Crombie REIT

August 14, 2013

Wetland and Watercourse Delineation Report (PID# 40789323)
Dartmouth, Nova Scotia
GENIVAR FILE: 131-15798

GENIVAR

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Executive Summary

GENIVAR Inc. was retained by Crombie REIT to conduct a wetland and watercourse screening and delineation of the project site identified as Nova Scotia PID 40789323. The project site has an area of approximately 5.48 hectares and is located at civic address 20 Sea King Drive between Sea King Drive and Woodland Avenue, immediately south of Lancaster Drive in the City of Dartmouth, Nova Scotia.

A site inspection was carried out by GENIVAR on June 13, 2013. The presence/absence of wetlands was evaluated in accordance with the U.S. Army Corps of Engineers Wetlands Delineation Manual and the Northcentral and Northeastern Interim Regional Supplement.

A total of two wetlands and no watercourses were identified during site inspections. The total area of wetlands delineated on the project site is approximately 0.71 hectares. These wetlands are protected under the Nova Scotia Wetland Conservation Policy. Figure 2, Appendix A presents the locations of all wetlands and watercourses identified.

It is our understanding based on the Review of Site Access Options letter (prepared by GENIVAR and dated June 28, 2013) site access off of Lancaster Drive would necessitate at least partial infilling of one or both wetlands. Infilling of the wetland(s) may also be necessary to allow adequate space for parking or other site activities. This infilling would be considered an alteration under the Nova Scotia Wetland Conservation Policy (September, 2011), as such an approval for this activity from NSE would be required prior to commencement of work.

We have met on-site with the local NSE inspector, who has indicated that if an alteration application was submitted which demonstrated that infilling of the wetland(s) was unavoidable to allow development of the site, and all other requirements in the alteration application were met, the alteration would likely be accepted and approved by the department. As part of this approval, the proponent would be required to compensate for the loss of wetland habitat by hiring a contractor to create new wetland habitat off site, typically at a ratio of 2:1.

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APPENDICES

1 Introduction

GENIVAR Inc. was retained by Crombie REIT to conduct a wetland and watercourse screening and delineation of the project site consisting of Nova Scotia PID 40789323. The project site has an area of approximately 5.48 hectares. The location and area screened is shown on the Site Plan, Figure 1, Appendix A.

The project site is located at civic address 20 Sea King Drive between Sea King Drive and Woodland Avenue, immediately south of Lancaster Drive in the City of Dartmouth, Nova Scotia. The exact location and extent of the project site is shown in Figure 1, Appendix A.

The purpose of this project is to determine the location and extent of any wetlands and watercourses identified on the project site during the site visits, and to determine, through consultation with Nova Scotia Environment (NSE), the potential options for altering the existing wetlands on site. This information will allow for a better understanding of the site's natural features and their influence on the development process.

2 Background

2.1 Site Description

The project site has an approximate total area of 5.48 hectares and is located in Dartmouth, Nova Scotia, and consists entirely of undeveloped vegetated land.

The majority of the site (approximately 80%) has been classified by Department of Natural Resources (DNR) Forest Inventory Mapping as a natural mixed wood forest stand (74-26% softwood species by basal area) based on satellite imagery collected in 2003, the remaining land is classified as general wetlands (any wet area, not identified as a lake, river or stream).

The interior of the project site is relatively gently sloping to the north-west with the exception of a steep gradient south-west of wetland WL1. The site drains north-west to Albro Lake and eventually flows into Halifax Harbour.

The site is surrounded to the south and west by low density residential developments along Sea King Drive to the west and Ernest Avenue to the south. Woodland Avenue and Lancaster Drive along with residential developments beyond are located to the east and north of the site respectively. Albro Lake is located approximately 120 metres west of the site and Little Albro Lake is located approximately 140 metres to the south-west.

2.2 Project Scope and Limitations

2.2.1 Background Mapping Review

Prior to the commencement of field work at the site, a desktop review of DNR Significant Habitat Database, Service Nova Scotia and Municipal Relations Property Online (POL) Topographic Mapping and available satellite imagery was completed. The locations of wetlands shown on mapping were noted to allow for ground-truthing during field work (see Figure 1, Appendix A for the location of mapped wetlands). The delineated wetlands WL1 and WL2 were identified during the mapping review process. Knowledge of the site topography and distribution of natural features also allowed site visits to be focused on areas with an elevated potential for wetlands and watercourses not shown on mapping.

2.2.2 Field Work

A site visit was carried out on June 13, 2013. The presence/absence of wetlands was evaluated in accordance with the U.S. Army Corps of Engineers Wetlands Delineation Manual and the Northcentral and Northeastern Interim Regional Supplement. During the field work the site was traversed using a set of evenly spaced transects (50 – 100 m apart) in search of areas showing typical wetland characteristics. The vegetation, soil and hydrology of any perspective wetland areas were assessed in order to determine whether or not the conditions present constitute a wetland. When a wetland was identified a boundary determination was made, the position of this boundary was recorded using a Differential GPS unit, and marked in the field with pink flagging tape. The wetland was classified using the Corps of Engineers Wetland Delineation Manual and the Northcentral and Northeast Interim Regional Supplement and the NovaWet wetland functional assessment protocol. The assessment methodology is described in detail in Appendix B.

3 Site Inspection Results

3.1 Wetlands

Two wetlands (WL1 and WL2) were identified during the site inspection. The total wetland area delineated on the project site is approximately 0.71 hectares which represent approximately 13% of the total site area.

Wetlands WL1 and WL2 are classified as shrub bogs, although wetland WL2 was flooded and contained significantly more surface water that WL1. Neither wetland is contiguous with a watercourse. This is important to note as Halifax Regional Municipality (HRM) planning by-laws provide a riparian buffer of 20 metres, in which development cannot take place, for wetlands which are contiguous with a watercourse. This buffer zone also applies to all watercourses on the property.

Section 3.1.1 provides a general description of the wetlands identified on the site, for further details of the individual wetlands refer to the wetland data sheets in Appendix C. Photos of wetlands have been compiled as a Photographic Log, attached in Appendix D.

3.1.1 Bogs

Bogs are described in the Canadian Wetland Classification System (CWCS) as wetlands characterized by an accumulation of peat, having a ground surface which is raised or level with the surrounding terrain, with a water table at or slightly below the surface and a primary water source of precipitation, fog and snowmelt. Bogs may be treed or treeless and are usually covered with *Sphagnum spp.* and ericaceous shrubs.

Wetlands WL1 and WL2 were identified as shrub bogs during site inspections. Tree stratum vegetation was most prominent along the wetland edges and was dominated by red maple (*Acer rubrum*). A dense shrub layer was observed, dominated by mountain holly (*Nemopanthus mucronatus*) and rhodora (*Rhododendron canadense*). Dominant herbaceous species identified were reedgrass (*Calamagrostis stricta*) and sphagnum moss (*Sphagnum spp.*) ground cover.

Hydric soil conditions were identified in the bogs, and classified as histosols, having 40 cm or more of the upper 80 cm of soils consisting of organic material. Positive indicators for wetland hydrology including saturation at the surface, standing surface water and shallow groundwater tables were also observed.

3.2 Watercourses

No watercourses were observed on the project site. The wetlands appear to be fed mainly by precipitation or possibly groundwater. Wetland WL1 is drained by a culvert passing under Lancaster

Avenue to a wetland on the north side of the street, and WL2 drains north-west under Sea King Drive towards Albro Lake.

4 Discussion of Findings

A total of two wetlands, having a total area of approximately 0.71 hectares, and no watercourses were identified on the project Site.

The wetlands on the subject site are protected from alteration (including infilling) under the Nova Scotia Wetland Conservation Policy. When a wetland alteration cannot reasonably be avoided, an application to proceed with the alteration must be submitted through the Wetland Alteration Approval process. Alterations may be exempt from this process if the wetland is less than 0.01 hectares in area or if a wetland is created by humans on upland habitat. Other exemptions are listed on page 10 of the policy. None of the wetlands on the subject site are believed to be exempt from the policy; therefore, if the proposed development will impact the wetlands, an alteration application must first be approved by NSE. Alterations which will impact a total of two or more hectares of wetland require assessment under the Environmental Assessment Act.

As noted previously, no watercourses were identified on the subject site; therefore, the HRM riparian buffer zone of 20 metres which is to be applied to all watercourses, and wetlands which are contiguous with a watercourse (policy E-10, HRM Regional Planning Strategy), is not applicable to this site. There is no requirement to buffer wetlands which are not contiguous with a watercourse, however; the Nova Scotia Wetland Conservation Policy does encourage the use of buffers between wetlands and development.

It is our understanding based on the Review of Site Access Options letter (prepared by GENIVAR and dated June 28, 2013) site access off of Lancaster Drive would necessitate at least partial infilling of one or both wetlands. Infilling of the wetland(s) may also be necessary to allow adequate space for parking or other site activities. GENIVAR has met on-site with the local NSE inspector Donna MacDonald, to discuss any site specific requirements or constraints for a wetland alteration at the project site. Ms. MacDonald has indicated that if an alteration application was submitted which demonstrated that infilling of wetland habitat was unavoidable to allow development of the site, and all other requirements in the alteration application were met, the alteration would likely be accepted and approved by the department.

The Nova Scotia wetland policy requires that alteration applications include functional assessment of the wetland(s) to be altered and a compensation project to offset the loss of wetland habitat, typically at a ratio of 2:1 (two square metres of compensation for every square metre altered). Alteration can include not only infilling of a wetland but also changes made to inflow or outflow characteristics.

We recommend the findings of this investigation should be considered during the design process to minimize or eliminate the need for alterations to wetlands on the Site. Should wetland alterations be necessary, approval from NSE will be required prior to the commencement of work.

5 Closure

This report has been completed for the sole benefit of Crombie REIT. Any other person or entity may not rely on this report without the express written consent of GENIVAR and Crombie REIT. GENIVAR accepts no responsibility for damages suffered by any third party as a result of decisions made, or actions conducted based on this report. No other warranties are implied or expressed. This report was written by Kyle Blades EIT, and reviewed by Virgil D. Grecian, M. Sc., Senior Biologist.

The findings presented in this report are based on field observations made on June 13, 2013. These results rely on conditions identified during the site visits which may alter over time.

We trust that this report meets your requirements at this time. If there are any questions, do not hesitate to contact our office.

Yours truly,

GENIVAR Inc.

Original Signed Original Signed

Kyle Blades, EIT
Environmental Project Engineer

Virgil D. Grecian, M. Sc.
Senior Biologist

Appendix A
Figures

LEGEND

- SITE BOUNDARY
- ELEVATION CONTOUR
- PROVINCIALLY MAPPED WATERCOURSES
- PROVINCIALLY MAPPED WETLANDS

ALBRO LAKE

SEA KING DR.

LANCASTER AVE.

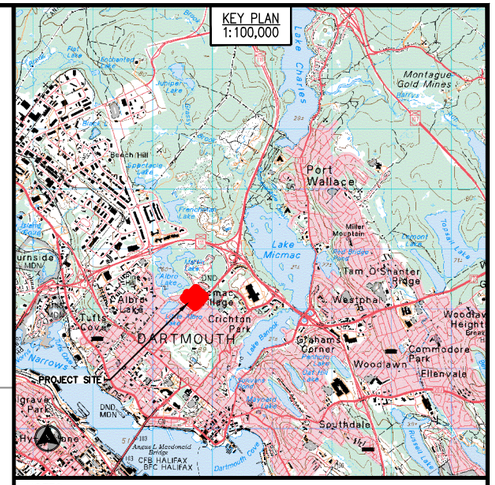
WOODLAND AVE.

ELMORE DR.

BRANNON DR.

N

KEY PLAN
1:100,000



NOTES:

Sources:

- Nova Scotia Natural Resources - Significant Habitats Mapping online GIS viewer
- Service Nova Scotia and Municipal Relations Property Online (POL) Topographic Mapping

TITLE:

FIGURE 1

SITE PLAN

PROJECT:

WETLAND SCREENING AND DELINEATION

WHITES LAKE, NS

PROJECT NO:

131-15798

DRAWN BY:	CHECKED BY:	DATE: (YYYY/MM/DD)	REV #
KRB	VDG	2013/07/26	0

SCALE: 1:1,500 METRIC

30 15 0 30 60

GENIVAR

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GENIVAR REF. NO.: 131-15798 K:\DARTMOUTH\2013\131-15798 CROMBIE_WOODLAND AVE\DWG\ENVIRONMENTAL\131-15798-WL.DWG FIG1 PRINTED: 11:34 AM 2013/07/26 BY: KYLE BLADES

LEGEND

SITE BOUNDARY

WETLAND

ALBRO LAKE

LANCASTER AVE.

SEA KING DR.

WOODLAND AVE.

ELMORE DR.

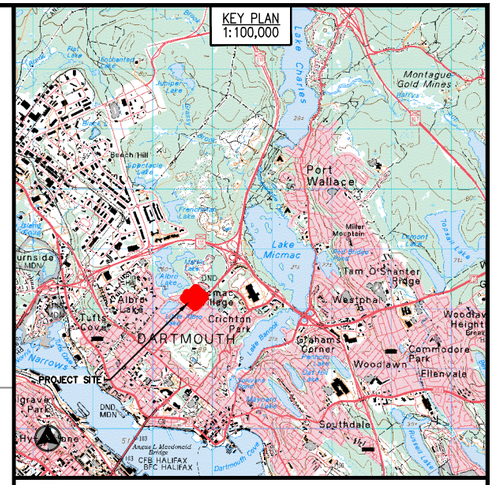
BRANNON DR.

WL1

WL2

N

KEY PLAN
1:100,000



NOTES:

Sources:

- Nova Scotia Natural Resources - Significant Habitats Mapping online GIS viewer
- Service Nova Scotia and Municipal Relations Property Online (POL) Topographic Mapping

TITLE:

FIGURE 1

SITE PLAN

PROJECT:

WETLAND SCREENING AND DELINEATION

DARTMOUTH, NS

PROJECT NO:

131-15798

DRAWN BY:	CHECKED BY:	DATE: (YYYY/MM/DD)	REV #
KRB	VDG	2013/07/26	0

SCALE: 1:1,500 METRIC

30 15 0 30 100

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GENIVAR REF. NO.: 131-15798 K:\DARTMOUTH\2013\131-15798 CROMBIE_WOODLAND AVE\DWG\ENVIRONMENTAL\131-15798-WL.DWG FIG 2 PRINTED: 11:34 AM 2013/07/26 BY: KYLE.BLADES

Appendix B
Methodology

Methodology

Wetlands are identified and delineated in accordance with the Corps of Engineers Wetland Delineation Manual and the Northcentral and Northeast Interim Regional Supplement (Corps Manual). For an area to be identified as wetland it must show positive indicators in all three areas of assessment. The areas of assessment used are: hydrophytic vegetation, hydric soils and wetland hydrology.

The soil, vegetation and hydrology are evaluated at a test pit location. If a wetland is identified, an upland test pit location is selected and evaluated for the same criteria. A wetland boundary is determined between the upland and wetland test pit locations; this boundary is then extended around the exterior of the wetland, marked with flagging tape and recorded using a Differential GPS unit. When necessary, additional soil probes are observed to confirm the boundary.

Hydrophytic Vegetation

As defined in the Corps Manual, hydrophytic vegetation is the community of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to exert a controlling influence on the plant species present. The vegetation is assessed based the indicator status of the dominant plant species in each strata (tree, shrub and herbaceous stratum). Indicator status varies from obligate (>99% of occurrences are in a wetland) to upland (<1% of occurrences are in a wetland). An assessment for hydrophytic vegetation is carried out at the wetland and upland test pit locations.

Hydric Soils

Hydric soils are soils that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper layers. Hydric soil indicators are formed predominantly by the accumulations or loss of iron, manganese, sulphur, or carbon compounds in a saturated and anaerobic environment. Examples of hydric soils include organic deposits caused by the accumulation of organic matter (lack of oxygen preventing decomposition) and mineral soils with gleyed or depleted matrices (soils stripped of iron and manganese). Soil profiles are observed in any suspected wetland, and the presence or absence of a positive indicator for hydric soils is noted. The soil profile is also observed at the upland test pit location to help determine the boundary location.

Wetland Hydrology

A site is considered to show a positive indicator for wetland hydrology when either one primary indicator or two secondary indicators are observed. Common primary and secondary indicators are listed below:

Primary Indicators

- Surface water, high water table, saturation
- Water marks on trees
- Sediment deposits
- Water-stained leaves
- Drift deposits

Secondary Indicators

- Drainage patterns
- Stunted or stressed plants
- Dry-season water table

Appendix C
Data Sheets

WETLAND DELINEATION DATA FORM – NOVA SCOTIA

Project/Site: Crombie - Woodland Municipality/County: Halifax Co. Sampling Date: June 13/13

Applicant/Owner: Crombie REIT Sampling Point: WL1 TP1 (Upland)

Investigator(s): KRB / VDG Affiliation: GENIVAR INC.

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

Slope (%): 0 Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name/Type: _____ Wetland Type: _____

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 _____

Hydric Soil Present? Yes _____ No ✓

Wetland Hydrology Present? Yes _____ No ✓

Is the Sampled Area within a Wetland? Yes _____ No ✓ (upland Point)

If yes, optional Wetland Site ID: WL1 / WL2

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. White Pine	30	✓	FAC
2. Grey birch	15		
3. Red Maple	20	✓	FAC
4. White birch	5		
5. Red spruce	10		
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. Black Holly	50	✓	FACW
2. Sheep laurel	20	✓	FAC
3. Red spruce	2		
4. Small blueberry	5		
5. Witherasin	5		
Red oak	83	= Total Cover	
Herb Stratum (Plot size: _____)	1		
1. Bracken Fern	10	✓	FACU
2. Starflower	1		
3. Sphagnum sp.	5	✓	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	16	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 83 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

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.

Hydrophytic Vegetation Present? Yes ✓ No _____

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

SOIL

Sampling Point: WL1TP1

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
4"	duff - Compact needles + decaying leaves.							
9"	organic soil Mixed w peat + Sand							
	- Rock -							

[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)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ Piedmont Floodplain Soils (F19)
- ___ Red Parent Material (TF2)
- ___ 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: well drained Soil on Steep Slope.

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)
- ___ 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): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

No evidence of wetland hydrology.

Remarks:

WETLAND DELINEATION DATA FORM – NOVA SCOTIA

Project/Site: Crombie – Woodland Municipality/County: Halifax Co. Sampling Date: June 13/13

Applicant/Owner: Crombie REIT Sampling Point: WL1TP2

Investigator(s): KLB / VDG Affiliation: GENIVAR INC.

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

Slope (%): 0 Lat: Long: Datum:

Soil Map Unit Name/Type: Wetland Type: Shrub bog.

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 ____	If yes, optional Wetland Site ID: WL1 / WL2
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: (Explain alternative procedures here or in a separate report.)
WL1 + WL2 Showed the same conditions + are suspected to have been connected prior to halifax water easement + pipe installation.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Red Maple	15	✓	FAC
2. Grey birch.	1		
3.			
4.			
5.			
	16 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1. Mountain Holly	25	✓	FAC
2. Speckled Alder	5		
3. Rhodora	10	✓	FAC.
4.			
5.			
	40 = Total Cover		
Herb Stratum (Plot size: ____)			
1. Sedgrass	15	✓	obl
2. Rhodora			
3. Sphagnum sp	—		obl
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ____

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.

Hydrophytic Vegetation Present? Yes ✓ No ____

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

SOIL

Sampling Point: _____

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
6"	water							
>16"	organic soil,		Poor mineral		development			

[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)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ Piedmont Floodplain Soils (F19)
- ___ Red Parent Material (TF2)
- ___ 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:

Histosol.

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)
- ___ 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): _____

Water Table Present? Yes ✓ No _____ Depth (inches): Ø

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

Highly Saturated + Standing water in many Places.

Adapted from U.S. Army Corps of Engineers form for Northeast-North Central Supplement for use in Nova Scotia (2011)

Appendix D
Photographic Log

Photo Log

Wetland WL1 - Shrub Bog

Wetland WL1 – Edge of Shrub Bog

Wetland WL2 – Flooded Shrub Bog

Wetland WL2 – Flooded Shrub Bog