability to detain or store water.	
16.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. There will be no undue adverse impact because the wetland does not provide this function.	
17. Surface and Ground Water Protection	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Constricted or no outlets. ☒ Low water velocity through dense, persistent vegetation. ☒ Hydroperiod permanently flooded or saturated. ☒ Wetlands in depositional environments with persistent vegetation wider than 20 feet. ☐ Wetlands with persistent vegetation comprising a defined delta, island, bar or peninsula. ☐ Presence of seeps or springs. ☐ Wetland contains a high amount of microtopography that helps slow and filter surface water. ☐ Position in the landscape indicates the wetland is a headwaters area. ☐ Wetland is adjacent to surface waters. ☐ Wetland recharges a drinking water source. ☐ Water sampling indicates removal of pollutants or nutrients. ☐ Water sampling indicates retention of sediments or organic matter. ☐ Fine mineral soils and alkalinity not low. ☐ The wetland provides an obvious filter between surface water or ground water and land uses that may contribute point or nonpoint sources of sediments, toxic substances or nutrients to the wetland, such as: steep erodible slopes; row crops; dumps; areas of pesticide, herbicide or fertilizer application; feed lots; parking lots or heavily traveled road;	

	and septic systems. If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level. ☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *lower* level. ☐ Presence of dead forest or shrub areas in sufficient amounts to result in diminished nutrient uptake. ☐ Presence of ditches or channels that confine water and restrict contact of water with vegetation. ☐ Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively. ☐ Current use in the wetland results in disturbance that compromises this function. ☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *higher* level. ☐ The wetland is adjacent to a well head or source protection area, and provides ground water recharge. ☐ The wetland provides flows to Class A surface waters. ☐ The wetland contributes to the protection or improvement of water quality of any impaired waters. ☐ The wetland is large in size and naturally vegetated.
17.1. Subject Wetland	**Please explain how the subject wetland contributes to the function listed above** The subject wetland may provide this function at a low level. Surface water is conducted at a low gradient through moderately dense vegetation.
17.2. Statement of no undue adverse impact	**Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.** The proposed project will not result in an adverse impact because it is temporary.
18. Fish Habitat	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Contains woody vegetation that overhangs the banks of a stream or river and provides any of the following: shading that controls summer water temperature; cover including refuges created by overhanging branches or undercut banks; source of terrestrial insects as fish food; or streambank stability. ☐ Provides spawning, nursery, feeding or cover habitat for fish (documented or professionally judged). Common habitat includes deep marsh and shallow marsh associates with lakes and streams, and seasonally flooded wetlands associated with streams and rivers.

	☐ Documented or professionally judged spawning habitat for northern pike. ☐ Provides cold spring discharge that lowers the temperature of receiving waters and creates summer habitat for salmonoid species. ☐ The wetland is located along a tributary that does not support fish, but contributes to a larger body of water that does support fish. The tributary supports downstream fish by providing cooler water, and food sources.	
18.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above The wetland does not provide this function.	
18.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. There will be no undue adverse impact because the wetland does not provide this function.	
19. Wildlife Habitat	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☒ Provides resting, feeding staging or roosting habitat to support waterfowl migration, and feeding habitat for wading birds. Good habitats for these species include open water wetlands. ☒ Habitat to support one or more breeding pairs or broods of waterfowl including all species of ducks, geese, and swans. Good habitats for these species include open water habitats adjacent shallow marsh, deep marsh, shrub wetland, forested wetland, or naturally vegetated buffer zone. ☐ Provides a nest site, a buffer for a nest site or feeding habitat for wading birds including but not limited to: great blue heron, black-crowned night heron, green-backed heron, cattle egret, or snowy egret. Good habitats for these species include open water or deep marsh adjacent to forested wetlands, or standing dead trees. ☐ Supports or has the habitat to support one or more breeding pairs of any migratory bird that requires wetland habitat for breeding, nesting, rearing of young, feeding, staging roosting, or migration, including: Virginia rail, common snipe, marsh wren, American bittern, northern water thrush, northern harrier, spruce grouse, Cerulean warbler, and common loon. ☐ Supports winter habitat for white-tailed deer. Good habitats for these species include softwood swamps. Evidence of use includes deer browsing, bark stripping, worn trails, or pellet piles. ☐ Provides important feeding habitat for black bear, bobcat, or moose based on an assessment of use. Good habitat for these types of species includes wetlands located in a	

forested mosaic.

☐ Has the habitat to support muskrat, otter or mink. Good habitats for these species include deep marshes, wetlands adjacent to bodies of water including lakes, ponds, rivers and streams.

☐ Supports an active beaver dam, one or more lodges, or evidence of use in two or more consecutive years by an adult beaver population.

☐ Provides the following habitats that support the reproduction of Uncommon Vermont amphibian species including:

- ☐ 1. Wood Frog, Jefferson Salamander, Blue-spotted Salamander, or Spotted Salamander. Breeding habitat for these species includes vernal pools and small ponds.
- ☐ 2. Northern Dusky Salamander and the Spring Salamander. Habitat for these species includes headwater seeps, springs, and streams.
- ☐ 3. The Four-toed salamander; Fowler's Toad; Western or Boreal Chorus frog, or other amphibians found in Vermont of similar significance.

☐ Supports or has the habitat to support significant populations of Vermont amphibian species including, but not limited to Pickerel Frog, Northern Leopard Frog, Mink Frog, and others found in Vermont of similar significance. Good habitat for these types of species includes large marsh systems with open water components.

☐ Supports or has the habitat to support populations of uncommon Vermont reptile species including: Wood Turtle, Northern Map Turtle, Eastern Musk Turtle, Spotted Turtle, Spiny Softshell, Eastern Ribbonsnake, Northern Watersnake, and others found in Vermont of similar significance.

☐ Supports or has the habitat to support significant populations of Vermont reptile species, including Smooth Greensnake, DeKay's Brownsnake, or other more common wetland-associated species.

☐ Meets four or more of the following conditions indicative of wildlife habitat diversity:

- ☒ 1. Three or more wetland vegetation classes (greater than 1/2 acre) present including but not limited to: open water contiguous to, but not necessarily part of, the wetland, deep marsh, shallow marsh, shrub swamp, forested swamp, fen, or bog;
- ☒ 2. The dominant vegetation class is one of the following types: deep marsh, shallow marsh, shrub swamp or, forested swamp;
- ☐ 3. Located adjacent to a lake, pond, river or stream;
- ☒ 4. Fifty percent or more of surrounding habitat type is

one or more of the following: forest, agricultural land, old field or open land;

☐ 5. Emergent or woody vegetation occupies 26 to 75 percent of wetland, the rest is open water;

☐ 6. One of the following:

☐ i. hydrologically connected to other wetlands of different dominant classes or open water within 1 mile;

☒ ii. hydrologically connected to other wetlands of same dominant class within 1/2 mile;

☐ iii. within 1/4 mile of other wetlands of different dominant classes or open water, but not hydrologically connected;

☐ Wetland or wetland complex is owned in whole or in part by state or federal government and managed for wildlife and habitat conservation; and

☐ Contains evidence that it is used by wetland dependent wildlife species.

If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.

☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *lower* level.

☐ The wetland is small in size for its type and does not represent fugitive habitat in developed areas (vernal pools and seeps are generally small in size, so this does not apply).

☐ The surrounding land use is densely developed enough to limit use by wildlife species (with the exception of wetlands with open water habitat). Can be negated by evidence of use.

☐ The current use in the wetland results in frequent cutting, mowing or other disturbance.

☐ The wetland hydrology and character is at a drier end of the scale and does not support wetland dependent species.

☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *higher* level.

☐ The wetland complex is large in size and high in quality.

☐ The habitat has the potential to support several species based on the assessment above.

☐ Wetland is associated with an important wildlife corridor.

☐ The wetland has been identified as a locally important wildlife habitat by an ANR Wildlife Biologist.

19.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above The subject wetland does not provide this function.
19.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. There will be no undue adverse impact because the subject wetland does not provide this function.
20. Exemplary Wetland Natural Community	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Wetlands that are identified as high quality examples of Vermont's natural community types recognized by the Natural Heritage Information Project of the Vermont Fish and Wildlife Department, including rare types such as dwarf shrub bogs, rich fens, alpine peatlands, red maple-black gum swamps and the more common types including deep bulrush marshes, cattail marshes, northern white cedar swamps, spruce-fir-tamarack swamps, and red maple-black ash seepage swamps are automatically significant for this function. The wetland is also likely to be significant if any of the following conditions are met: ☐ Is an example of a wetland natural community type that has been identified and mapped by, or meets the ranking and mapping standards of, the Natural Heritage Information Project of the Vermont Fish and Wildlife Department. ☐ Contains ecological features that contribute to Vermont's natural heritage, including, but not limited to: ☐ Deep peat accumulation reflecting a long history of wetland formation; ☐ Forested wetlands displaying very old trees and other old growth characteristics; ☐ A wetland natural community that is at the edge of the normal range for that type; ☐ A wetland mosaic containing examples of several to many wetland community types; or ☐ A large wetland complex containing examples of several wetland community types. List species or communities of concern:
20.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above The subject wetland does not provide this function.
20.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. There will be no undue adverse impact because the wetland does not provide this function.
21. Rare, Threatened, and	☐ Function is present and likely to be significant: Any of the

Endangered Species Habitat	following physical and vegetative characteristics indicate the wetland provides this function. ☐ Wetlands that contain one or more species on the federal or state threatened or endangered lists, as well as species that are rare in Vermont, are automatically significant for this function. The wetland is also likely to be significant if any of the following apply: ☐ There is creditable documentation that the wetland provides important habitat for any species on the federal or state threatened or endangered species lists; ☐ There is creditable documentation that threatened or endangered species have been present in past 10 years; ☐ There is creditable documentation that the wetland provides important habitat for any species listed as rare in Vermont (S1 or S2 ranks), state historic (SH rank), or rare to uncommon globally (G1, G2, or G3 ranks) by the Natural Heritage Information Project of the Vermont Fish and Wildlife Department; ☐ There is creditable documentation that the wetland provides habitat for multiple uncommon species of plants or animals (S3 rank). List name of species and ranking:	
21.1. Subject Wetland	**Please explain how the subject wetland contributes to the function listed above** The subject wetland does not provide this function.	
21.2. Statement of no adverse impact	**Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.** There will be no undue adverse impact because the wetland does not provide this function.	
22. Education and Research in Natural Sciences	☐ Function is present and likely to be significant: Any of the following characteristics indicate the wetland provides this function. ☐ Owned by or leased to a public entity dedicated to education or research. ☐ History of use for education or research. ☐ Has one or more characteristics making it valuable for education or research.	
22.1. Subject Wetland	**Please explain how the subject wetland contributes to the function listed above** The subject wetland does not provide this function.	
22.2. Statement of no undue adverse impact	**Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function.** There will be no undue adverse impact because the wetland does not provide this function.	
23. Recreational Value and	☒ Function is present and likely to be significant: Any of the	

Economic Benefits	following characteristics indicate the wetland provides this function. ☐ Used for, or contributes to, recreational activities. ☐ Provides economic benefits. ☒ Provides important habitat for fish or wildlife which can be fished, hunted or trapped under applicable state law. ☐ Used for harvesting of wild foods. Comments: The cattail marsh contained in the wetland complex may provide summer feeding habitat for moose.	
23.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above The subject wetland does not provide this function as it has no ability to support .	
23.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. There will be no undue adverse impact because the wetland does not provide this function.	
24. Open Space and Aesthetics	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Can be readily observed by the public; and ☐ Possesses special or unique aesthetic qualities; or ☐ Has prominence as a distinct feature in the surrounding landscape; ☐ Has been identified as important open space in a municipal, regional or state plan. Comments: Although the wetland complex is a distinctive landscape feature with areas of open water and vegetation that contrasts with the surrounding upland forest, it is located on private property, far from public viewing points.	
24.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above The subject wetland does not provide this function.	
24.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. There will be no undue adverse impact because the wetland does not provide this function.	
25. Erosion Control through Binding and Stabilizing the Soil	☒ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Erosive forces such as wave or current energy are present and any of the following are present as well: ☐ Dense, persistent vegetation along a shoreline or stream bank that reduces an adjacent erosive force.	

	☐ Good interspersion of persistent emergent vegetation and water along course of water flow. ☐ Studies show that wetlands of sirnilar size, vegetation type, and hydrology are important for erosion control. What type of erosive forces are present: ☐ Lake fetch and waves ☐ High current velocities: ☐ Water level influenced by upstream impoundment If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level. ☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *lower* level. ☐ The stream is artificially channelized and/or lacks vegetation that contributes to controlling the erosive force. ☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *higher* level. ☐ The stream contains high sinuosity. ☐ Has been identified through fluvial geomorphic assessment to be important in maintaining the natural condition of the stream or river corridor.
25.1.Subject Wetland	**Please explain how the subject wetland contributes to the function listed above** The subject wetland provides this function at a low level because it supports a low-velocity of flow at a low gradient and through moderately dense vegetation.
25.2.Statement of no undue adverse impact	**Please explain how the proposed project will not result in any undue adverse impact to this function. Include any avoidance and minimization measures relevant to this function.** There will be no undue adverse impact because the wetland impact is temporary.

View to the northwest at the approximate location of the proposed wetland crossing. The windthrown pine trees mark the opposite side of the wetland. (July 25, 2011)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Pheeney/Towers Rd Ext. (10092) City/County: Essex/Chittenden Sampling Date: 7-25-2011

Applicant/Owner: John Pheeney State: VT Sampling Point: 1A

Investigator(s): Brian Tremback Section, Township, Range: _____

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none

Slope (%): 2 Lat: 44°31'56.99"N Long: 73° 4'49.98"W Datum: NAD 83

Soil Map Unit Name: Peru stony loam, 0 to 5 percent slopes 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 ☑	No ☐	**Is the Sampled Area within a Wetland?** **Yes** ☑ **No** ☐
Hydric Soil Present?	Yes ☑	No ☐	
Wetland Hydrology Present?	Yes ☑	No ☐	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

Located between wetland boundary flags A-9 and A-10, B-2 and B-3

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☑ Sediment Deposits (B2)
- ☑ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ☐	No ☑	Depth (inches): > 12"
Water Table Present?	Yes ☐	No ☑	Depth (inches): > 12"
Saturation Present? (includes capillary fringe)	Yes ☐	No ☑	Depth (inches): > 12"

Wetland Hydrology Present? **Yes** ☑ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 1A

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	65	✔	FACU
2. Acer rubrum	15		FAC
3. Rhamnus cathartica	5		FACU
4.			
5.			
6.			
7.			
	85 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. Rhamnus cathartica	20	✔	FACU
2. Prunus serotina	10	✔	FACU
3.			
4.			
5.			
6.			
7.			
	30 = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Impatiens capensis	75	✔	FACW
2. Carex scoparia	30	✔	FACW
3. Leersia oryzoides	20		OBL
4. Persicaria sagitatta	10		OBL
5. Equisetum arvense	5		FAC
6. Solanum dulcamara	1		FAC
7.			
8.			
9.			
10.			
11.			
12.			
	141 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	105	x 2 =	210
FAC species	21	x 3 =	63
FACU species	70	x 4 =	280
UPL species		x 5 =	
Column Totals:	226 (A)		583 (B)

Prevalence Index = B/A = 2.58

Hydrophytic Vegetation Indicators:

___ Rapid Test for Hydrophytic Vegetation

___ Dominance Test is >50%

✔ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☑ No ☐

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

SOIL

Sampling Point: 1A

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					SIL	Ap
3-6	2.5Y 4/2	70	10YR 4/6	30	C	PL/M	SIL	Bg
6-12	2.5Y 5/4	60	10YR 4/6	30	C	PL/M	GSIL	BCd
			2.5Y 5/2	10	D	PL/M		

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☑ **No** ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Pheeney/Towers Rd Ext. (10092) City/County: Essex/Chittenden Sampling Date: 7-25-2011

Applicant/Owner: John Pheeney State: VT Sampling Point: 1B

Investigator(s): Brian Tremback Section, Township, Range: _____

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none

Slope (%): 2 Lat: 44°31'56.99"N Long: 73° 4'49.98"W Datum: NAD 83

Soil Map Unit Name: Peru stony loam, 0 to 5 percent slopes 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 ☐	No ☑	**Is the Sampled Area within a Wetland?** Yes ☐ No ☑
Hydric Soil Present?	Yes ☐	No ☑	
Wetland Hydrology Present?	Yes ☐	No ☑	If yes, optional Wetland Site ID: _____

Remarks: (Explain alternative procedures here or in a separate report.)

Located between wetland boundary flags B-2 and B-3

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ☐	No ☑	Depth (inches): > 25"
Water Table Present?	Yes ☐	No ☑	Depth (inches): > 25"
Saturation Present? (includes capillary fringe)	Yes ☐	No ☑	Depth (inches): > 25"

Wetland Hydrology Present? Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 1B

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus strobus	80	✔	FACU
2. Acer rubrum	15		FAC
3. Picea glauca	10		FACU
4. Rhamnus cathartica	5		FACU
5.			
6.			
7.			
	110 = Total Cover		

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. Arctium minus	60	✔	FACU
2. Toxicodendron radicans	40	✔	FAC
3. Rhamnus cathartica	10		FACU
4. Impatiens capensis	10		FACW
5. Equisetum arvense	5		FAC
6. Dactylis glomerata	1		FACU
7.			
8.			
9.			
10.			
11.			
12.			
	126 = Total Cover		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	60	x 3 =	180
FACU species	166	x 4 =	664
UPL species	0	x 5 =	0
Column Totals:	236 (A)		864 (B)

Prevalence Index = B/A = 3.66

Hydrophytic Vegetation Indicators:

___ Rapid Test for Hydrophytic Vegetation

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☐ No ☑

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

SOIL Sampling Point: 1B

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					VFSL	Ap
6-18	2.5Y 5/4						VFSL	Bw
18-25	2.5Y 5/3	95	2.5Y 5/4	5	C	PL/M	COBFSL	BC

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

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ☐ **No** ☑

Remarks: