BASELINE WETLANDS SURVEYS
FOR
PROPOSED WABUSH 3 MINE SITE AND POTENTIAL SKI HILL LOCATION
LABRADOR CITY, NEWFOUNDLAND AND LABRADOR

Submitted to:

Iron Ore Company of Canada
2 Avalon Drive
Labrador City, NL
Canada A2V 2Y6

Submitted by:

AMEC Environment & Infrastructure
a Division of AMEC Americas Limited
133 Crosbie Road, PO Box 13216
St. John's, Newfoundland and Labrador
Canada A1B 4A5

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1.0 INTRODUCTION

The Iron Ore Company of Canada (IOC) has been operating the Carol Project in Labrador West since the early 1960s. The company's current mining operations consist of open pit mines, mineral processing (concentrator and pellet plant) and tailings management facilities, as well as transportation infrastructure and other associated components and activities. The facilities cover an area of approximately 11,000 hectares.

IOC is proposing to construct and operate a new open pit mine, Wabush 3 Mine, at its Labrador West mine site.

The Wabush 3 Mine will be a conventional open pit mine which will serve the IOC operations in two fundamental ways:

- Allow flexibility in providing iron ore feed to its existing concentrator plant to achieve and maintain production of iron concentrate at the mill's rated capacity; and
- Provide a new source of iron ore to extend the operating life of its Carol Project.

The proposed project, as currently planned, will include:

- An open pit mine, located just southeast of the existing Luce Mine, which contains an estimated 700 million tonnes of iron ore and has a planned operating life of 25 years;
- A waste rock disposal site, to be located just west of Wabush 3; and
- A haulage road to the northeast of Wabush 3, linking the open pit with existing ore conveyor and concentrator facilities.

The existing Smokey Mountain ski hill is located just east of the pit design limit for the Wabush 3 Mine. IOC, in conjunction with the Smokey Mountain Ski Hill Association, is currently evaluating two options for the future of downhill skiing in Labrador City:

- The coexistence of Wabush 3 and Smokey Mountain; and
- The relocation of downhill skiing to a new location near Beverley Lake, known as Wabush 4.

In planning for environmental assessment of Wabush 3 Mine and the possible development of Wabush 4 ski hill, IOC has considered the existing wetlands baseline information for both locations and determined that additional wetland surveys were needed.

Accordingly, this report documents the results of survey work conducted in 2012 to further understand the existing wetland habitat in the Wabush 3 and Wabush 4 locations.

This information will be helpful to IOC as it proceeds with the planning, design and implementation stages of the Wabush 3 Mine project and will assist the Smokey Mountain Ski Hill Association with its decision making and planning should relocation be determined.

2.0 REGULATORY REQUIREMENT AND DEFINITIONS

Several definitions of "wetland" exist in literature, examples of which are provided below:

- A wetland is any land that is “covered with water for a part of the day or year. Wetland boundaries are, usually, established in the spring, when water levels are highest” (Canadian Wildlife Service, 2002).
- A wetland is land “where the water table is at, near, or above the surface or which is saturated for a long enough period to promote such features as wet-altered soils and water tolerant vegetation” (Environment Canada, 1996).
- A wetland is land that is “saturated with water long enough to promote wetland or aquatic processes as indicated by poorly drained soils, hydrophytic (i.e., water-loving) vegetation and various kinds of biological activity which are adapted to a wet environment” (Environment Canada, 1991).
- Wetlands are areas of “marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters” (Ramsar Convention on Wetlands,1971).

Although each definition is slightly different, the relevant common aspects that define a wetland are:

- Land that is saturated or covered by water for some time during the growing season;
- Poorly drained soils; and
- Predominantly, hydrophytic vegetation.

From these features that define a wetland, it is clear that preserving wetland habitat is dependent on maintaining existing soil, vegetation and hydrologic conditions at a site.

Wetlands are environmentally significant for several reasons, including: water filtration; water storage (water recharge); flood reduction and control; carbon absorption; erosion control; and wildlife habitat (Nova Scotia Museum, 1996). Loss of wetlands has resulted, to some degree, in increased flooding, decreased water quality, desertification, and declines of fish and wildlife (Lynch-Stewart, 1996).

2.1.1 Federal Policy on Wetland Conservation

The *Federal Policy on Wetland Conservation* (Government of Canada, 1991) directs all federal government departments to conserve or sustain wetland functions during delivery of their programs. One of the main considerations in developing the Policy was Canada’s membership in the Ramsar Convention on Wetlands (1971), signed by Canada in 1981. The Ramsar Convention is a global conservation treaty specifically dealing with wetland loss and sustainable use.

Other considerations in developing the Policy were Canada’s commitments under the North American Waterfowl Management Plan and the potentially beneficial influences of land use decisions by federal departments and agencies (Lynch-Stewart *et al*., 1999).

The two (2) key commitments in the federal wetland policy are:

- No net loss of wetland functions on federal lands through mitigation; and

- Enhancement and rehabilitation of wetlands in areas where wetland loss has reached critical levels.

Implementation of strategies contained in the Federal Policy on Wetland Conservation is outlined in the *Implementation Guide for Federal Land Managers* (Lynch-Stewart *et al*., 1996). The Guide also outlines the hierarchy for mitigation alternatives for meeting the goal of no net loss of wetland function:

- First – Avoid impacts;
- Second – Minimize unavoidable impacts; and
- Third, and last – Compensate for residual impacts that cannot be minimized.

In addition, the Guide provides advice on integrating wetlands into the project planning process, and details on the related process under the *Canadian Environmental Assessment Act*.

2.1.2 Newfoundland and Labrador Provincial Policy for Development in Wetlands

The *Water Resources Act* establishes criteria for issuing permits for all development activities in and affecting wetlands in Newfoundland and Labrador (NL Department of Environment and Conservation, 2002). The Act outlines a number of scenarios where development in or affecting wetlands is not permitted and includes:

- Infilling, drainage, dredging, channelization, removal of vegetation cover or removal of soil or organic cover of wetlands which could aggravate flooding problems or have unmitigable adverse water quality or water quantity or hydrologic impacts;
- Developments of wetlands which are located within the recharge zones of domestic, municipal or private groundwater wells; and
- Placing, depositing or discharging any raw sewage, refuse, municipal and industrial wastes, fuel or fuel containers, pesticides, herbicides or other chemicals or their containers, or any other material which impairs or has the potential to impair the water quality of wetlands.

The Act further describes scenarios requiring permits before activities in or affecting wetlands can be approved including:

- Removal of the surface vegetation cover of wetlands for extraction of peat, or for preparing the area for agricultural or forestry activities;
- Construction of ditches, tile fields and other types of flow conveyances to drain wetlands for extraction of peat, or for preparing the area for agricultural or forestry operations;
- Removal of the top soil or organic cover of wetlands for use as horticultural or fuel peat, or for preparing the area for agricultural or forestry activities;
- Infilling, dredging, or any other disturbance of wetlands for the construction of permanent or temporary roads, bridges, culverts, trails, power and telecommunication transmission lines, pipelines, etc., through wetlands which would necessitate only minor disturbances to the vegetation and organic cover, the flow drainage pattern of the area and ground slope;

- Infilling, dredging or other disturbance of wetlands for the construction of residential, commercial, industrial and institutional facilities or extension and upgrading of existing buildings and facilities within wetland areas;
- Development related to recreational activities including the setting up of camp grounds, permanent and semi-permanent facilities, etc., on wetland areas; and
- Construction of flow control structures to alter the normal water level fluctuations of wetlands for the purposes of enhancing the quality or quantity of fish and other wildlife habitat.

2.1.3 Municipal Conservation Plans

Habitat conservation plans (TLC 2010 and TW 2009) have been developed for and signed by the Towns of Labrador City and Wabush. The Town of Labrador City signed a Municipal Wetland Stewardship Agreement in March 2006 while Wabush signed an agreement to conserve wetland habitat in March of 2005. These documents have become an important link in wetland conservation.

The purpose of these conservation plans are to provide guidance in governing activities which may impact wetlands and waterfowl in order to minimize these impacts in wetlands within the areas designated for conservation. In accordance with these agreements, the Towns of Wabush and Labrador City manage wetland habitat within the Management Units and Stewardship Zones in conjunction with technical advice provided by NL Department of Environment, Wildlife Division.

The goals of these plans include:

- To conserve wetlands located within the designated Management Units and to promote wise use of wetlands located within designated Stewardship Zones;
- To maintain and/or increase wildlife use of those areas, particularly by waterfowl and other avian species; and
- To increase public awareness of the importance of wetland habitats for conserving waterfowl and other wildlife.

3.0 SCOPE OF WORK

In Newfoundland and Labrador wetland habitat is protected by a number of federal, provincial, and municipal policies and regulations. Typically, work involving the potential alteration or loss of wetland habitat will require a permit prior to undertaking such proposed work where compensation for the loss of wetland habitat is generally required as a permit condition. A number of specific wetlands (highly significant wetlands such as RAMSAR sites) and/or larger management areas encompassing multiple wetlands (Management Units managed by the Towns of Wabush and Labrador City) are protected in such a way that activities potentially resulting in negative impacts to these areas are prohibited. Given the importance of wetland conservation in Newfoundland and Labrador as well as across Canada, it is imperative that wetland habitat be identified early in the planning stages of any major project where certain activities may result in negative impacts to this habitat type.

The objectives of the wetland survey were to provide information on the size and distribution of wetlands and associated ecosystem values provided by wetlands located within the Project Study Area. These objectives were realized through the following activities:

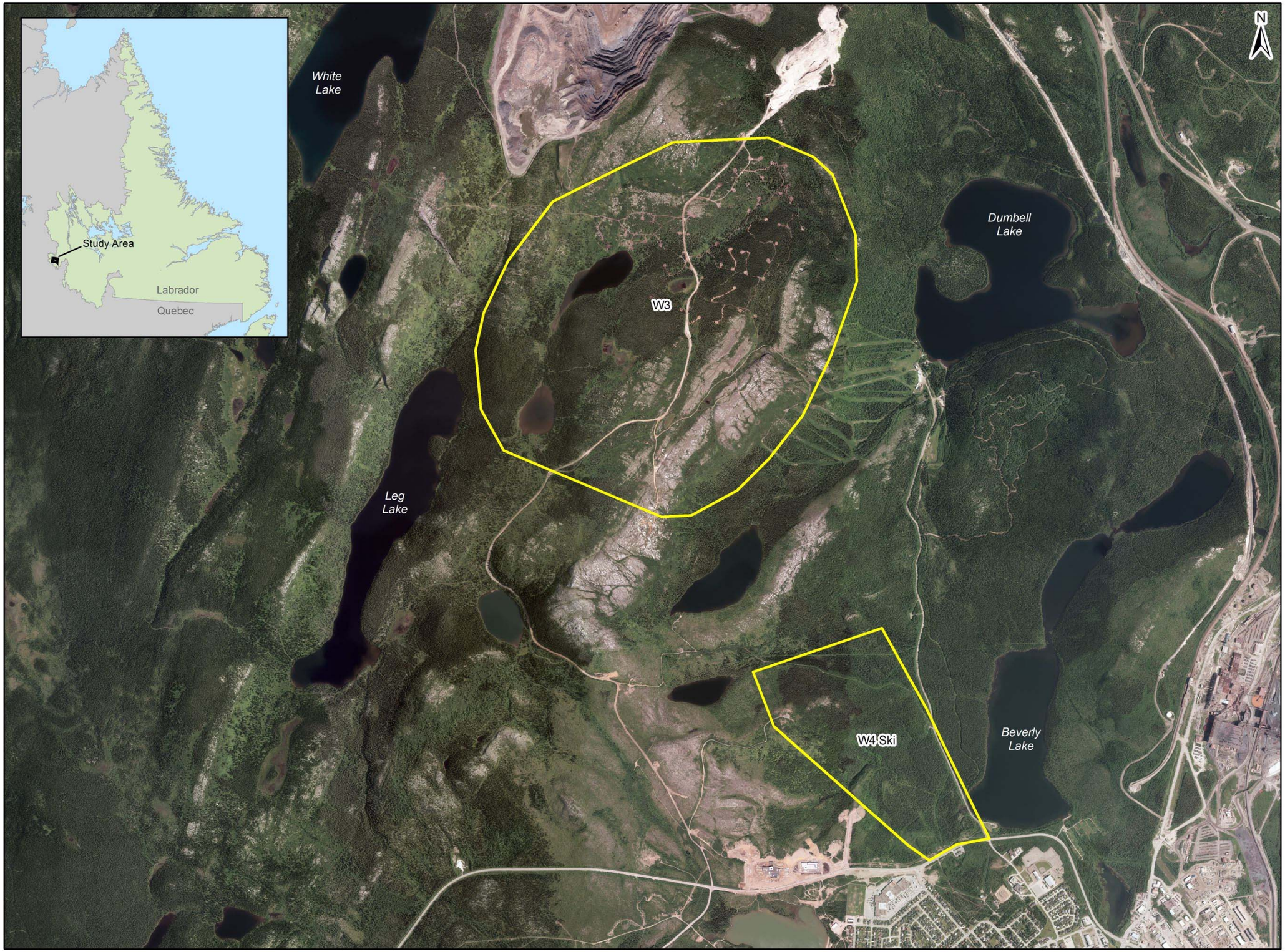
- Review aerial photographs and existing maps to identify location of wetlands;
- Determine wetlands in the field using three parameter approach (Soil, Vegetation, and Hydrology);
- Mark wetland boundaries with physical markers and GPS; and
- Report preparation including photographs and field data sheets.

3.1 EXISTING SITE CONDITIONS

Labrador is located within the Eastern Taiga Shield Ecozone (Bell 2002). Labrador City is located in the Smallwood Reservoir- Michikamau Ecoregion. This area can be classified as a mid-subarctic forest where typical boreal forest communities dominate (Bell 2002). Winters are long and very cold and summers are short and cool (Bell 2002). The average daily temperature ranges from 13.7^{o}C to -22.7^{o}C. Average daily precipitation ranges from 0.5mm to 11.5mm (EC 2012).

Dominant vegetation communities in the area include closed canopy coniferous forests, open Black Spruce/ Lichen forests, alpine shrub and sparsely vegetated rock outcrops. Soils in the area tend to be shallow and consist of sandy till overburden with Meta-ironstone, quartzite bedrock (NLDNR 2012).

Surface and ground water flow in the Wabush 4 Study Area is south to north following a decline in elevation and into Beverley Lake. The Wabush 3 Study Area is located on a watershed divide where surface and groundwater flow in the western side of the study area is northeast to southwest. Flow in the eastern side of the Study Area is in the opposite direction (southwest to northeast) toward Dumbell Lake.



NOTES

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5. ALL DATA IN NAD27 UTM ZONE 19.

No.	Date	Description	Drawn	Chk'd	App'd

LEGEND

Study Area

AMEC Environment & Infrastructure
AMEC Americas Limited

CLIENT
Rio Tinto
Iron Ore Company of Canada

PROJECT DESCRIPTION
IOC Wetland Baseline Surveys

DRAWING TITLE
Study Area Locations

PROJECT NUMBER
TF1243033.2010

SCALE
0 460 920
Meters

DRAWN BY	APPROVED BY	REVIEWED BY
JA	SB	BP

FIGURE NO.	DATE	REV
3.1	November 2012	0

4.0 METHODS

Methods for wetland delineation and functional assessments have not yet been developed specifically for the Province of Newfoundland and Labrador. As such, methods for wetland delineation and functional assessments developed and accepted in Nova Scotia wetlands were utilized during the current study.

4.1 WETLAND DELINEATION METHOD

The determination of wetland habitat in the field was based largely on the US Army Corps of Engineers Wetland Delineation Manual (the Manual) (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual (USACE 2012). Wetland areas within the Study Areas were identified and mapped at selective locations using wetland indicators and definitions from the standard delineation approach typically used in other provinces such as Nova Scotia and New Brunswick as there is no standard protocol established specific to Labrador. This consisted of using representative “paired data points” (i.e., one sample point in the wetland habitat and one sample point in the adjacent upland habitat) and applies the three parameter approach as described in the US Army Corps of Engineers Manual.

Wetland data were recorded on Wetland Delineation Data Sheets developed by the Maritimes College of Forestry Technology for the province of Nova Scotia (Appendix A). *Munsell Soil Color Charts* (Gretagmacbeth, 2000) were used to aid in identifying hydric soils in the field. The *Canadian System of Soil Classification* (SCWG 1998) was used to aid in description of soil characteristics. *Roland’s Flora of Nova Scotia* (Roland et al. 1998) and *Flora of New Brunswick* (Hinds 2000) aided with plant nomenclature and identification. The location of data points and selected wetland boundary points were recorded by Global Positioning System (GPS) using a Garmin GPSmap76 receiver capable of accuracy to within 2 meters.

At each sample site, two sample points were chosen which represent wetland and upland habitat at the wetland boundary. The location of each sample point was recorded with the GPS and marked using pink flagging tape with a unique GPS waypoint name which are reflected in the field data sheets in Appendix A and the waypoint table in Appendix B. The identified vegetation communities were then used to delineate the wetland boundary. Selected boundary flags were GPS’d, as indicated in the figures located in Figure 5-1. All recorded GPS points are presented in Appendix B. Representative Site photos of wetland areas, adjacent upland areas, and soil pit exposures were also collected (Appendix C).

4.1.1 Wetland Determination

The definition of wetlands includes the phrase "sustains aquatic processes as indicated by the presence of hydric soils, hydrophytic vegetation and biological activities adapted to wet conditions." To be determined a wetland; the following three criteria should be met:

- A majority of dominant vegetation species are wetland associated species;
- Hydrologic conditions exist that result in periods of flooding, ponding, or saturation during the growing season; and

- Hydric soils are present.

4.1.1.1 Vegetation

Hydrophytic vegetation is defined as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanent or periodically saturated soils over periods of sufficient duration to exert a controlling influence on the plant species present (Environmental Laboratory 1987). Hydrophytic vegetation should be the dominant plant type in the plant community (Environmental Laboratory 1987). Dominant plant species were determined as described below.

Dominant plant species observed at each data point were classified according to their Indicator Status Group (probability of occurrence in wetlands) (Table 4.1), in accordance with the Nova Scotia Wetland Indicator Plant List (Blaney, 2011). These indicators are used since no list has been prepared specifically for Labrador and this area most closely resembles the flora of Labrador and the climate regime. It is important to note that despite similarities in flora between Labrador and Nova Scotia, many species considered to be good "wetland indicators" in Nova Scotia inhabit a much broader range of soil moisture conditions in Labrador and are found to occur in dryer conditions representing upland habitat in addition to wetlands.

Table 4.1: Classification of Wetland-Associated Plant Species

Plant Species Classification	Abbreviation[2]	Probability of Occurring in Wetland
Obligate	OBL	>99%
Facultative Wetland	FACW	66-99%
Facultative	FAC	33-66%
Facultative Upland	FACU	1-33%
Upland	UPL	<1%
No indicator status	NI	Insufficient information to determine status
Plants That Are Not Listed[3] (assumed upland species)	NL	Does not occur in wetlands in any region.

1. Source: USFWS 1988.
2. A '+' or '–' symbol can be added to the classification to indicate greater or lesser probability, respectively, of occurrence in a wetland.
3. Not used in this assessment since the List was not developed for Labrador.

The Dominance Test (DT) was the main method used to determine if the dominant plant species at each data point location is hydrophytic or not. The DT method identifies the dominant plant species in the community where by dominance is established by the "50/20" rule. Based on this rule, dominant plant species in a particular stratum within a plot (i.e. Tree, Sapling/Shrub, Herb, and Woody Vine) must have an estimated cover of at least 50% of the total vegetation cover for the stratum in which it occurs. If the cover of one single species does not represent 50% of the total cover for the stratum, then a combination of species with the highest cover within the plot are used until the combination of the associated cover reaches 50%. In addition, species occurring within a stratum having an estimated cover of 20% of that stratum are also considered dominant. If greater than 50% of the total number of dominant

species has a wetland indicator status of FAC, FACW, or OBL, then the site is considered to be dominated by hydrophytic vegetation.

4.1.1.2 Soils

A hydric soil is defined as a soil that formed under conditions of saturation, flooding, or ponding lasting long enough during the growing season to develop anaerobic conditions in the upper part of the soil profile (USDA-NRCS, 2007). Indicators that a hydric soil is present include soil color (gleyed soils and soils with bright mottles and/or low matrix chroma), aquic or preaquic moisture regime, reducing soil conditions, sulfidic material (odour), soils listed on hydric soils list, iron and manganese concretions, organic soils (Histosols), histic epipedon, high organic content in surface layer in sandy soils, and organic streaking in sandy soils (USACE 2012).

A soil pit was excavated to a minimum depth of 40 centimetres or refusal at each data point. The soil was then examined for hydric soil indicators. The matrix color and mottle color (if present) of the soil was determined using the Munsell Soil Color Charts.

4.1.1.3 Hydrology

Wetlands, by definition, either periodically or permanently have a water table at, near or above the land's surface or are saturated with water. To be classified as a wetland, a site should have at least one primary indicator or two secondary indicators of wetland hydrology. Primary indicators of wetland hydrology may include, but are not limited to: water marks, drift lines, sediment deposition, drainage patterns, visual observation of saturated soils, and visual observation of inundation. In addition to the primary indicators, there is a variety of secondary wetland hydrology indicators. Secondary indicators include, but are not limited to: oxidized root channels in the upper 12 inches (30.5 centimetres), stunted vegetation, and local soil properties. When no primary indicators of wetland hydrology are observed at a data point, two or more secondary indicators are required to confirm wetland hydrology.

4.2 FUNCTIONAL ASSESSMENT METHODS

Environment Canada and the US Army Corps of Engineers both describe wetland ecological functions as the natural processes (physical, chemical, biological) that a wetland provides that are independent from the benefits these processes provide to humans (Hanson et al., 2008; USACE, 1999). This is differentiated from wetland values which reflect the ecosystem services wetlands provide to humans and the associated societal value. These "values" are a product of the ecological function a wetland may provide, but may change depending on individual or community preference (Hanson et al., 2008).

The USACE (1999) lists eight functions and five values that usually are associated with wetlands and that should be considered in functional assessments. The functions are: groundwater recharge/ discharge; flood flow alteration (both are Function Category "Hydrology" in Hanson et al., 2008); sediment/toxicant/pathogen retention; nutrient removal/ retention/ transformation (both Function Category "Biochemical Cycling" in Hanson et al., 2008); fish and shellfish habitat; wildlife habitat; production export (all three are Function Category "Habitat"); and, sediment and shoreline stabilization. The values are: recreation, educational/ scientific

value; uniqueness/ heritage; visual quality/ aesthetics, and, threatened or endangered species habitat (USACE, 1999). Generally, each wetland function results in one or more values.

The recommended CWS report, as well as the Federal Policy on Wetland Conservation and associated Implementation Guide, provided the framework for assessment of wetland function (EC 1991; EC 1996; Hanson et al. 2008). The collection of wetland information for the functional assessments was also based on these documents. The functional assessments are based on data collected in the field (summarized in the wetland data sheets and wetland delineation forms, Appendix A) and desktop studies. The results of the latter are described in Sections 5.1 and 5.2. The results of the functional assessments are summarized in Section 5.3.

The wetland functions and values were evaluated for each wetland using standard forms modified from the Wetland Evaluation Guide produced by the North American Wetlands Conservation Council (Bond et al. 1992). For the purposes of this study, all wetlands identified were evaluated through the use of the Wetland Evaluation Guide. It is recognized that this guide and the associated standard forms do not differentiate between wetland value and wetland function, although it is understood that these terms are not synonymous (see above). The lack of distinction between the two terms in this method does not impact the final results of the functional assessment, as wetland values and functions are in fact both assessed despite being all classified as “values”. The use of the Evaluation Guide helps to identify and summarize which wetlands provide more functions and values than others, and to identify which functions are of particularly importance for a particular wetland.

The Wetland Evaluation Guide consists of three formal stages:

- Stage 1 – General analysis of wetland functions and project description;
- Stage 2 – Assessment of the functionality of the wetland based on three broad categories:
  - Life support values;
  - Social/cultural values; and
  - Wetland production values;
- Stage 3 – Specialized analysis, involving intensive wetland evaluation.

Stage 1 and 2 analyses were conducted for each wetland surveyed in the field and include at a minimum the items listed in the recommended CWS report, as well as the Federal Policy on Wetland Conservation and associated Implementation Guide (EC 1991; EC 1996; Hanson et al. 2008). Stage 3 analysis is only required in instances where Stage 1 and 2 results are insufficient to determine wetland functions and potential effects. Stage 3 analysis was not required for these wetlands.

As noted above, the Stage 2 analysis using the *Wetland Evaluation Guide* (Bond et al. 1992) assesses wetland functionality related to life-support, social/cultural, and wetland production values. Descriptions of each of these are provided below:

- Life-support functions and values relate to the capacity of the wetland to regulate and maintain essential ecological processes and life-support systems that are significant to society. Life-support values are assessed using the following criteria;
  - Hydrological – value of the wetland in contributing to surface water and groundwater resources (e.g., sediment flow stabilization, pollutant sink; hydrogeology);
  - Habitat – role of the wetland in contributing to the well-being of the important plants and animals (e.g., rare, threatened or endangered animal or plant species, significant habitat for reptiles and amphibians); and
  - Ecological – role of the wetland in stimulating relations of plant and animal communities (e.g., wetland considered a classic example of its type, display biological diversity that is of interest).
- Social/cultural values relate the wetland to the importance that is placed on it respecting human social and cultural issues. Social/cultural values are assessed on the following criteria:
  - Aesthetic – role of the wetland in the quality of the scenic environment (e.g., valuable aesthetic or open space function, sightseeing);
  - Recreational – role of the wetland in stimulating recreation activities (e.g., opportunities for boating, high quality sport hunting and fishing);
  - Education/public awareness – role of the wetland in stimulating public values and understanding (e.g., used for scientific research, exist close to a large urban population);
  - Public status – role of the wetland in creating a sense of public ownership (e.g., part of settlement and rural/urban lifestyle, easy public access); and
  - Cultural – role of the wetland in the identity of the people in the area (e.g., forms part of a historical/cultural heritage of a regional population).
- Production values relate the wetland to the significance that is placed on agriculture, natural resources and tourism matters. Production values are assessed on the following criteria:
  - Agricultural – role of the wetland in contributing to agricultural production (e.g., provide water for livestock, provide a source of forage);
  - Renewable resources – role of the wetland in contributing to the viability of renewable resource harvest (e.g., used for commercial or subsistence hunting, trapping and fishing, forest resources being harvested);
  - Non-renewable resources – role of the wetland in contributing to non-renewable resources for consumption (e.g., commercial source of peat for horticulture or energy); and
  - Tourism and recreation – role of the wetland in stimulating tourism or recreational benefits (e.g., important local, regional or provincial tourism or recreational attraction, national and international development).

4.2.1.1 Evaluation of Impacts

The assessment of likely changes in wetland functions that may be caused by the Project activities and the degree of impact on each function, before mitigation, has been based on the project description (see above). For the purpose of this analysis, it is assumed that there is a complete loss of wetlands within the Wabush 3 Study Area. Project design for the Wabush 4 ski hill could avoid construction within the wetland and as such no impacts to wetland functions or values are expected within the Wabush 4 Ski Hill Study Area at this time. If the Project Design does involve work within the wetland, then impacts to wetland functions and values should be assessed based on the nature of that work.

Where wetland functions are identified as being present and an impact by the Project is apparent, the magnitude of potential changes on wetland function/ value caused by Project activities has been considered. In the terminology of the Wetland Evaluation Guide, the magnitude of changes is described as the expected impact (before mitigation) and is characterized as high, moderate and low. In this assessment the following definitions have been used:

- High – expected impact may result in measurable effects on regional values or greater;
- Moderate – expected impact may result in measurable effects on local values; and
- Low - expected impact that is so small that effects cannot be feasibly measured (effect not significant).

The significance of expected (potential) impacts is directly related to the significance of the affected function/ value. The expected (potential) impact is considered significant and high if there is a measurable impact on a wetland function/ value determined to be of regional, provincial, or national significance. Where a measurable impact on wetland function/ value is only of local significance, the expected impact is considered significant and moderate. The determination of level of significance for each wetland function/ value (i.e., local, regional, provincial, national) has been assigned based on the relative abundance of the wetland type, the known environmental pressures affecting the wetland type, and our professional judgment. For each wetland function/value for which expected impacts are moderate or high, or wetlands that have three or more critical values, mitigation may be required by the regulators. The functional assessment forms (Appendix D) were completed based on the baseline field data gathered in August 2012.

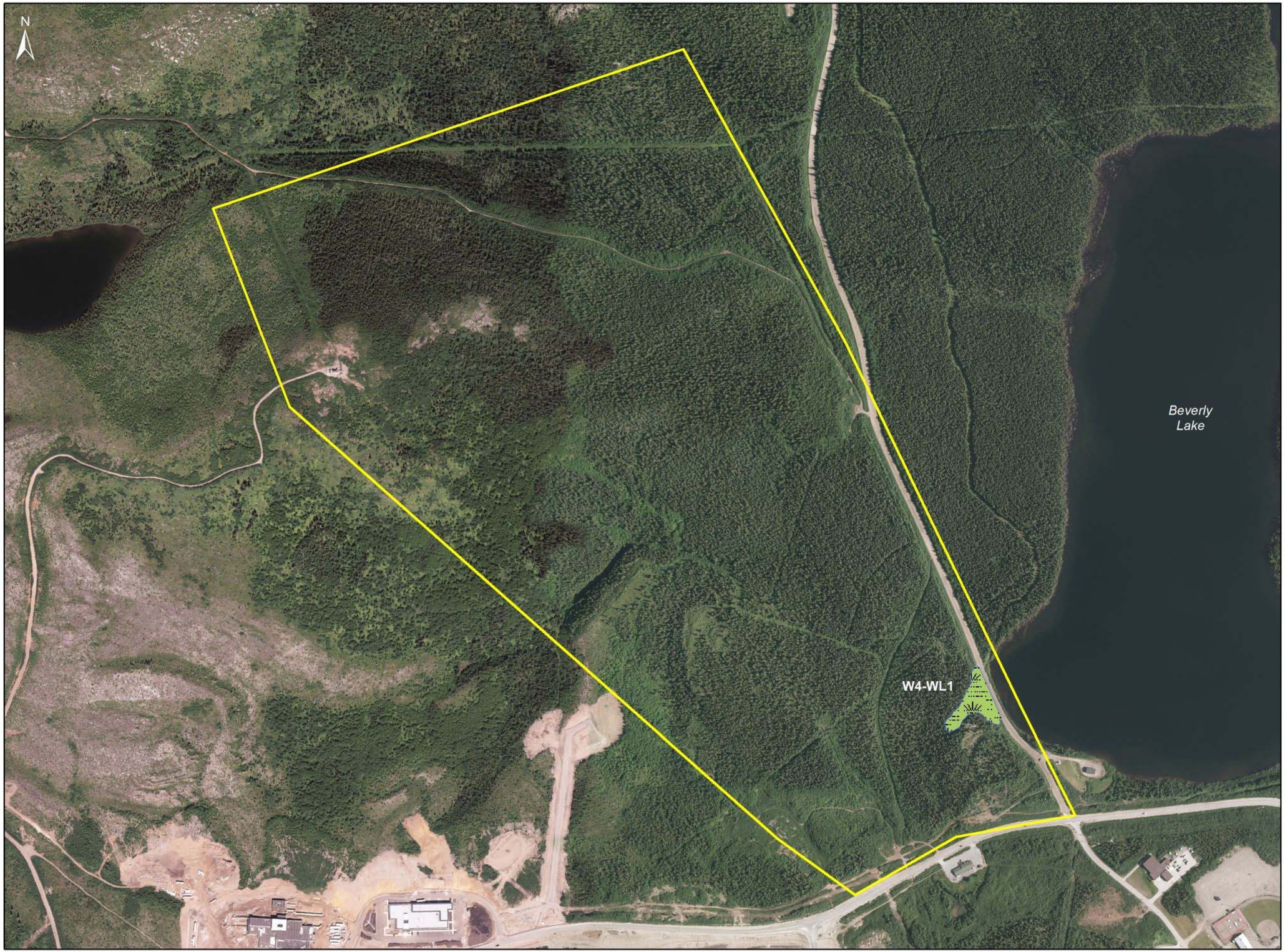
5.0 RESULTS

The field survey was conducted from August 13th, 2012 to August 15th, 2012 by AMEC Biologist Scott Burley and Environmental Scientist Cheryl Tucker. During these surveys the weather was generally a mix of sun and cloud with scattered rain showers. Vegetation growth was good and the majority of dominant vegetation was identifiable to species. The survey boundary of the observed wetlands located within the Study Areas are depicted in Figure 5-1A and 5-1B.

One wetland was located at the Wabush 4 Study Area. This wetland was classified as a herb fen/shrub swamp complex with patches of open non-vegetated water. A small surface drainage feature provides an inlet to the wetland at the north end while a ditch along the dirt road located at the south side of the wetland provides an outlet which eventually crosses under the road via a culvert and into Beverley Lake.

A total of seven wetlands (W3-WL1 to W3-WL7, inclusive) were delineated within the Wabush 3 Study Area indicated by IOC. Individual wetlands and wetland complexes in Wabush 3 range in size from 0.4 ha to more than 5 ha. These wetlands are primarily comprised of shrub and herb fen and fen complexes; however, there are small pockets of shrub swamp and forested wetland (treed swamp) intermixed.

- Wetland 1 (W3-WL1) is classified as a uniform herb fen. This wetland is located within a depression in the landscape with no visible inlet or outlets. Species diversity is relatively low in the wetland compared to the other wetlands assessed within the Study Area, with three species making up the majority of vegetation cover.
- Wetland 2 (W3-WL2) is a herb/low shrub fen complex. This wetland is confined on three sides by a dirt road that follows the boundary.
- Wetland 3 (W3-WL3) is a large fen complex, the majority of which consists of an open herb fen. The area located at the west side is primarily dominated by shrubs which follow braided surface drainage channels in the area. A number of open water pools occur in depressions at the north east end of the wetland.
- Wetland 4 (W3-WL4) is a herb/shrub fen occurring along a stream. This wetland consists of open areas dominated with sedges intermixed with patches of taller shrubs. A small treed fen area is also included in this wetland at the west end.
- Wetland 5 (W3-WL5) is a large riparian fen located in peripheral bands along two lakes connected by a stream flowing between them. The southwest end of this wetland is dominated by tall shrubs that occur along the braided stream that flows from the lakes.
- Wetland 6 (W3-WL6) is a herb/shrub fen occurring along a stream. This wetland consists of open areas dominated with sedges intermixed with patches of taller shrubs.
- Wetland 7 (W3-WL7) is an open herb fen dominated primarily by sedges.



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No.	Date	Description	Drawn	Chk'd	App'd

LEGEND

- Study Area
- Wetland

AMEC Environment & Infrastructure
AMEC Americas Limited

CLIENT

Rio Tinto
Iron Ore Company of Canada

PROJECT DESCRIPTION

IOC Wetland Baseline Surveys

DRAWING TITLE

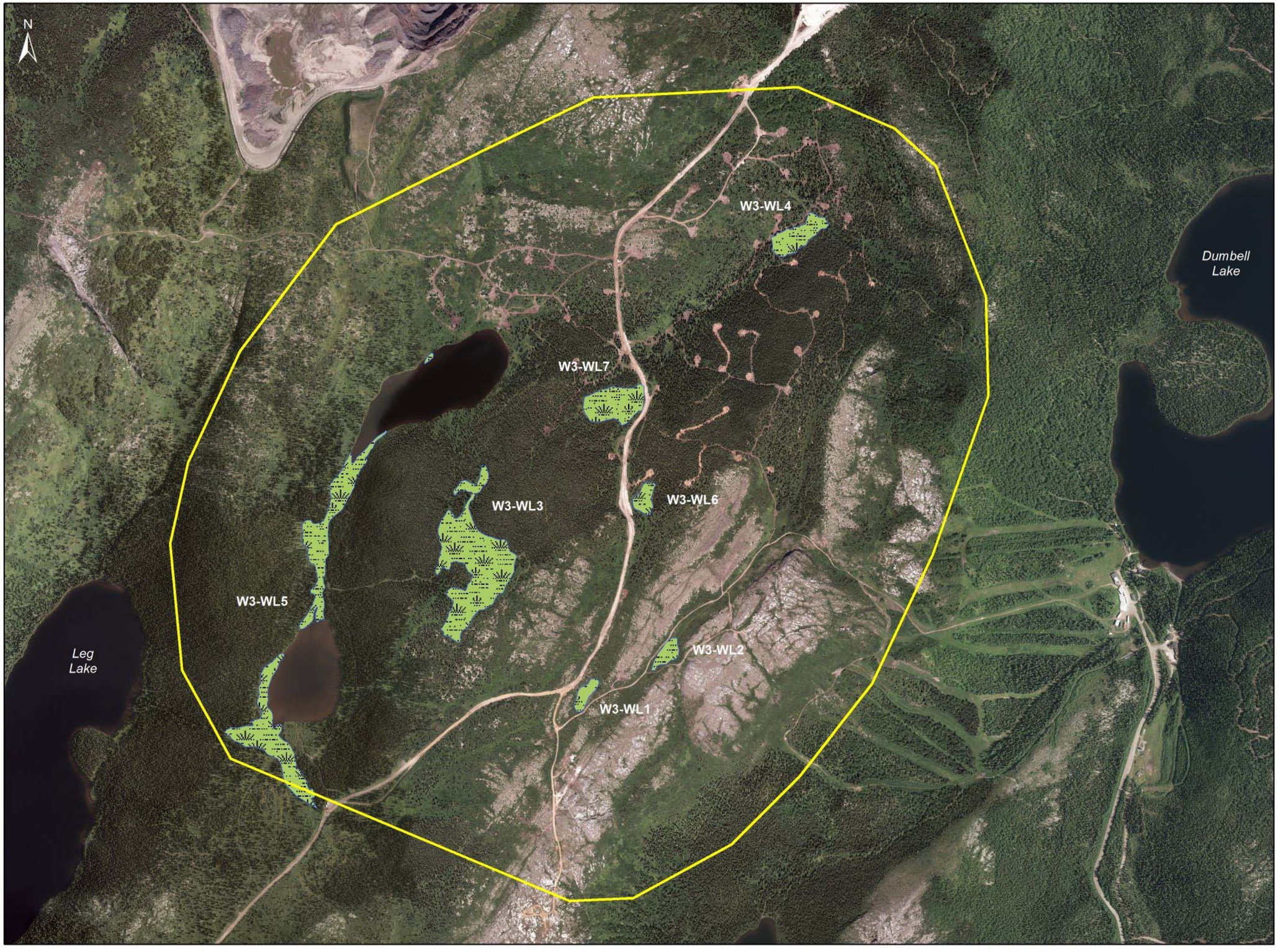
Delineation Overview -
W4 Ski Hill Study Area

PROJECT NUMBER
TF1243033.2010

SCALE
0 125 250 Meters

DRAWN BY	APPROVED BY	REVIEWED BY
JA	SB	BP

FIGURE NO.	DATE	REV
5-1A	November 2012	0



NOTES

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3. THIS DRAWING IS INTENDED TO SHOW RELATIVE LOCATIONS AND CONFIGURATION OF THE STUDY AREA IN SUPPORT OF THIS REPORT.
4. ALL LOCATIONS, DIMENSIONS, AND ORIENTATIONS ARE APPROXIMATE.
5. ALL DATA IN NAD83 UTM ZONE 19.

No.	Date	Description	Drawn	Chk'd	App'd

LEGEND

- Study Area
- Wetland

AMEC Environment & Infrastructure
AMEC Americas Limited

CLIENT
Rio Tinto
Iron Ore Company of Canada

PROJECT DESCRIPTION
IOC Wetland Baseline Surveys

DRAWING TITLE
Delineation Overview -
W3 Study Area

PROJECT NUMBER
TF1243033.2010

SCALE
0 210 420
Meters

DRAWN BY	APPROVED BY	REVIEWED BY
JA	SB	BP

FIGURE NO.	DATE	REV
5-1B	November 2012	0

5.1 WETLAND DESCRIPTIONS

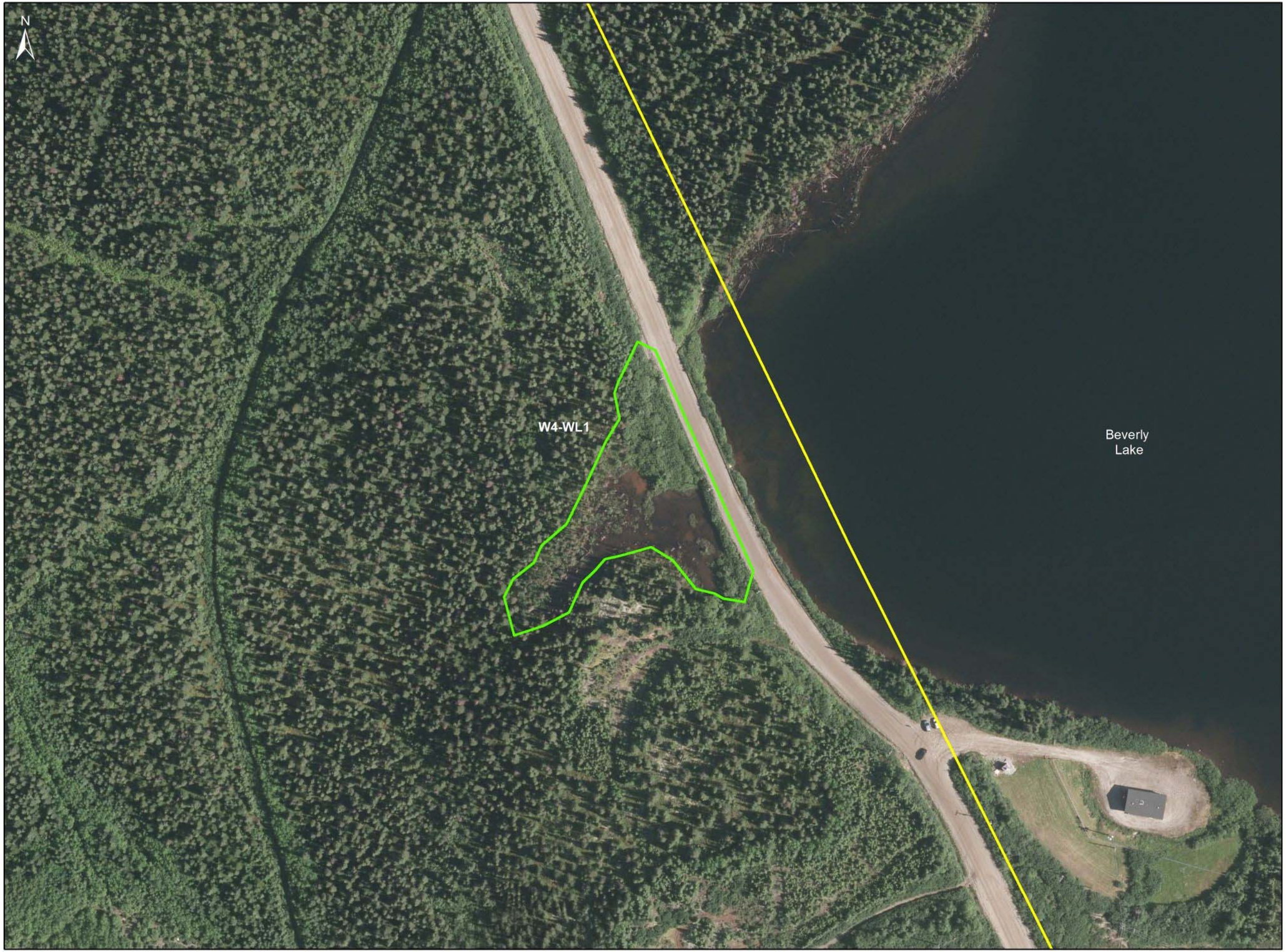
The following descriptions of sample test points are summarized from field data sheets presented in Appendix A. Site photos are included in Appendix C. The following description refers to GPS points in Appendix B and Figure 5-2 to Figure 5-5 inclusive.

5.1.1 Wabush 4 - Wetland 1 (W4-WL1)

W4-WL1 is a herb fen/ shrub swamp complex with patches of open non-vegetated water approximately 0.5 ha in total area, located in the south eastern side of the Study Area (Figure 5-2). One paired sampling site was recorded. Soil in this wetland was determined to be organic peat to a depth of >40cm (A1) with a strong hydrogen sulfide odour (A4). Surface water was present in the wetland and the soil was saturated at the surface, with the water table within 20 cm of the surface. The area was determined to be a wetland as it met all three wetland criteria. The upland area around the wetland to the south is confined by the dirt road whereas upland located on the north, east and west sides consists of open conifer forest.

The dominant vegetation at Data Point “W4-WL1-WP1” in the overstory is Black Spruce (*Picea mariana*) with Labrador Tea (*Rhododendron groenlandicum*) and Leather Leaf (*Chamaedaphne calyculata*) dominating the shrub layer. The understory is dominated by Bake Apple (*Rubus chamaemorus*), Three-Leaf Solomon's-Plume (*Maianthemum trifolium*) and a Sedge (*Carex magellanica subsp. irrigua*). The Dominance Test (DT) determined 100% of dominant species were hydrophytic.

The dominant vegetation at Data Point “W4-WL1-UP1’ in the overstory is Black Spruce with Labrador Tea in the shrub layer. This does indicate a dominance of wetland vegetation. However in Labrador, Black Spruce forests are known to occur in upland conditions as well. The soil is a brightly coloured sand (10YR 3/3) overlain by a thin Organic layer made up of decomposed feather moss and leaf litter. The soil appeared to be well drained with no presence of saturation. The lack of two wetland criteria (hydric soil and wetland hydrology) identifies this site as upland.



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6. ALL IMAGERY PROVIDED BY CLIENT.

No.	Date	Description	Drawn	Chk'd	App'd

LEGEND

- Study Area
- Wetland

AMEC Environment & Infrastructure
AMEC Americas Limited

CLIENT
Rio Tinto
Iron Ore Company of Canada

PROJECT DESCRIPTION
IOC Wetland Baseline Surveys

DRAWING TITLE
Wetland Delineation Boundaries
W4 Ski Study Area

PROJECT NUMBER
TF1243033.2010

SCALE
0 10 20 30 Meters

DRAWN BY	APPROVED BY	REVIEWED BY
JA	SB	BP

FIGURE NO.	DATE	REV
5-2	November 2012	0

5.1.2 Wabush 3 - Wetland 1 (W3-WL1)

W3-WL1 (Figure 5-3) is a uniform herb fen approximately 0.4 ha in size, located near the southern end of the Study Area (Figure 5-1B). One paired sampling site was recorded.

The dominant vegetation at Data Point "W3-WL1-WP1" was observed to be Canada Blue-joint grass (*Calamagrostis canadensis*), and two sedge species (*Carex exilis* and *Carex vesicaria*). The DT determined 100% of dominant species were hydrophytic. The soil in this area showed signs of previous disturbance and proved to be problematic. However, a 12 cm gleyed (Gley 5/10B) silt-sand overlaid by a thin organic layer consisting of decomposed vegetation was noted in this area. This gleyed layer was located over a coarse sand horizon with a colour of 5YR 3/2. No surface water was observed at the sampling point, but soil cracks (B6) and the microtopographic relief (D4) were indicators of hydrology. The disturbance in this area seemed to have altered the hydrology and soils; however, given the strong indicators of hydric vegetation along with a gleyed soil horizon close to the surface, this area was considered a wetland.

The dominant vegetation at Data Point "W3-WL1-UP1' was found to be Glandular Birch (*Betula glandulosa*) and Labrador Tea. This seems to indicate a dominance of wetland vegetation; however, in Labrador, Labrador Tea and Glandular Birch are both known to occur in upland conditions as well. No soil was present at the sample site where the area consisted of exposed rock. The area appeared to be well drained with no presence of saturation. The lack of two wetland criteria (hydric soil and wetland hydrology) identifies this site as upland.

5.1.3 Wabush 3 - Wetland 2 (W3-WL2)

WL2 (Figure 5-3) is a small herb/shrub fen approximately 0.4 ha in size located in the southern end of the Study Area (Figure 5-1B). One paired sampling site was recorded. This wetland has been confined on three sides by a dirt road.

The dominant vegetation at Data Point "W3-WL2-WP1" was observed to be Black Spruce (*Picea mariana*), Leather Leaf, Bake Apple, Seven-Angled Pipewort (*Trichophorum cespitosum*) and Few-Flowered Sedge (*Carex pauciflora*) with sphagnum moss covering the substrate. The DT determined 100% of dominant species were hydrophytic. The soil was determined to be a histosol (A1) as there was more than 40 cm of organic matter accumulated. Surface water was observed in the wetland and soil saturation was to the surface (A3).

The dominant vegetation at Data Point "W3-WL2-UP1' was found to be Black Spruce, Labrador Tea, Glandular Birch and Alpine Bilberry (*Vaccinium uliginosum*). This seems to indicate a dominance of wetland vegetation; however, in Labrador these species are known to occur in upland conditions as well. The soil is a brightly coloured sand (2.5YR 3/4) overlain by a 5cm Ae silt-sand layer with a colour of gley 5/N. The soil appeared to be well drained with no presence of saturation. The lack of two wetland criteria (hydric soil and wetland hydrology) identifies this site as upland.

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No.	Date	Description	Drawn	Chk'd	App'd

LEGEND

- Study Area
- Wetland

AMEC Environment & Infrastructure
AMEC Americas Limited

CLIENT

Rio Tinto
Iron Ore Company of Canada

PROJECT DESCRIPTION

IOC Wetland Baseline Surveys

DRAWING TITLE

Wetland Delineation Boundary
W3 Study Area

PROJECT NUMBER TF1243033.2010

SCALE 0 30 60 Meters

DRAWN BY	APPROVED BY	REVIEWED BY
JA	SB	BP

FIGURE NO.	DATE	REV
5-3	November 2012	0

5.1.4 Wabush 3 – Wetland 3 (W3-WL3)

W3-WL3 (Figure 5-4) is a large herb/shrub fen complex approximately 5.4 ha in size located near the central portion of the Study Area (Figure 5-1B). One paired sampling site was recorded.

The dominant vegetation at Data Point "W3-WL3-WP1" was observed to be Black Spruce, Glandular Birch, Prairie Willow (*Salix humilis*), Inflated Sedge (*Carex vesicaria*) and Alpine Bilberry, with sphagnum moss covering the substrate. The DT determined 83% of dominant species were hydrophytic. The soil was determined to be a Histic Epipedon (A2) as there was more than 20 cm of organic matter accumulated overtop a silt sand horizon with a colour of 2.5YR 4/2. Surface water was observed in the wetland, soil saturation was to the surface (A3) and the water table was at 5 cm (A2).

The dominant vegetation at Data Point "W3-WL3-UP1' was found to be Black Spruce, Pussy Willow (*Salix discolor*), Labrador Tea, Bunch Berry (*Cornus canadensis*), Alpine Bilberry and Mountain Cranberry (Vaccinium vitis-idaea). This seems to indicate a dominance of wetland vegetation; however, in Labrador these species are known to occur in upland conditions as well. The soil is a brightly coloured silt-sand (10YR 4/3) overlain by a 5 cm organic layer with bedrock encountered at 25 cm. The water table was found to be within 30cm of the surface which does indicate wetland hydrology, however rain at the time of the survey combined with the shallow bedrock may have increased surface drainage resulting in the elevated water table. The lack of one wetland criteria (hydric soil) identifies this site as upland.

5.1.5 Wabush 3 – Wetland 4 (W3-WL4)

W3-WL4 (Figure 5-5) is a herb/shrub fen complex approximately 1.1 ha in size located in the northern portion of the Study Area (Figure 5-1B). One paired sampling site was recorded.

The dominant vegetation at Data Point "W3-WL4-WP1" was observed to be Black Spruce, Balsam Fir (*Abies balsamea*), Pussy Willow, and sedge species (*Carex magellanica subsp. irrigua* and *Carex echinata subsp. echinata*), with sphagnum moss covering the substrate. The DT determined 100% of dominant species were hydrophytic. The soil contained a strong hydrogen sulfide odour (A4). Surface water was observed in the wetland, soil saturation was to the surface (A3) and the water table was at surface (A2).

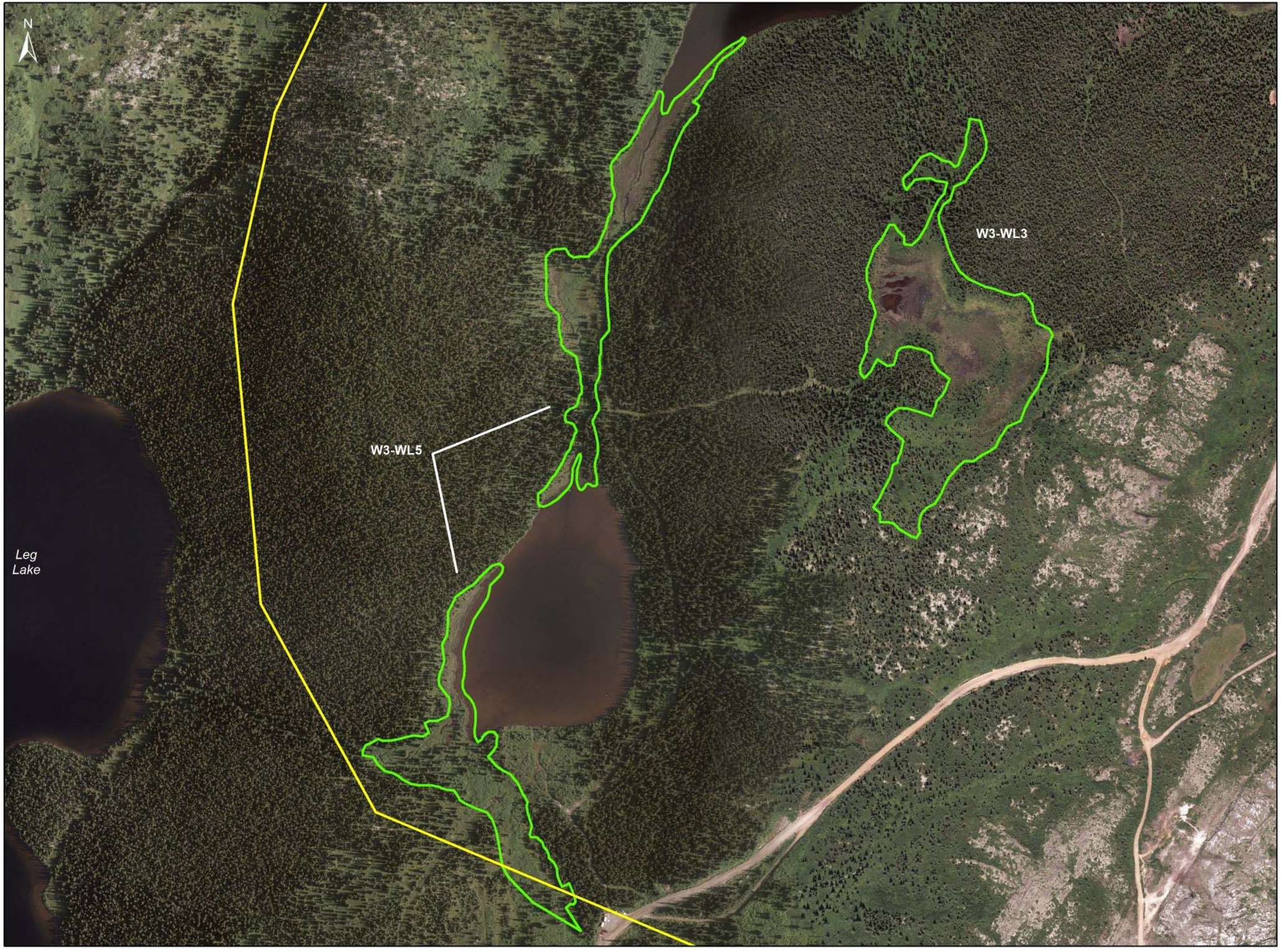
The dominant vegetation at Data Point "W3-WL4-UP1' was found to be Black Spruce, Balsam Fir, Glandular Birch, Pussy Willow (*Salix discolor*), Fireweed (*Chamerion angustifolium*), Sweet Coltsfoot (*Petasites frigidus var. palmatus*) and Bunch Berry. This does indicate a dominance of wetland vegetation; however, in Labrador these species are known to occur in upland conditions as well. The soil is a silt-sand (7.5YR 4/4) overlain by an 8 cm Ae horizon (2.5Y 4/1) and 8 cm organic layer. The soil appeared to be well drained with no presence of saturation. The lack of two wetland criteria (hydric soil and wetland hydrology) identifies this site as upland.

5.1.6 Wabush 3 – Wetland 5 (W3-WL5)

W3-WL5 (Figure 5-4) is a large riparian herb/shrub fen complex approximately 5 ha in size located at the southern end of the Study Area (Figure 5-1B). One paired sampling site was recorded.

The dominant vegetation at Data Point "W3-WL5-WP1" was observed to be Black Spruce, Balsam Fir, Glandular Birch, Pussy Willow, Canada Burnet (*Sanguisorba canadensis*) and Thread Rush (*Juncus filiformis*), with sphagnum moss covering the substrate. The DT determined 100% of dominant species were hydrophytic. The soil was determined to be a Histosol (A1) as there was more than 40 cm of organic matter accumulated. Surface water was not observed at the sampling point however, soil saturation was to the surface (A3) and the water table was at 5 cm (A2).

The dominant vegetation at Data Point "W3-WL5-UP1' was found to be Black Spruce, Balsam Fir, glandular Birch, Large-leaved Goldenrod (*Solidago* macrophylla), Bunch Berry and Alpine Bilberry. This seems to indicate a dominance of wetland vegetation; however, in Labrador these species are known to occur in upland conditions as well. The soil consists of a B horizon of silt-sand (10YR 3/3) with a 3 cm Ae horizon (2.5YR 5/1) and 5 cm organic layer on top. A second B horizon was noted at 26 cm which consisted of a silt sand with a colour of 2.5Y 3/3. The soil appeared to be well drained with no presence of saturation. The lack of two wetland criteria (hydric soil and wetland hydrology) identifies this site as upland.



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No.	Date	Description	Drawn	Chk'd	App'd

LEGEND

- Study Area
- Wetland

AMEC Environment & Infrastructure
AMEC Americas Limited

CLIENT
Rio Tinto
Iron Ore Company of Canada

PROJECT DESCRIPTION
IOC Wetland Baseline Surveys

DRAWING TITLE
Wetland Delineation Boundary
W3 Study Area

PROJECT NUMBER
TF1243033.2010

SCALE
0 90 180 Meters

DRAWN BY	APPROVED BY	REVIEWED BY
JA	SB	BP

FIGURE NO.	DATE	REV
5-4	November 2012	0

5.1.7 Wabush 3 – Wetland 6 (W3-WL6)

W3-WL6 (Figure 5-5) is a herb/shrub fen complex approximately 0.4 ha in size located in the central portion of the Study Area (Figure 5-1B). One paired sampling site was recorded.

The dominant vegetation at Data Point "W3-WL6-WP1" was observed to be Black Spruce, Balsam Fir, Glandular Birch, Inflated Sedge and Thread Rush (*Juncus filiformis*), with sphagnum moss covering the substrate. The DT determined 100% of dominant species were hydrophytic. The soil was determined to be a Histosol (A1) as there was more than 40 cm of organic matter accumulated. Surface water was not observed at the sampling point however, soil saturation was to the surface (A3) and the water table was at 2 cm (A2).

The dominant vegetation at Data Point "W3-WL6-UP1' was found to be Balsam Fir, Glandular Birch, and Bunch Berry. This seems to indicate a dominance of wetland vegetation; however, in Labrador these species are known to occur in upland conditions as well. The soil is a silt-sand (10YR 3/3) overlain by a 5 cm Ae horizon (5Y 3/1) and 10 cm organic layer. The soil appeared to be well drained with no presence of saturation. The lack of two wetland criteria (hydric soil and wetland hydrology) identifies this site as upland.

5.1.8 Wabush 3 – Wetland 7 (W3-WL7)

W3-WL7 (Figure 5-5) is a uniform herb fen approximately 1.8 ha in size located in the central portion of the Study Area (Figure 5-1B). One paired sampling site was recorded.

The dominant vegetation at Data Point "W3-WL7-WP1" was observed to be Pussy Willow, Sweet Coltsfoot and Woodland Horsetail (*Equisetum sylvaticum*), with sphagnum moss covering the substrate. The DT determined 100% of dominant species were hydrophytic. The soil was determined to be a Histic Epipedon (A2) as there was more than 20 cm of organic matter accumulated overtop a silt sand horizon with a colour of 5YR 4/1. Surface water was at the sampling point, soil saturation was to the surface (A3) and the water table was at 5 cm (A2).

The dominant vegetation at Data Point "W3-WL6-UP1' was found to be Balsam Fir and Bunch Berry. This does indicate a dominance of wetland vegetation; however, in Labrador these species are known to occur in upland conditions as well. The soil is a silt-sand (2.5YR 4/3) overlain by a 15 cm organic layer. The soil appeared to be well drained with no presence of saturation. The lack of two wetland criteria (hydric soil and wetland hydrology) identifies this site as upland.

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LEGEND

- Study Area
- Wetland

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Rio Tinto
Iron Ore Company of Canada

PROJECT DESCRIPTION
IOC Wetland Baseline Surveys

DRAWING TITLE
Wetland Delineation Boundary
W3 Study Area

PROJECT NUMBER
TF1243033.2010

SCALE
0 90 180 Meters

DRAWN BY	APPROVED BY	REVIEWED BY
JA	SB	BP

FIGURE NO.	DATE	REV
5-5	November 2012	0

5.2 WETLAND BOUNDARY DETERMINATIONS

Wetland boundaries as described below are depicted on the site map in Figure 5-2A to 5-2D inclusive with GPS locations (as identified in Appendix B).

5.2.1 Wabush 4 - Wetland 1 (W4-WL1)

The wetland boundary for W4-WL1 followed the dirt road along the southern boundary. A steep hill and subsequent rapid topographical change provided the western boundary. The northern and eastern boundary showed more of a transition area where the Black Spruce Forest upland gradually shifted to the open fen wetland. The wetland boundary along these areas was determined using the dominance of moss species which changed from Feathermoss in the upland to dominance of Sphagnum moss in the wetland.

5.2.2 Wabush 3 - Wetland 1 (W3-WL1)

This wetland was confined on all sides by exposed bedrock creating a depression in the landscape within which the wetland was delineated.

5.2.3 Wabush 3 - Wetland 2 (W3-WL2)

This wetland is confined on three sides by dirt roads which create the north, south and west boundaries. The eastern boundary was determined by a steep cliff which creates an abrupt change in elevation.

5.2.4 Wabush 3 - Wetland 3 (W3-WL3)

The wetland boundary on the southern side is determined by an abrupt change in elevation created by a steep hill. The boundary along the west, east and north sides of the wetland consist of a more gradual transition area where the Black Spruce Forest upland gradually shifted to the open fen wetland. The wetland boundary along these areas was determined using the dominance of moss species which changed from Feathermoss in the upland to dominance of Sphagnum moss in the wetland.

5.2.5 Wabush 3 - Wetland 4 (W3-WL4)

This wetland is located in a slight depression in the landscape where the boundaries were determined using a change in elevation and subsequent shift in species composition from fen wetland to upland coniferous forest.

5.2.6 Wabush 3 - Wetland 5 (W3-WL5)

The wetland boundary along the western side consists of a more gradual transition area where the Alpine Shrub and Black Spruce upland habitats gradually shift to the open and shrub fen wetland. The wetland boundary along these areas was determined using the dominance of moss species which changed from Feathermoss in the upland to dominance of Sphagnum moss in the wetland. Boundaries along the north, south and east sides of the wetland were determined using a change in elevation and subsequent shift in species composition from fen wetland to upland coniferous forest.

5.2.7 Wabush 3 - Wetland 6 (W3-WL6)

This wetland is located in a slight depression in the landscape where the boundaries along the west, south and east sides were determined using a change in elevation and subsequent shift in species composition from fen wetland to upland coniferous forest. The northern boundary followed the dirt road.

5.2.8 Wabush 3 - Wetland 7 (W3-WL7)

This wetland is located in a slight depression in the landscape where the boundaries along the west, north and east sides were determined using a change in elevation and subsequent shift in species composition from fen wetland to upland coniferous forest. The southern boundary followed the dirt road.

5.3 FUNCTIONAL ANALYSIS

The detailed functional analysis forms for each wetland are presented in Appendix D. The completed wetland functional assessment forms identify which functions/ values are present, the degree of uncertainty related to each function/ value, the level of significance for each function/ value in terms of local, regional, provincial or national importance, and the degree of impact on each function/value (before mitigation) in terms of high, moderate or low. Critical values are indicated in the forms (Appendix D), providing a subset of particularly high value functions that would warrant special consideration, as determined by the regulators, such as specific mitigation or compensation measures.

Table 5.1: Summary of Wetland Functions and Values Identified in Study Area

Wetland Function	W4-WL1	W3-WL1	W3-WL2	W3-WL3	W3-WL4	W3-WL5	W3-WL6	W3-WL7
1. Life-support Values								
1.1 Hydrological Values	1	1	1	1	4	3	4	2
1.2 Biogeochemical Values	2	2	2	1	1	1	2	2
1.3 Habitat Values	3	3	3	3	3	4	3	3
1.4 Ecological Values	0	0	0	0	0	0	0	0
2. Social/Cultural Values								
2.1 Aesthetic Values	0	0	0	1	0	1	0	1
2.2 Recreational Values	0	0	0	0	0	0	0	0
2.3 Education and Public Awareness Values	1	1	1	1	1	1	1	1
2.4 Public Status Values	2	2	2	1	1	1	1	1
2.5 Cultural Attribute Values	3	3	3	3	3	3	3	3
3. Production Values								

3.1 Agricultural Values	0	0	0	0	0	0	0	0
3.2 Renewable Resource Values	0	0	0	0	0	0	0	0
3.3 Non-renewable Resource Values	0	0	0	0	0	0	0	0
3.4 Tourism and Recreational Values	0	0	0	0	0	0	0	0
3.5 Urban Values	0	0	0	0	0	0	0	0
Total # of Values/Functions	**12**	**12**	**12**	**11**	**13**	**14**	**14**	**13**
Total # of Critical Values	**3**	**2**	**2**	**1**	**3**	**2**	**4**	**3**

5.3.1 Wabush 4 – Wetland 1 (W4-WL1)

Wetland W4-WL1 was identified as a 0.5 ha emergent fen/shrub fen (Canadian Wetlands Classification System; NWWG 1997). This wetland has been previously impacted by a dirt road along the south side which may disrupt drainage.

Based on available information, the wetland only provides marginal habitat for wildlife. The potential for presence of animal species at risk is low. No plant species listed, and therefore protected, under SARA or NLESA were recorded in this wetland during the 2012 vegetation surveys. However seven potential regionally rare species were recorded (see Table 5.2 below for a list of species). It should be noted that since these species are not listed under SARA or NLESA, they are not provided legal protection under federal or provincial legislation. According to the Atlantic Canada Conservation Data Center (ACCDC) these species are potentially rare for the regional area but are typically common species outside of Labrador.

Wetland W4-WL1 is located within the protected watershed for the municipal water supply of Labrador City. A small watercourse flows into this wetland at the north end and discharges through a culvert into Beverley Lake.

It is unknown if this wetland contains archaeological resources (cultural attribute) and thus would require further archaeological investigation to determine if there are heritage and palaeontological resources present. There are no ecological, aesthetic, recreational, agricultural, renewable resources, non-renewable resources, tourism or urban values associated with this wetland.

This wetland does provide a hydrological value in that it is part of a regional water supply while the biogeochemical values of this wetland include sediment stabilization and receiving surface water run-off from an adjacent road. This wetland also provides potential habitat values, public status values, potential cultural attribute values, and education and public awareness values (Appendix D). This wetland may offer three critical values through providing habitat for rare plant or animal species, being located within a regional water supply, as well as potentially receiving toxics from run-off of adjacent road. This is a common wetland type in Labrador; however, due to the potential for this wetland to have three critical values W4-WL1 is

considered to be of elevated value in terms of wetland function. It should be noted that impacts to identified functions and values resulting from Project activities is not expected.

5.3.2 Wabush 3 – Wetland 1 (W3-WL1)

Wetland W3-WL1 was identified as a 0.4 ha emergent fen (Canadian Wetlands Classification System, NWWG 1997). This wetland has been previously impacted by exploratory drilling and excavations within the wetland.

Based on available information, the wetland only provides marginal habitat for wildlife. The potential for presence of animal species at risk is low. No plant species listed under SARA or NLESA were recorded in this wetland during the 2012 vegetation surveys. However one regionally rare species was recorded (Coast Sedge, Carex exilis; ACCDC S-Rank of S3S5). It should be noted that since this species is not listed under SARA or NLESA, it is not provided legal protection under federal or provincial legislation. According to ACCDC this species is potentially rare for the regional area but is typically a common species outside of Labrador.

Wetland W3-WL1 is located in a headwater position within the watershed and likely contributes locally to groundwater recharge of the area. This is an isolated wetland with no obvious inlets or outlets.

It is unknown if this wetland contains archaeological resources (cultural attribute) and thus would require further archaeological investigation to determine if there are heritage and palaeontological resources present. There are no ecological, aesthetic, recreational, agricultural, renewable resources, non-renewable resources, tourism or urban values associated with this wetland.

This wetland does provide a hydrological value given the headwater location in the watershed while the biogeochemical values of this wetland include sediment stabilization and receiving surface water run-off from an adjacent road. This wetland also provides potential habitat values, public status values, potential cultural attribute values, and education and public awareness values (Appendix D). This wetland may offer two critical values through providing habitat for rare plant or animal species and potentially receiving toxics from run-off of adjacent road. Most impacts on wetland functions/ values attributed to this wetland were assessed as low, except for impacts to rare species which is high. This is a common wetland type in Labrador and due to its relatively small size and past disturbance W3-WL1 is not of elevated value in terms of wetland function.

5.3.3 Wabush 3 – Wetland 2 (W3-WL2)

Wetland W3-WL2 was identified as a 0.4 ha emergent/shrub fen (Canadian Wetlands Classification System, NWWG 1997). This wetland has been previously impacted by a dirt road along the northern boundary that may impact hydrology.

Based on available information, the wetland only provides marginal habitat for wildlife. The potential for presence of animal species at risk is low. No plant species listed under SARA or NLESA were recorded in this wetland during the 2012 vegetation surveys. However two

regionally rare species were recorded (see Table 5.2 below for a list of species). It should be noted that since these species are not listed under SARA or NLESA, they are not provided legal protection under federal or provincial legislation. According to ACCDC these species are potentially rare for the regional area but are typically common species outside of Labrador.

Wetland W3-WL2 is located in a headwater position within the watershed and likely contributes locally to groundwater recharge of the area. One outlet stream is located at the west end of this wetland and an open water pool is located at the east end.

It is unknown if this wetland contains archaeological resources (cultural attribute) and thus would require further archaeological investigation to determine if there are heritage and palaeontological resources present. There are no ecological, aesthetic, recreational, agricultural, renewable resources, non-renewable resources, tourism or urban values associated with this wetland.

This wetland does provide a hydrological value given the headwater location in the watershed while the biogeochemical values of this wetland include sediment stabilization and receiving surface water run-off from an adjacent road. This wetland also provides potential habitat values, public status, potential cultural attribute values, and education and public awareness values (Appendix D). This wetland may offer two critical values through providing habitat for rare plant or animal species and potentially receiving toxics from run-off of adjacent road. Most impacts on wetland functions/ values attributed to this wetland were assessed as low, except for impacts to rare species which is high. This is a common wetland type in Labrador and due to its relatively small size W3-WL2 is not of elevated value in terms of wetland function.

5.3.4 Wabush 3 – Wetland 3 (W3-WL3)

Wetland W3-WL3 was identified as a 5.4 ha emergent fen/shrub fen complex (Canadian Wetlands Classification System, NWWG 1997). This wetland consists of an open emergent fen with a peripheral shrub fen.

Based on available information, the wetland only provides marginal habitat for wildlife. The potential for presence of animal species at risk is low. No plant species listed under SARA or NLESA were recorded in this wetland during the 2012 vegetation surveys. However eight regionally rare species were recorded (see Table 5.2 below for a list of species). It should be noted that since these species are not listed under SARA or NLESA, they are not provided legal protection under federal or provincial legislation. According to ACCDC these species are potentially rare for the regional area but are typically common species outside of Labrador.

Wetland W3-WL3 is located in a headwater position within the watershed and likely contributes locally to groundwater recharge of the area. A number of outlet streams are located at the north and east ends of this wetland and an inlet stream is located at the south side.

It is unknown if this wetland contains archaeological resources (cultural attribute) and thus would require further archaeological investigation to determine if there are heritage and palaeontological resources present. There are no ecological, recreational, agricultural,

renewable resources, non-renewable resources, tourism or urban values associated with this wetland.

This wetland does provide a hydrological value given the headwater location in the watershed while the biogeochemical value of this wetland includes sediment stabilization. This wetland also provides potential habitat values, aesthetic values, public status values, potential cultural attribute values, and education and public awareness values (Appendix D). This wetland may offer two critical values through providing habitat for rare plant or animal species and potentially receiving toxics from run-off of adjacent road. Most impacts on wetland functions/ values attributed to this wetland were assessed as low, except for impacts to rare species which is high. W3-WL3 is a common wetland type in Labrador and is not of elevated value in terms of wetland function.

5.3.5 Wabush 3 – Wetland 4 (W3-WL4)

Wetland W3-WL4 was identified as a 1.1 ha emergent fen/shrub fen (Canadian Wetlands Classification System, 1997). This wetland consists of shrub fen located along an unnamed stream with a peripheral emergent fen.

Based on available information, the wetland only provides marginal habitat for wildlife. The potential for presence of animal species at risk is low. No plant species listed under SARA or NLESA were recorded in this wetland during the 2012 vegetation surveys. However five regionally rare species were recorded (see Table 5.2 below for a list of species). It should be noted that since these species are not listed under SARA or NLESA, they are not provided legal protection under federal or provincial legislation. According to ACCDC these species are potentially rare for the regional area but are typically common species outside of Labrador.

Wetland W3-WL4 is located within the protected watershed for the municipal water supply of Labrador City in a headwater position within the watershed and likely contributes locally to groundwater recharge of the area. An unnamed stream flows through the wetland in a northeast to southwest direction.

It is unknown if this wetland contains archaeological resources (cultural attribute) and thus would require further archaeological investigation to determine if there are heritage and palaeontological resources present. There are no ecological, aesthetic, recreational, agricultural, renewable resources, non-renewable resources, tourism or urban values associated with this wetland.

This wetland does provide hydrological values in that it is part of a regional water supply, it offers flood protection for the surrounding forest and is located in a headwater position within the watershed. The biogeochemical value of this wetland includes sediment stabilization for the unnamed stream that flows through it. This wetland also provides potential habitat values, public status values, potential cultural attribute values, and education and public awareness values (Appendix D). This wetland may offer three critical values through providing potential habitat for rare plant or animal species, being located within a regional water supply as well as flood protection. Most impacts on wetland functions/ values attributed to this wetland were assessed as low, except for high impacts to rare species. This is a common wetland type in

Labrador; however, due to the potential for this wetland to have three critical values W3-WL4 is considered to be of elevated value in terms of wetland function and may require specific mitigation measures as determined by the regulators.

5.3.6 Wabush 3 - Wetland 5 (W3-WL5)

Wetland W3-WL5 was identified as a 5 ha riparian fen/shrub fen (Canadian Wetlands Classification System, NWWG 1997). The emergent fen wetland type is located on the periphery of the two lakes where this wetland occurs while the shrub fen is located along the braided stream at the west end as well as in between the two lakes.

Based on available information, the wetland only provides marginal habitat for wildlife. The potential for presence of animal species at risk is low. No plant species listed under the federal SARA or NLESA were recorded in this wetland during the 2012 vegetation surveys. However thirteen regionally rare species were recorded (see Table 5.2 below for a list of species). It should be noted that since these species are not listed under SARA or NLESA, they are not provided legal protection under federal or provincial legislation. According to ACCDC these species are potentially rare for the regional area but are typically common species outside of Labrador.

Wetland W3-WL5 is located in a headwater position within the watershed and likely contributes locally to groundwater recharge of the area. An unnamed stream flows through the wetland in a northeast to southwest direction connecting the two lakes before out flowing to the southwest.

It is unknown if this wetland contains archaeological resources (cultural attribute) and thus would require further archaeological investigation to determine if there are heritage and palaeontological resources present. There are no ecological, recreational, agricultural, renewable resources, non-renewable resources, tourism or urban values associated with this wetland.

This wetland does provide hydrological values given the headwater location in the watershed as well as providing erosion control and flood protection for the surrounding forest. The biogeochemical value of this wetland includes sediment stabilization for the unnamed stream that flows through it. This wetland also provides potential habitat values, public status values, potential cultural attribute values, and education and public awareness values (Appendix D). This wetland may offer two critical values through providing potential habitat for rare plant or animal species, as well as flood protection. Most impacts on wetland functions/ values attributed to this wetland were assessed as low, except for high impacts to rare species. W3-WL5 is a common wetland type in Labrador and is not considered to be of elevated value in terms of wetland function.

5.3.7 Wabush 3 – Wetland 6 (W3-WL6)

Wetland W3-WL6 was identified as a 0.4 ha emergent/shrub fen (Canadian Wetlands Classification System, 1997). This wetland has been previously impacted by a dirt road along the northern boundary that may impact hydrology.

Based on available information, the wetland only provides marginal habitat for wildlife. The potential for presence of animal species at risk is low. No plant species listed under the federal SARA or NLESA were recorded in this wetland during the 2012 vegetation surveys. However seven regionally rare species were recorded (see Table 5.2 below for a list of species). It should be noted that since these species are not listed under SARA or NLESA, they are not provided legal protection under federal or provincial legislation. According to ACCDC these species are potentially rare for the regional area but are typically common species outside of Labrador.

Wetland W3-WL6 is located in a headwater position within the watershed and likely contributes locally to groundwater recharge of the area. An unnamed stream flows through the wetland in a northwest to southeast direction.

It is unknown if this wetland contains archaeological resources (cultural attribute) and thus would require further archaeological investigation to determine if there are heritage and palaeontological resources present. There are no ecological, aesthetic, recreational, agricultural, renewable resources, non-renewable resources, tourism or urban values associated with this wetland.

This wetland does provide hydrological values in that it is part of a regional water supply, it offers flood protection and erosion control for the surrounding forest as well as it is in a headwater position in the watershed. This wetland also provides potential habitat values, public status values, potential cultural attribute values, and education and public awareness values (Appendix D). This wetland may offer four critical values through providing potential habitat for rare plant or animal species, flood protection, located within a regional water supply, as well as potentially receiving toxics from run-off of adjacent road. Most impacts on wetland functions/ values attributed to this wetland were assessed as low, except for high impacts on rare species. This is a common wetland type in Labrador; however, due to the potential for this wetland to have four critical values W3-WL6 is considered to be of elevated value in terms of wetland function and may require specific mitigation measures as determined by the regulators.

5.3.8 Wabush 3 – Wetland 7 (W3-WL7)

Wetland W3-WL7 was identified as a 1.78 ha emergent fen (Canadian Wetlands Classification System, NWWG 1997). This wetland has been previously impacted by a dirt road along the south side which may disrupt drainage.

Based on available information, the wetland only provides marginal habitat for wildlife. The potential for presence of animal species at risk is low. No plant species listed under SARA or NLESA were recorded in this wetland during the 2012 vegetation surveys. However four regionally rare species were recorded (see Table 5.2 below for a list of species). It should be noted that since these species are not listed under SARA or NLESA, they are not provided legal protection under federal or provincial legislation. According to ACCDC these species are potentially rare for the regional area but are typically common species outside of Labrador.

Wetland W3-WL7 is located in a headwater position within the watershed and likely contributes locally to groundwater recharge of the area. An outlet stream is located at the south end of the wetland which flows into the ditch associated with the dirt road.

It is unknown if this wetland contains archaeological resources (cultural attribute) and thus would require further archaeological investigation to determine if there are heritage and palaeontological resources present. There are no ecological, recreational, agricultural, renewable resources, non-renewable resources, tourism or urban values associated with this wetland.

This wetland does provide hydrological values in that it is located within a regional water supply area and located in a headwater position within the watershed. The biogeochemical values of this wetland include sediment stabilization and receiving surface water run-off from an adjacent road. This wetland also provides potential habitat values, aesthetic values, public status values, potential cultural attribute values and education and public awareness values (Appendix D). This wetland may offer three critical values through providing potential habitat for rare plant or animal species, located within a regional water supply watershed, as well as potentially receiving toxics from run-off of adjacent road. Most impacts on wetland functions/ values attributed to this wetland were assessed as low, except for high impacts on rare species. This is a common wetland type in Labrador however due to the potential for this wetland to have three critical values W3-WL7 is considered to be of elevated value in terms of wetland function and may require specific mitigation measures as determined by the regulators.

Table 5.2: Regionally Rare Plant Species Recorded in Wetlands within Study Areas

COMMON NAME	*SCIENTIFIC NAME*	PROVISIONAL 2010 SRANK FOR LABRADOR	W4-WL1	W3-WL1	W3-WL2	W3-WL3	W3-WL4	W3-WL5	W3-WL6	W3-WL7
Bartram Shadbush	*Amelanchier bartramiana*	S3S5						x		
Brownish Sedge	*Carex brunnescens ssp. brunnescens*	S3S5				x	x		x	
Little Prickly Sedge	*Carex echinata subsp. echinata*	S3S5	x			x		x		
Coast Sedge	*Carex exilis*	S3S5		x						
Black Sedge	*Carex nigra*	S3S5			x			x		
Marsh Cinquefoil	*Comarum palustre*	S3S5	x				x		x	x
Tickle Grass	*Deschampsia cespitosa*	S3S5	x		x			x	x	x
Hornemann's Willow-Herb	*Epilobium hornemannii*	S3S4						x		
Water Horsetail	*Equisetum fluviatile*	S3S4	x			x				
Russet Cotton-Grass	*Eriophorum chamissonis*	S3S5				x		x		
Narrow-Panicled Rush	*Juncus brevicaudatus*	S3S4	x					x		
Naked Miterwort	*Mitella nuda*	S3S4				x				
Bebb's Willow	*Salix bebbiana*	S2S4	x				x	x	x	x
Pussy Willow	*Salix discolor*	S3S4	x							
Prairie Willow	*Salix humilis*	S3S5				x				

COMMON NAME	*SCIENTIFIC NAME*	PROVISIONAL 2010 SRANK FOR LABRADOR	W4-WL1	W3-WL1	W3-WL2	W3-WL3	W3-WL4	W3-WL5	W3-WL6	W3-WL7
Rock Willow	*Salix vestita*	S3S4						x		
Canada Burnet	*Sanguisorba canadensis*	S3S5				x	x	x	x	x
Pod Grass	*Scheuchzeria palustris*	S3S5							x	
Hooded Ladies'-Tresses	*Spiranthes romanzoffiana*	S3S4				x				

6.0 CONCLUSION

This study has confirmed the presence of one wetland habitat within the Wabush 4 Study Area and seven wetlands in the Wabush 3 Study Area (Figure 5-1). The majority of the wetlands are classified as fen and fen complexes ranging in size from 0.35 ha to over 5 ha in size. Delineations were based mainly on topographic relief and soil properties.

Of the eight wetlands identified in the Wabush 4 and Wabush 3 Study Areas, four wetlands (W4-WL1, W3-WL4, W3-WL6 and W3-WL7) were all found to be of elevated value in terms of wetland functions. All of these wetlands provided at least 3 critical values with W3-WL6 providing four critical values. Regionally rare species (based on ACCDC status ranks) were recorded in all eight wetlands assessed during this study. It should be noted that since these species are not listed under SARA or NLESA, they are not provided legal protection under federal or provincial legislation. According to ACCDC these species are potentially rare for the regional area but are typically common species in other areas.

The one wetland assessed in the Wabush 4 Ski Hill Study Area is not expected to be impacted by the project and as such the functions and values this wetland provides will likely remain following construction of the ski hill. Wetlands located in the Wabush 3 Study Area are expected to be completely lost and as such all functions and values these wetlands provide are expected to be lost. Regulators (i.e. NFLD Department of Environment, Environment Canada) should be consulted regarding the wetland habitat located within Wabush 3 Study Area.

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APPENDIX A

WETLAND DELINEATION & HABITAT ASSESSMENT DATA SHEETS

Freshwater Wetland Data Sheet: W4-WL1

Date: Aug. 16/17
Investigator(s): Scott Burley/ Cheryl Tucker
Weather: Clear
Topographic Sheet: 23B/14
Aerial Photo Number: NA

Wetland Atlas Number : NA
GIS Map / Stand No. : NA
Wetland Form[1]:: Shrub Swamp
Wetland size: 0.49 ha
Associated Watercourse: Unnamed Stream

Wetland Type:
1.Aquatic bed/unconsolidated bottom (AB) ____
2.Bog(BO) ____
3.Fen (FE) ____
4.Emergent wetland (EW) ____
5.Shrub wetland (SB) X
6.Forested wetland (FW) ____

Wetland Class:
1.Open water X
2.Deep marsh ____
3.Shallow marsh ____
4.Seasonally flooded flats ____
5.Meadow ____
6.Shrub swamp X
7.Wooded swamp ____
8.Bog ____

Wetland Subclass:
1.Vegetated open water ____
2.Non-vegetated OW ____
3.Floating leaved OW ____
4.Rooted floating leaved OW ____
5.Dead woody OW ____
6.Vegetated deep marsh ____
7.Non-vegetated DM ____
8.Dead woody DM ____
9.Sub-shrub DM ____
10.Floating leaved DM ____
11.Rooted floating leaved DM ____
12.Robust DM ____
13.Narrow-leaved DM ____
14.Broad-leaved DM ____
15.Dead woody shallow marsh ____
16.Robust SM ____
17.Narrow leaved SM X
18.Broad leaved SM ____
19.Floating leaved SM ____
20.Rooted floating leaved SM ____
21.Non-vegetated SM ____
22.Emergent seasonally flooded flats ____
23.Shrubby SFF ____
24.Grazed meadow ____
25.Ungrazed M ____
26.Sedge M ____
27.Sapling shrub swamp ____
28.Bushy SS X
29.Compact SS X
30.Low sparse SS ____
31.Deciduous wooded swamp ____
32.Evergreen WS ____
33.Wooded bog ____
34.Shrubby B ____
35.Open B ____

Water Regime Indicator:
1.Permanently flooded X
2.Saturated ____
3.Seasonally flooded ____

Water Depth:
1.0-5 cm ____
2.5-20 cm ____
3.20-50 cm X
4.50-100 cm ____
5.>100 cm ____

Note: 1. Canadian Wetland Classification System (2nd Edition)

WL1-WL1

Impounded Wetland Type:
1.Beaver Pond _____
2.Man-made Impoundment X
3.Ducks Unlimited Impoundment ____
4. None of the above X

Percent Vegetation Cover:
1.> 95% _____
2.76-95% in peripheral band ___
3.76-96% in patches ___
4.26-75% in peripheral band ____
5.26-75% in patches X
6. 5-25% in peripheral band ____
7. 5-25% in patches ____
8.< 5% ____

Wetland Site:
1.Lacustrine X
2.Riverine _____
3.Palustrine ____
4.Isolated _____
5.Deltaic ___

Vegetation Types (%):
1.Deciduous trees –
2.Coniferous trees 2% - Black Spruce
3.Dead trees - 5%
4.Tall shrubs 15% - Salix, Alnus incana
5.Low shrubs 15% - Ledum Kalmia
6.Dead shrubs –
7.Herbs 5% - Maianthemum trifolia
8.Mosses 20% - Sphagnum
9.Narrow-leaved emergents 25% - Carex, grasses
10.Broad-leaved emergents –
11.Robust emergents –
12.Free-floating plants –
13.Floating plants (rooted) –
14.Submerged plants –
15. Other Riparian water

Interspersion: 1.Minimal X 2.Low _____ 3.Medium ___ 4.High ____

Conductivity: N/A
Alkalinity: N/A
pH: N/A

Hydrological Classification:
1.Surface water depression X
2.Ground water depression _____
3.Surface water slope _____
4.Ground water slope ____

Inlets/Outlets/water bodies:
Stream inlet from north end. outlet under road @ South end

Wildlife: (Observation/Signs/Reports)

W4-WL1

Adjacent Wildlife habitat (%):

1.Salt marsh ____
2.Forest 20%
3.Dykelands ____
4.Mudflats ____
5.Beach ____
6.River ____
7. Other 20%

Description: Road @ South side

Surrounding Land Use %:

1 Agriculture ____
2.Forestry ____
3 Recreation 10%
4.Industrial _____
5.Urban development ___
6.Transportation 20%
7.Residential ____
8.Waste Disposal ____
9.Scientific Research ____
10.Trapping ____
11.Education ____
12.Seasonal resident ____

Description:

Disturbance: 1.Low _____ 2.Moderate X 3.High ____

Description: Road @ South side

Roads and/or tracks:

1.Private road adjacent ____
2.DOT road adjacent X
3.Private road within ____
4.DOT road within ____
5.Vehicle tracks ____
6.Other ____

Description:

Existing Uses of Wetlands:

1.Economic use (e.g. farming) ___
2.Recreational activities ___
3.Aesthetics ____
4.Education & public awareness ____
5. None evident X

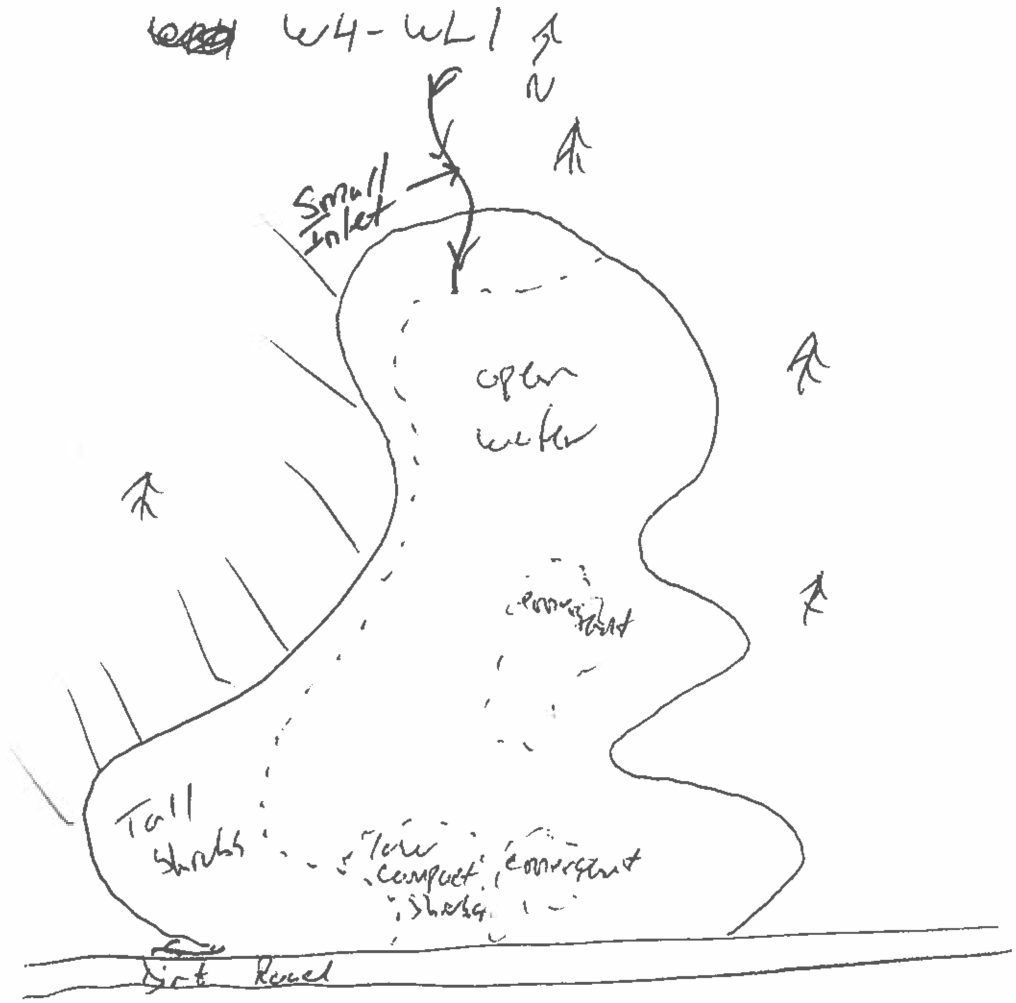
Potential Threats:

Special Features:

1.Rare wetland type ___
2.Rare animal or plant species X
3.Habitat of rare species X
4.Nesting site for colonial water birds ____
5.Migration stop-over site ____
6. None evident _____

Description: Potential Habitat: Salix bebbiana present in wetland

Notes:


W4-WL1
N
Small Inlet
open water
emergent
Tall shrubs
low compact shrubs
emergent
Dirt Road

WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: IOC - W4Ski Municipality/County: Lab City Sampling Date: Aug. 16/12

Applicant/Owner: IOC Sampling Point: W4-WL1-WP1

Investigator(s): SB/CT Section, Township, Range: Wabush 4 Ski Hill

Landform (hillslope, terrace, etc.): ~~Slope~~ depression Local relief (concave, convex, none): ~~Flat~~ Concave

Slope (%): 2% ~~Lat:~~ 639831 ~~Long:~~ 5869082 Datum: NAD27

Soil Map Unit Name: Meta-ironstone quartzite Wetland Type: Shrub

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 ____

If yes, optional Wetland Site ID: W4-WL1

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Black Spruce	5%	✓	FACW
2.			
3.			
4.			
5.			
	5% = Total Cover		

Sapling/Shrub Stratum (Plot size: 5m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Alnus incana	2%		FACW
2. Dwarf birch (Betula glandulosa)	2%		OBL
3. Labrador tea	5%	✓	FACW
4. Leather leaf	5%	✓	OBL
5.			
	14% = Total Cover		

Herb Stratum (Plot size: 1m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Bake Apple	10%	✓	OBL
2. Menyanthes trifolia	5%	✓	OBL
3. Carex magellanica	5%	✓	OBL
4. Equisetum sylvaticum	2%		FAC
5.			
6.			
7.			
8.			
9.			
10.			
	22% = Total Cover		

Woody Vine Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
	____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (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: WM-WU-WP1

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
0-40							organic	peat

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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): 15 cm

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): Surface

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: TUC-WH SKi Hill Municipality/County: Lab City Sampling Date: Aug. 16/12

Applicant/Owner: Tuc Sampling Point: WH-WL1-UP1

Investigator(s): SB/CT Section, Township, Range: Labrador 4

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

Slope (%): 2% Lat: 6398115 Long: 5869071 Datum: NAD27

Soil Map Unit Name: Meta-ironstone quartzite Wetland Type: upland

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 ✓

If yes, optional Wetland Site ID: ____

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Black Spruce	10%	✓	FACW
2. Balsam Fir	2%		
3.			
4.			
5.			
	12% = Total Cover		
Sapling/Shrub Stratum (Plot size: 5m)			
1. Labrador Tea	30%	✓	FACW
2.			
3.			
4.			
5.			
	30% = Total Cover		
Herb Stratum (Plot size: 1m)			
1. Bake Apple	5%	✓	OBL
2. Vaccinium angustifolium	10%	✓	FAC
3. Gaultheria hispida	2%		FAC
4. Equisetum Sylvaticum	2%		FAC
5.			
6.			
7.			
8.			
9.			
10.			
	19% = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (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.)

these species are known to occur on dryer sites in Labrador as well as in wetlands

SOIL

Sampling Point: WH-W1-UP1

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

Depth (inches) cm	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
O 0-10		100					Organic	
A 10-30	10YR 3/3	100					Sand	

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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:

Remarks:

Freshwater Wetland Data Sheet: 473-641

Date: Aug 14/12
Investigator(s): Scott Burley/ Cleve Tucker
Weather: Rain
Topographic Sheet: 23B/14
Aerial Photo Number: NA

Wetland Atlas Number : NA
GIS Map / Stand No. : NA
Wetland Form[1]:: Fen
Wetland size: [redacted] ha c. 35 Ha
Associated Watercourse: NA

Wetland Type:
1.Aquatic bed/unconsolidated bottom (AB) ____
2.Bog(BO) ____
3.Fen (FE) X
4.Emergent wetland (EW) ____
5.Shrub wetland (SB) ____
6.Forested wetland (FW) ____

Wetland Class:
1.Open water ___
2.Deep marsh ____
3.Shallow marsh _____
4.Seasonally flooded flats ____
5.Meadow X
6.Shrub swamp _____
7.Wooded swamp ____
8.Bog ___
~~9. Fen X~~

Wetland Subclass:
1.Vegetated open water ___
2.Non-vegetated OW ___
3.Floating leaved OW ___
4.Rooted floating leaved OW ___
5.Dead woody OW ____
6.Vegetated deep marsh ____
7.Non-vegetated DM ____
8.Dead woody DM ____
9.Sub-shrub DM ____
10.Floating leaved DM ____
11.Rooted floating leaved DM ____
12.Robust DM ____
13.Narrow-leaved DM ____
14.Broad-leaved DM ____
15.Dead woody shallow marsh ____
16.Robust SM _____
17.Narrow leaved SM _____
18.Broad leaved SM ____
19.Floating leaved SM ____
20.Rooted floating leaved SM ____
21.Non-vegetated SM ____
22.Emergent seasonally flooded flats ____
23.Shrubby SFF ____
24.Grazed meadow ____
25.Ungrazed M ____
26.Sedge M X
27.Sapling shrub swamp ____
28.Bushy SS ____
29.Compact SS _____
30.Low sparse SS ____
31.Deciduous wooded swamp ____
32.Evergreen WS ____
33.Wooded bog ____
34.Shrubby B _____
35.Open B _____

Water Regime Indicator:
1.Permanently flooded ___
2.Saturated _____
3.Seasonally flooded X

Water Depth:
1.0-5 cm X
2.5-20 cm _____
3.20-50 cm ____
4.50-100 cm ____
5.>100 cm ____

Note: 1. Canadian Wetland Classification System (2nd Edition)

Impounded Wetland Type:
1.Beaver Pond _____
2.Man-made Impoundment ____
3.Ducks Unlimited Impoundment ____
4. None of the above X

Percent Vegetation Cover:
1.> 95% X
2.76-95% in peripheral band ___
3.76-96% in patches ___
4.26-75% in peripheral band ____
5.26-75% in patches ____
6. 5-25% in peripheral band ____
7. 5-25% in patches ____
8.< 5% ____

Wetland Site:
1.Lacustrine ____
2.Riverine _____
3.Palustrine ____
4.Isolated X
5.Deltaic ___

Vegetation Types (%):
1.Deciduous trees 0
2.Coniferous trees
3.Dead trees
4.Tall shrubs
5.Low shrubs - Dwarf Birch 20%
6.Dead shrubs
7.Herbs - Violet
8.Mosses
9.Narrow-leaved emergents 100% - Carex, Calamagrostis
10.Broad-leaved emergents 0%
11.Robust emergents 0%
12.Free-floating plants 0%
13.Floating plants (rooted) —
14.Submerged plants —
15. Other —

Interspersion: 1.Minimal X 2.Low _____ 3.Medium ___ 4.High ____

Conductivity: N/A
Alkalinity: N/A
pH: N/A

Hydrological Classification:
1.Surface water depression X
2.Ground water depression _____
3.Surface water slope _____
4.Ground water slope ____

Inlets/Outlets/water bodies:
None observed

Wildlife: (Observation/Signs/Reports)

Adjacent Wildlife habitat (%):

1.Salt marsh ____
2.Forest 5%
3.Dykelands ____
4.Mudflats ____
5.Beach ____
6.River ____
7. Other 95%

Description: Rock/ Alpine tarrain

Surrounding Land Use %:

1 Agriculture ____
2.Forestry ____
3 Recreation ____
4.Industrial X
5.Urban development ____
6.Transportation ____
7.Residential ____
8.Waste Disposal ____
9.Scientific Research ____
10.Trapping ____
11.Education ____
12.Seasonal resident ____

Description: Rec mine in area

Disturbance: 1.Low ____ 2.Moderate X 3.High ____

Description: Drill tracks in wetland

Roads and/or tracks:

1.Private road adjacent X
2.DOT road adjacent ____
3.Private road within ____
4.DOT road within ____
5.Vehicle tracks ____
6.Other ____

Description: Dirt road along north + south side

Existing Uses of Wetlands:

1.Economic use (e.g. farming) ____
2.Recreational activities ____
3.Aesthetics ____
4.Education & public awareness ____
5. None evident X

Potential Threats:

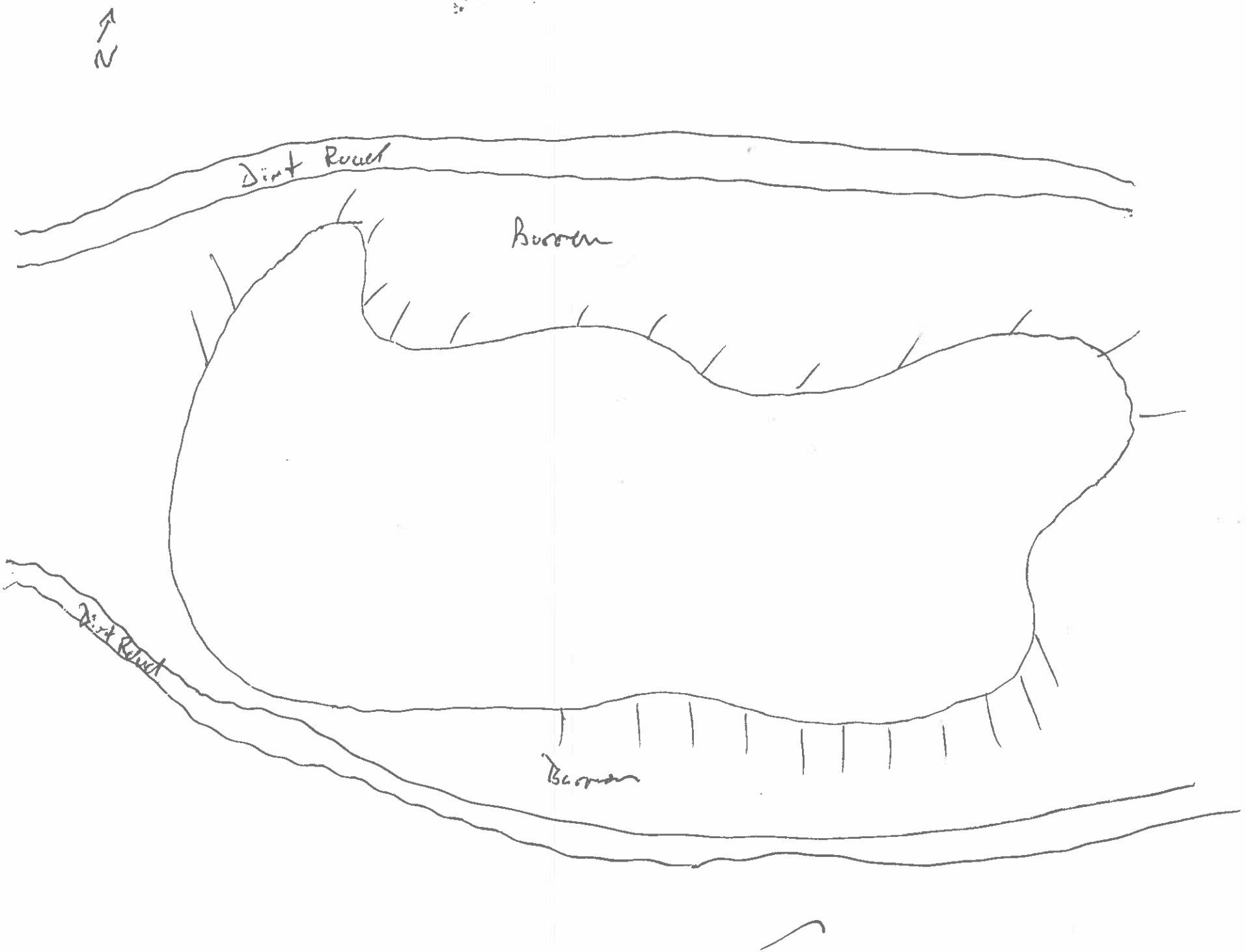
Special Features:

1.Rare wetland type ____
2.Rare animal or plant species ____
3.Habitat of rare species X
4.Nesting site for colonial water birds ____
5.Migration stop-over site ____
6. None evident ____

Description: Potential Habitat

Notes:

W3-WL1



WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: FOC-Wetland 3 Municipality/County: Hub City Sampling Date: Aug. 14/12

Applicant/Owner: FOC Sampling Point: W3-W1-WP1

Investigator(s): S. Bailey / C. Tucker Section, Township, Range: Wetland 3

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

Slope (%): – ~~Lat.~~ N 637932 ~~Long.~~ E 587137? Datum: NAD 27

Soil Map Unit Name: Metasiltstone, Quartzite Wetland Type: Fen

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: W3-W1

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: NA)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 1m)			
1. Calamagrostis canadensis	20%	✓	FACW
2. Carex ~~vesicaria~~ gracilis	25%	✓	OBL
3. Carex ~~gracilis~~ vesicaria	45%	✓	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	90%	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (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.)
GPS Points: W, Wa-Wq

SOIL

Sampling Point: W3-WLT WP1

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
0-1							Organic	
1-12	6/1 5/10B	100	—	—	—	—	Silty Sand	
12-30	5YR 3/2	100					Coarse Sand	

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ✓ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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:

Remarks:

Wetland situated in a basin depression in the landscape

WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: Tcc wetland 3 Municipality/County: Colchester Sampling Date: Aug. 4/12

Applicant/Owner: TCC Sampling Point: WT-W1-UP1

Investigator(s): SB/CT Section, Township, Range: _____

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

Slope (%): 15% Lat: 637919 Long: 5871383 Datum: NAD 27

Soil Map Unit Name: Meta-ironstone, quartzite Wetland Type: upland

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: _____
Wetland Hydrology Present?	Yes _____ No ✓	

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Black Spruce	2%		FACW
2.			
3.			
4.			
5.			
	2% = Total Cover		
Sapling/Shrub Stratum (Plot size: 5m)			
1. Paper Birch	30%	✓	OBL
2. Labrador Tea	10%	✓	FACW
3.			
4.			
5.			
	40% = Total Cover		
Herb Stratum (Plot size: 1m)			
1. Mountain Cranberry	20%	✓	FAC
2. Black Crowberry	20%	✓	FAC
3. Bunch berry	5%		FAC
4. Rock cap fern	2%		OBL
5.			
6.			
7.			
8.			
9.			
10.			
	47% = Total Cover		
Woody Vine Stratum (Plot size: ~)			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (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.)

These species occur in both wetland and upland in Labrador

SOIL

Sampling Point: W3-WL1-UP1

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							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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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:

Remarks:

Freshwater Wetland Data Sheet: W3-WL2

Date: Aug 4/12
Investigator(s): Scott Burley/Cleary/Tucker
Weather: Cloudy/rain
Topographic Sheet: 23B/14
Aerial Photo Number: NA

Wetland Atlas Number : NA
GIS Map / Stand No. : NA
Wetland Form[1]:: Fen
Wetland size: ~~1.3 ha~~ 0.42 Ha
Associated Watercourse: Unnamed Stream

Wetland Type:
1.Aquatic bed/unconsolidated bottom (AB) ____
2.Bog(BO) ____
3.Fen (FE) X
4.Emergent wetland (EW) ____
5.Shrub wetland (SB) ____
6.Forested wetland (FW) ____

Wetland Class:
1.Open water X
2.Deep marsh ____
3.Shallow marsh X
4.Seasonally flooded flats ____
5.Meadow X
6.Shrub swamp ____
7.Wooded swamp ____
8.Bog ____

Wetland Subclass:
1.Vegetated open water X
2.Non-vegetated OW X
3.Floating leaved OW ____
4.Rooted floating leaved OW ____
5.Dead woody OW ____
6.Vegetated deep marsh ____
7.Non-vegetated DM ____
8.Dead woody DM ____
9.Sub-shrub DM ____
10.Floating leaved DM ____
11.Rooted floating leaved DM ____
12.Robust DM ____
13.Narrow-leaved DM ____
14.Broad-leaved DM ____
15.Dead woody shallow marsh ____
16.Robust SM ____
17.Narrow leaved SM X
18.Broad leaved SM ____
19.Floating leaved SM ____
20.Rooted floating leaved SM ____
21.Non-vegetated SM ____
22.Emergent seasonally flooded flats ____
23.Shrubby SFF X
24.Grazed meadow ____
25.Ungrazed M ____
26.Sedge M ____
27.Sapling shrub swamp ____
28.Bushy SS ____
29.Compact SS ____
30.Low sparse SS ____
31.Deciduous wooded swamp ____
32.Evergreen WS ____
33.Wooded bog ____
34.Shrubby B ____
35.Open B ____

Water Regime Indicator:
1.Permanently flooded X
2.Saturated X
3.Seasonally flooded ____

Water Depth:
1.0-5 cm X
2.5-20 cm ____
3.20-50 cm X
4.50-100 cm ____
5.>100 cm ____

Note: 1. Canadian Wetland Classification System (2nd Edition)

Impounded Wetland Type:
1.Beaver Pond ____
2.Man-made Impoundment ____
3.Ducks Unlimited Impoundment ____
4. None of the above X

Percent Vegetation Cover:
1.> 95% ____
2.76-95% in peripheral band ____
3.76-96% in patches X
4.26-75% in peripheral band ____
5.26-75% in patches ____
6. 5-25% in peripheral band ____
7. 5-25% in patches ____
8.< 5% ____

Wetland Site:
1.Lacustrine ____
2.Riverine ____
3.Palustrine ____
4.Isolated X
5.Deltaic ____

Vegetation Types (%):
1.Deciduous trees –
2.Coniferous trees 10% Black Spruce
3.Dead trees 10%
4.Tall shrubs - 20% Salix
5.Low shrubs - 30% - Dwarf Birch, Leatherleaf, Kalmia polifolia
6.Dead shrubs –
7.Herbs 30% - Bake Apple
8.Mosses 75% - Sphagnum
9.Narrow-leaved emergents 60% - Cotton, Scirpus
10.Broad-leaved emergents –
11.Robust emergents –
12.Free-floating plants –
13.Floating plants (rooted) –
14.Submerged plants –
15. Other –

Interspersion: 1.Minimal X 2.Low ____ 3.Medium ____ 4.High ____

Conductivity: N/A
Alkalinity: N/A
pH: N/A

Hydrological Classification:
1.Surface water depression X
2.Ground water depression ____
3.Surface water slope ____
4.Ground water slope ____

Inlets/Outlets/water bodies:
~~no recharge~~ outlet @ west end of WL

Wildlife: (Observation/Signs/Reports)

Adjacent Wildlife habitat (%):

1.Salt marsh ____
2.Forest ____
3.Dykelands ____
4.Mudflats ____
5.Beach ____
6.River ____
7. Other X

Description: Alpine / Rock Barren

Surrounding Land Use %:

1 Agriculture ____
2.Forestry ____
3 Recreation ____
4.Industrial X
5.Urban development ____
6.Transportation ____
7.Residential ____
8.Waste Disposal ____
9.Scientific Research ____
10.Trapping ____
11.Education ____
12.Seasonal resident ____

Description: Iron mining activity

Disturbance: 1.Low X 2.Moderate ____ 3.High ____

Description: Road adjacent

Roads and/or tracks:

1.Private road adjacent X
2.DOT road adjacent ____
3.Private road within ____
4.DOT road within ____
5.Vehicle tracks ____
6.Other ____

Description: Dirt road along North & South side

Existing Uses of Wetlands:

1.Economic use (e.g. farming) ____
2.Recreational activities ____
3.Aesthetics ____
4.Education & public awareness ____
5. None evident X

Potential Threats:

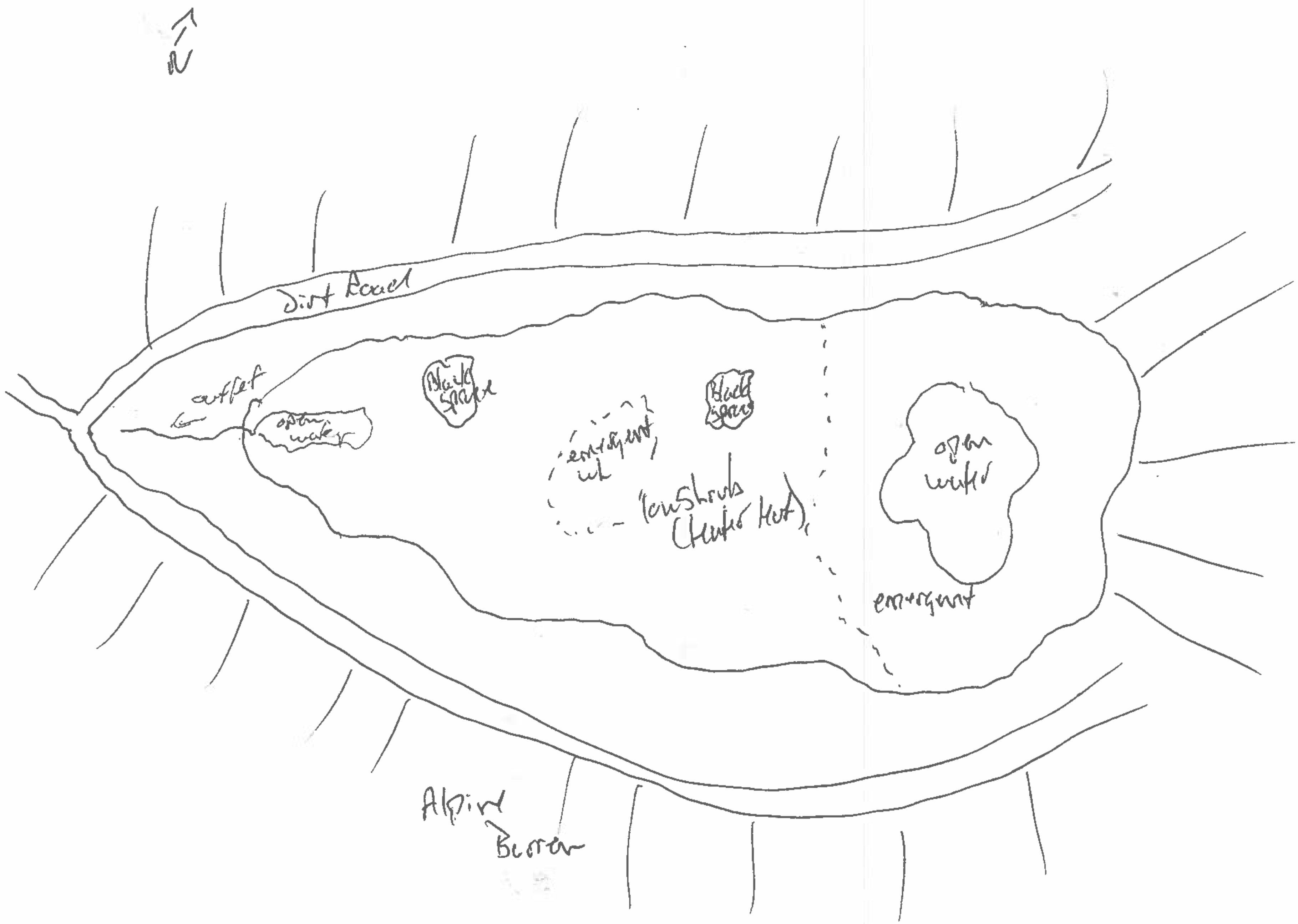
Special Features:

1.Rare wetland type ____
2.Rare animal or plant species ____
3.Habitat of rare species X
4.Nesting site for colonial water birds ____
5.Migration stop-over site ____
6. None evident ____

Description:

Notes:

W3 – Wet


N
Dirt Road
outlet
open water
Black Spruce
emergent wl
low shrub
Black Spruce
open water
emergent
Alpine Barren

WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: IOC Wabush 3 Municipality/County: Lab City Sampling Date: Aug 14/12

Applicant/Owner: IOC Sampling Point: W3-WL2-WP1

Investigator(s): SR/CT Section, Township, Range: Wabush 3

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

Slope (%): 1% ~~Lat:~~ 638154 ~~Long:~~ 5971438 Datum: NAD 27

Soil Map Unit Name: Metasiltstone quartzite Wetland Type: Fen

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 ____

If yes, optional Wetland Site ID: W3-WL1

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Black Spruce	5%	✓	FACW
2.			
3.			
4.			
5.			
	5% = Total Cover		
Sapling/Shrub Stratum (Plot size: 5m)			
1. Black Spruce	25%	✓	FACW
2. Dwarf Birch	10%		OBL
3. Salix bebbiana	5%		FAC
4. Leather leaf	20%	✓	OBL
5. Labrador Tea	5%		FACW
	65 = Total Cover		
Herb Stratum (Plot size: 1m)			
1. Bake apple	10%	✓	OBL
2. Scirpus cespitosus	20%	✓	OBL
3. Kalmia polifolia	5%		OBL
4. Cornus canadensis	15%	✓	OBL
5.			
6.			
7.			
8.			
9.			
10.			
	50% = Total Cover		
Woody Vine Stratum (Plot size: —)			
1.			
2.			
	____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (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: 43-WL1-4

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
0-40+							Organic	Mat

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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): 3cms

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): Surface

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Aug. 14/12

Project/Site: TUC Wabush 3 Municipality/County: Lab City Sampling Date: Aug 14/12

Applicant/Owner: TUC Sampling Point: W3-WL1-UP1

Investigator(s): SB/CT Section, Township, Range: Wabush 3

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

Slope (%): 15% ~~Lat~~ 638159 Long: 5871[illegible]3 Datum: NAD 27

Soil Map Unit Name: Mafic - ironstone quartzite Wetland Type: ~~Fen~~ upland

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 ✓

If yes, optional Wetland Site ID: ____

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Black Spruce	50	✓	FACW
2. B. Fir	20		FAC
3.			
4.			
5.			
	70 = Total Cover		

Sapling/Shrub Stratum (Plot size: 5m)			
1. Black Spruce	5%		FACW
2. Labrador Tea	20%	✓	FACW
3. Dwarf birch	25%	✓	OBL
4. Bilberry	15%	✓	UPL
5.			
	65% = Total Cover		

Herb Stratum (Plot size: 1m)			
1. Maianthemum canadense	2%		FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	2% = Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (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.)

WL GPS points: 016 - These species occur in wetland and upland habitats in Labrador

SOIL

Sampling Point: WS-WL1-UP1

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
O 0-10							Organic	
A 10-15	Gley 5-N	100					Si. Hy Sand.	
B 15-40	2.5YR 3-4	100					Sand	

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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:

Remarks:

Freshwater Wetland Data Sheet: W3-WL3

Date: Aug. 14/12
Investigator(s): Scott Burley/Cheryl Tucker
Weather: Rain
Topographic Sheet: 23B/14
Aerial Photo Number: NA

Wetland Atlas Number : NA
GIS Map / Stand No. : NA
Wetland Form[1]:: Fen
Wetland size: ~~5.70~~ ha 5.42 ha
Associated Watercourse: NA

Wetland Type:
1.Aquatic bed/unconsolidated bottom (AB) ____
2.Bog(BO) ____
3.Fen (FE) X
4.Emergent wetland (EW) ____
5.Shrub wetland (SB) ____
6.Forested wetland (FW) ____

Wetland Class:
1.Open water X
2.Deep marsh ____
3.Shallow marsh ____
4.Seasonally flooded flats ____
5.Meadow X
6.Shrub swamp X
7.Wooded swamp X
8.Bog ____

Wetland Subclass:
1.Vegetated open water X
2.Non-vegetated OW X
3.Floating leaved OW ____
4.Rooted floating leaved OW ____
5.Dead woody OW ____
6.Vegetated deep marsh ____
7.Non-vegetated DM ____
8.Dead woody DM ____
9.Sub-shrub DM ____
10.Floating leaved DM ____
11.Rooted floating leaved DM ____
12.Robust DM ____
13.Narrow-leaved DM ____
14.Broad-leaved DM ____
15.Dead woody shallow marsh ____
16.Robust SM ____
17.Narrow leaved SM ____
18.Broad leaved SM ____
19.Floating leaved SM ____
20.Rooted floating leaved SM ____
21.Non-vegetated SM ____
22.Emergent seasonally flooded flats X
23.Shrubby SFF X
24.Grazed meadow ____
25.Ungrazed M ____
26.Sedge M ____
27.Sapling shrub swamp ____
28.Bushy SS X
29.Compact SS ____
30.Low sparse SS ____
31.Deciduous wooded swamp ____
32.Evergreen WS ____
33.Wooded bog ____
34.Shrubby B ____
35.Open B ____

Water Regime Indicator:
1.Permanently flooded X
2.Saturated X
3.Seasonally flooded ____

Water Depth:
1.0-5 cm X
2.5-20 cm ____
3.20-50 cm X
4.50-100 cm ____
5.>100 cm ____

Note: 1. Canadian Wetland Classification System (2nd Edition)

Impounded Wetland Type:
1.Beaver Pond _____
2.Man-made Impoundment ____
3.Ducks Unlimited Impoundment ____
4. None of the above X

Percent Vegetation Cover:
1.> 95% _____
2.76-95% in peripheral band ___
3.76-96% in patches X
4.26-75% in peripheral band ____
5.26-75% in patches ____
6. 5-25% in peripheral band ____
7. 5-25% in patches ____
8.< 5% ____

Wetland Site:
1.Lacustrine ____
2.Riverine _____
3.Palustrine X
4.Isolated _____
5.Deltaic ___

Vegetation Types (%):
1.Deciduous trees 30 Betula coryl. foli.
2.Coniferous trees 15-20 Black Spruce, larch L. B. fir
3.Dead trees 1-5
4.Tall shrubs 20-30 Salix Alnus incana
5.Low shrubs 30-50 Dwarf birch, leather leaf
6.Dead shrubs -
7.Herbs 10-20 - Bake Apple, Bunch berry, Rex orchid, Potentilla
8.Mosses 90-95 Sphagnum
9.Narrow-leaved emergents - 45-50 - Carex
10.Broad-leaved emergents -
11.Robust emergents -
12.Free-floating plants -
13.Floating plants (rooted) -
14.Submerged plants -
15. Other -

Interspersion: 1.Minimal ___ 2.Low _____ 3.Medium X 4.High ____

Conductivity: N/A
Alkalinity: N/A
pH: N/A

Hydrological Classification:
1.Surface water depression _____
2.Ground water depression _____
3.Surface water slope X
4.Ground water slope ____

Inlets/Outlets/water bodies:
Inlet @ South side + outlets @ NW, N, and NE side.

Wildlife: (Observation/Signs/Reports)
Passerines
Rabbit droppings.

Adjacent Wildlife habitat (%):

1.Salt marsh ____
2.Forest 50%
3.Dykelands ____
4.Mudflats ____
5.Beach ____
6.River ____
7. Other 50%

Description: Alpine Barren

Surrounding Land Use %:

1 Agriculture ____
2.Forestry ____
3 Recreation ____
4.Industrial X
5.Urban development ____
6.Transportation ____
7.Residential ____
8.Waste Disposal ____
9.Scientific Research ____
10.Trapping ____
11.Education ____
12.Seasonal resident ____

Description: ICC

Disturbance: 1.Low _____ 2.Moderate X 3.High ____

Description: Drill Rig track through wetland

Roads and/or tracks:

1.Private road adjacent _____
2.DOT road adjacent ____
3.Private road within ____
4.DOT road within ____
5.Vehicle tracks X
6.Other ____

Description:

Existing Uses of Wetlands:

1.Economic use (e.g. farming) ____
2.Recreational activities ____
3.Aesthetics ____
4.Education & public awareness ____
5. None evident X

Potential Threats:

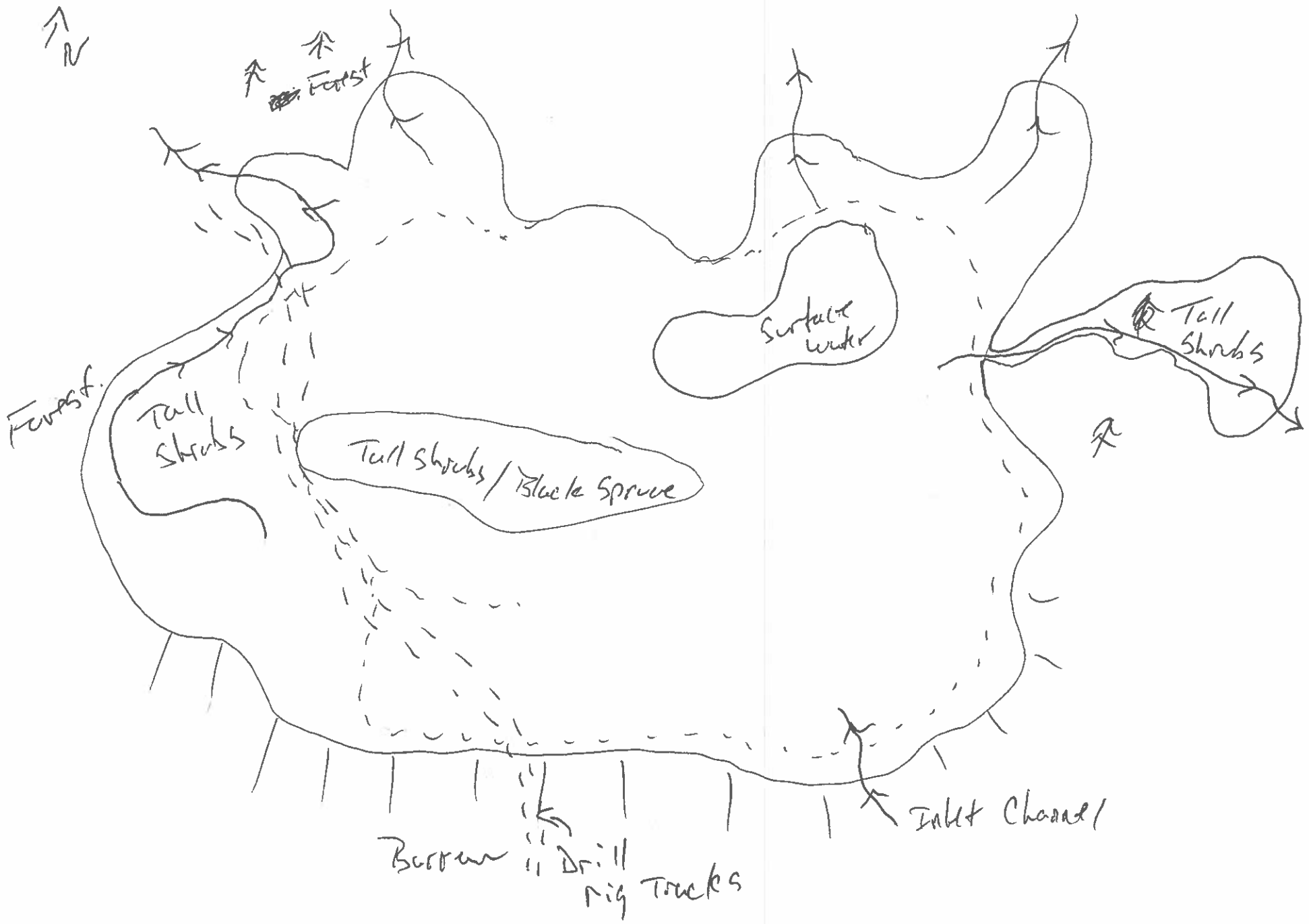
Special Features:

1.Rare wetland type ____
2.Rare animal or plant species ____
3.Habitat of rare species X
4.Nesting site for colonial water birds ____
5.Migration stop-over site ____
6. None evident _____

Description:

Notes:

WB-WL3


N
Forest
Forest
Tall Shrubs
Tall Shrubs / Black Spruce
Surface water
Tall Shrubs
Inlet Channel
Borrow
Drill rig Trucks

WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: IOC Wabush 3 Municipality/County: Lab City Sampling Date: Aug. 14/12

Applicant/Owner: IOC Sampling Point: W3-WL3-UP1

Investigator(s): SB/CT Section, Township, Range: Wabush 3

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

Slope (%): 1%-2 ~~Lat:~~ 637629 Long: 5871612 Datum: NAD 27

Soil Map Unit Name: Meta-ironstone quartzite Wetland Type: Fen

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:	W3-WL3

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Black Spruce	10%	✓	FACW
2. Larch	2%		FAC
3.			
4.			
5.			
	12% = Total Cover		
Sapling/Shrub Stratum (Plot size: 5m)			
1. Dwarf Birch	10%	✓	OBL
2. Salix ~~sp.~~ humilis	5%	✓	FACU
3.			
4.			
5.			
	15% = Total Cover		
Herb Stratum (Plot size: 1m)			
1. Carex sp vesicaria	60%	✓	OBL
2. Bog orchid	2%		FACW
3. ~~Potentilla~~ Canada burnet	10%		FACW
4. Arctic Coltsfoot	2%		FACW
5. Bilberry	20%	✓	UPL
6. Gold thread	2%		FAC
7. large leaf goldenrod	2%		FACU
8.			
9.			
10.			
	98% = Total Cover		
Woody Vine Stratum (Plot size: —)			
1.			
2.			
	____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ~~6~~ 5 (A)

Total Number of Dominant Species Across All Strata: ~~5~~ 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: W3-W13-W1

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
0-22							Organic	Black muck
22+	2.5Y 4/2	100					Silt Loam	

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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): 5cm

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): Surf

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: TCC - Wabush 3 Municipality/County: Lab City Sampling Date: ~~Aug 13~~ Aug. 14/02

Applicant/Owner: TCC Sampling Point: W3-UL3-UP1

Investigator(s): SB/CT Section, Township, Range: Wabush 3

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

Slope (%): 15% Lat: 637633 Long: 5871608 Datum: NAD 27

Soil Map Unit Name: Meta-ironstone quartzite Wetland Type: Upland

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 ✓

If yes, optional Wetland Site ID: ____

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. N. spruce	50%	✓	FACW
2. Betula papyrifera	20%		FACU
3.			
4.			
5.			
	7	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5m)			
1. Dwarf birch	40%		OBL
2. Split discolor	5%	✓	FAC
3. Labrador tea	10%	✓	FACW
4.			
5.			
	19	= Total Cover	
Herb Stratum (Plot size: 1m)			
1. Bunchberry	5%	✓	FAC
2. Bilberry	100%	✓	UPL
3. Mountain cranberry	5%	✓	FAC
4. Bluish Cranberry	2%		FAC
5.			
6.			
7.			
8.			
9.			
10.			
	22	= 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.)

Many of these species occur in both Upland & Wetland Habitat in Labrador

SOIL

Sampling Point: W3-4B3-4

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

Depth (inches) cm	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	~~10YR4/3~~						~~Silt Sand~~ Organic	
5-25	10YR4/3						Silt Sand	

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

Rock @ 25cm

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): 20cm

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:

Remarks:

Rock @ 25cm would impede drainage. Rain @ time of survey may also contribute to the presence of the water table

Freshwater Wetland Data Sheet: W3-WL4

Date: Aug. 14/12
Investigator(s): Scott Burley/Cheryl Tucker
Weather: Cloudy
Topographic Sheet: 23B/14
Aerial Photo Number: NA

Wetland Atlas Number : NA
GIS Map / Stand No. : NA
Wetland Form[1]:: Riparian Fen/Shrub Swamp
Wetland size: 1.06 ha
Associated Watercourse: Unnamed stream

Wetland Type:
1.Aquatic bed/unconsolidated bottom (AB) ____
2.Bog(BO) ____
3.Fen (FE) X
4.Emergent wetland (EW) ____
5.Shrub wetland (SB) X
6.Forested wetland (FW) ____

Wetland Class:
1.Open water ___
2.Deep marsh ____
3.Shallow marsh ____
4.Seasonally flooded flats ____
5.Meadow X
6.Shrub swamp X
7.Wooded swamp ____
8.Bog ____

Wetland Subclass:
1.Vegetated open water ___
2.Non-vegetated OW ___
3.Floating leaved OW ___
4.Rooted floating leaved OW ___
5.Dead woody OW ____
6.Vegetated deep marsh ____
7.Non-vegetated DM ____
8.Dead woody DM ____
9.Sub-shrub DM ____
10.Floating leaved DM ____
11.Rooted floating leaved DM ____
12.Robust DM ____
13.Narrow-leaved DM ____
14.Broad-leaved DM ____
15.Dead woody shallow marsh ____
16.Robust SM ____
17.Narrow leaved SM ____
18.Broad leaved SM ____
19.Floating leaved SM ____
20.Rooted floating leaved SM ____
21.Non-vegetated SM ____
22.Emergent seasonally flooded flats ____
23.Shrubby SFF X
24.Grazed meadow ____
25.Ungrazed M ____
26.Sedge M ____
27.Sapling shrub swamp ____
28.Bushy SS X
29.Compact SS ____
30.Low sparse SS ____
31.Deciduous wooded swamp ____
32.Evergreen WS ____
33.Wooded bog ____
34.Shrubby B ____
35.Open B ____

Water Regime Indicator:
1.Permanently flooded X
2.Saturated ____
3.Seasonally flooded ____

Water Depth:
1.0-5 cm X
2.5-20 cm ____
3.20-50 cm ____
4.50-100 cm ____
5.>100 cm ____

Note: 1. Canadian Wetland Classification System (2nd Edition)

Impounded Wetland Type:
1.Beaver Pond _____
2.Man-made Impoundment ____
3.Ducks Unlimited Impoundment ____
4. None of the above X

Percent Vegetation Cover:
1.> 95% X
2.76-95% in peripheral band ___
3.76-96% in patches ___
4.26-75% in peripheral band ____
5.26-75% in patches ____
6. 5-25% in peripheral band ____
7. 5-25% in patches ____
8.< 5% ____

Wetland Site:
1.Lacustrine ____
2.Riverine X
3.Palustrine ____
4.Isolated _____
5.Deltaic ___

Vegetation Types (%):
1.Deciduous trees –
2.Coniferous trees 5% B. Fir, Black Spruce
3.Dead trees 1%
4.Tall shrubs (60% Salix, Dwarf Birch
5.Low shrubs
6.Dead shrubs –
7.Herbs 30% - Viola, False Solomon seal
8.Mosses - 5% Sphagnum
9.Narrow-leaved emergents - 65% Carex
10.Broad-leaved emergents –
11.Robust emergents –
12.Free-floating plants –
13.Floating plants (rooted) –
14.Submerged plants –
15. Other

Interspersion: 1.Minimal ___ 2.Low X 3.Medium ___ 4.High ____

Conductivity: N/A
pH: N/A
Alkalinity: N/A

Hydrological Classification:
1.Surface water depression ____
2.Ground water depression ____
3.Surface water slope X
4.Ground water slope ____

Inlets/Outlets/water bodies:
Stream flowing from west to east

Wildlife: (Observation/Signs/Reports)

Adjacent Wildlife habitat (%):

1.Salt marsh ____
2.Forest Wood
3.Dykelands ____
4.Mudflats ____
5.Beach ____
6.River ____
7. Other ____

Description:

Surrounding Land Use %:

1 Agriculture ____
2.Forestry ____
3 Recreation ____
4.Industrial X
5.Urban development ____
6.Transportation ____
7.Residential ____
8.Waste Disposal ____
9.Scientific Research ____
10.Trapping ____
11.Education ____
12.Seasonal resident ____

Description: Tar mining

Disturbance: 1.Low X 2.Moderate ____ 3.High ____

Description:

Roads and/or tracks:

1.Private road adjacent X
2.DOT road adjacent ____
3.Private road within ____
4.DOT road within ____
5.Vehicle tracks ____
6.Other ____

Description:

Existing Uses of Wetlands:

1.Economic use (e.g. farming) ____
2.Recreational activities ____
3.Aesthetics ____
4.Education & public awareness ____
5. None evident X

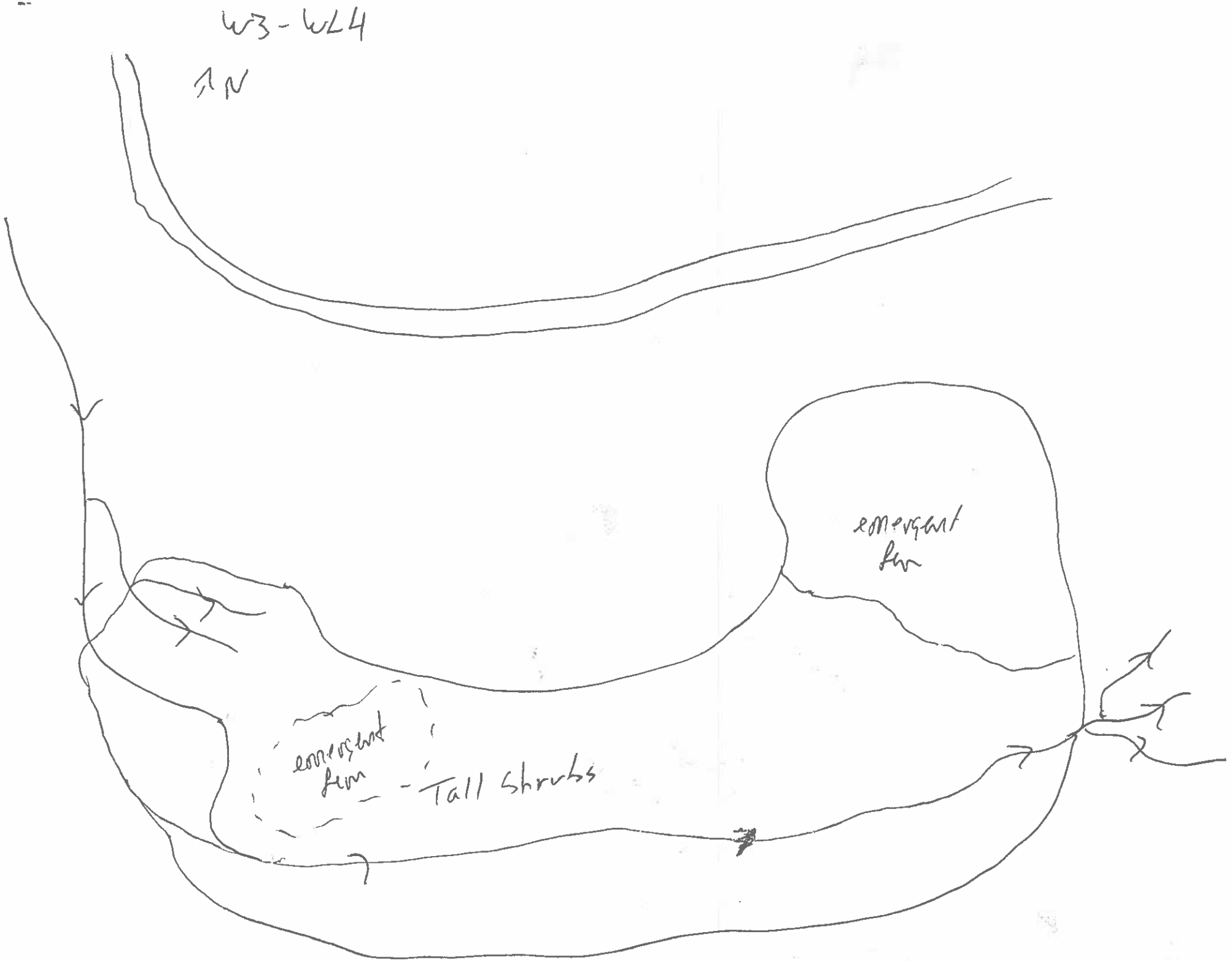
Potential Threats:

Special Features:

1.Rare wetland type ____
2.Rare animal or plant species ?
3.Habitat of rare species X
4.Nesting site for colonial water birds ____
5.Migration stop-over site ____
6. None evident ____

Description: Salix bebbiana present

Notes:


W3 - WL4
N
emergent fen
emergent fen
Tall shrubs

WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: TCC-Urbush 3 Municipality/County: Lab City Sampling Date: Aug. 14/12

Applicant/Owner: TCC Sampling Point: W3-WL4-WP1

Investigator(s): SB/LT Section, Township, Range: Urbush 3

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

Slope (%): 2% Lat: 638572 Long: 5877728 Datum: NAD27

Soil Map Unit Name: Meta-innsteone quartzite Wetland Type: Fen

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 ____

If yes, optional Wetland Site ID: W3-WL4

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. B. Fir	5%	✓	FAC
2. Black Spruce	10%	✓	FACW
3.			
4.			
5.			
	15%	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5m)			
1. Solid discolor	10%	✓	FAC
2. Dwarf Birch	3%		OBL
3.			
4.			
5.			
	13%	= Total Cover	
Herb Stratum (Plot size: 1m)			
1. Carex magellanicum	15%	✓	OBL
2. Carex interior echinata	15%	✓	OBL
3. Sweet Gale	5%		FACW
4. Fireweed	5%		FAC
5. Bilberry	5%		UPL
6. Viola sp	2%		-
7. Arctic cotton	5%		FACW
8.			
9.			
10.			
	52	= 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: W3-WL4-UP1

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
O 0-18							Organic	
A 18-20	5Y 3/1	100					SiHy sand	
B 20-	10YR 3/1	80%	2.5YR 3/3	20%			SiHy sand	

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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): 0cm

Water Table Present? Yes ✓ No ___ Depth (inches): 0cm

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

GPS points -275

WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: FEC – wabush 3 Municipality/County: Lab City Sampling Date: Aug. 14/12

Applicant/Owner: FEC Sampling Point: WB3-WL4-UP1

Investigator(s): S. Busby / C. Tucker Section, Township, Range: wabush 3

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

Slope (%): 10% Lat: 6385 16 Long: 5872732 Datum: NAD 27

Soil Map Unit Name: Meta-ironstone quartzite Wetland Type: Riparian Fen upland

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 ✓

If yes, optional Wetland Site ID: ____

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Balsam fir	15%	✓	FAC
2. Black Spruce	10%	✓	FACW
3.			
4.			
5.			
	25% = Total Cover		
Sapling/Shrub Stratum (Plot size: 5m)			
1. Dwarf Birch	10%	✓	OBL
2. Salix discolor	5%	✓	FAC
3.			
4.			
5.			
	15% = Total Cover		
Herb Stratum (Plot size: 1m)			
1. Fireweed	15%	✓	FAC
2. Arctic Cotton Grass	2%	✓	FACW
3. Bunch berry	15%	✓	FAC
4. Star flower	5%		FAC
5. Dewberry	5%		FACW
6. Equisetum Sylvaticum	2%		FAC
7. Large Leaved Goldenrod	2%		FACU
8.			
9.			
10.			
	64% = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (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.)

Many of these species occur in both the wetland and upland habitat in Labrador.

SOIL

Sampling Point: W3-WL4-UP1

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

Depth (inches)	Horizon	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8	O		100					Organic Humus	
8-15	A	2.5Y 4/1	100					Sandy silt	
15-36	B	7.5YR 4/4	100					Sand	

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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:

Remarks:

Freshwater Wetland Data Sheet: W3-WL5

Date: Aug 15/12
Investigator(s): Scott Burley/ Cheng/Tucker
Weather: Rain
Topographic Sheet: 23B/14
Aerial Photo Number: NA

Wetland Atlas Number : NA
GIS Map / Stand No. : NA
Wetland Form[1]:: Riparian fen
Wetland size: 4.94 ha - Delineated portion
Associated Watercourse: unnamed stream

Wetland Type:
1.Aquatic bed/unconsolidated bottom (AB) ____
2.Bog(BO) ____
3.Fen (FE) X
4.Emergent wetland (EW) ____
5.Shrub wetland (SB) X
6.Forested wetland (FW) ____

Wetland Class:
1.Open water ___
2.Deep marsh ____
3.Shallow marsh _____
4.Seasonally flooded flats ____
5.Meadow X
6.Shrub swamp X
7.Wooded swamp ____
8.Bog ____

Wetland Subclass:
1.Vegetated open water X
2.Non-vegetated OW X
3.Floating leaved OW ___
4.Rooted floating leaved OW ___
5.Dead woody OW ____
6.Vegetated deep marsh ____
7.Non-vegetated DM ____
8.Dead woody DM ____
9.Sub-shrub DM ____
10.Floating leaved DM ____
11.Rooted floating leaved DM ____
12.Robust DM ____
13.Narrow-leaved DM ____
14.Broad-leaved DM ____
15.Dead woody shallow marsh ____
16.Robust SM _____
17.Narrow leaved SM _____
18.Broad leaved SM ____
19.Floating leaved SM ____
20.Rooted floating leaved SM ____
21.Non-vegetated SM ____
22.Emergent seasonally flooded flats ____
23.Shrubby SFF ____
24.Grazed meadow ____
25.Ungrazed M ____
26.Sedge M X
27.Sapling shrub swamp X
28.Bushy SS X
29.Compact SS _____
30.Low sparse SS ____
31.Deciduous wooded swamp ____
32.Evergreen WS ____
33.Wooded bog ____
34.Shrubby B _____
35.Open B _____

Water Regime Indicator:
1.Permanently flooded ___
2.Saturated X
3.Seasonally flooded _____

Water Depth:
1.0-5 cm X
2.5-20 cm _____
3.20-50 cm ____
4.50-100 cm ____
5.>100 cm X lake

Note: 1. Canadian Wetland Classification System (2nd Edition)

W3-WL5

Impounded Wetland Type:
1.Beaver Pond _____
2.Man-made Impoundment ____
3.Ducks Unlimited Impoundment ____
4. None of the above X

Percent Vegetation Cover:
1.> 95% _____
2.76-95% in peripheral band X
3.76-96% in patches ___
4.26-75% in peripheral band ____
5.26-75% in patches ____
6. 5-25% in peripheral band ____
7. 5-25% in patches ____
8.< 5% ____

Wetland Site:
1.Lacustrine X
2.Riverine X
3.Palustrine ____
4.Isolated _____
5.Deltaic ___

Vegetation Types (%):
1.Deciduous trees -
2.Coniferous trees 5% - Black Spruce, Balsam fir
3.Dead trees 1%
4.Tall shrubs - 20% - Salix, Alder
5.Low shrubs - 15% - Dwarf birch
6.Dead shrubs -
7.Herbs - 15%
8.Mosses - 95% Sphagnum
9.Narrow-leaved emergents - 30% - Carex, Juncus
10.Broad-leaved emergents -
11.Robust emergents -
12.Free-floating plants -
13.Floating plants (rooted) -
14.Submerged plants -
15. Other -

Interspersion: 1.Minimal ___ 2.Low X 3.Medium ___ 4.High ____

Conductivity: N/A
pH: N/A
Alkalinity: N/A

Hydrological Classification:
1.Surface water depression _____
2.Ground water depression _____
3.Surface water slope X
4.Ground water slope ____

Inlets/Outlets/water bodies:
stream flowing through wetlands connecting the two lakes

Wildlife: (Observation/Signs/Reports)
Speckled Trout

W3-WL5

Adjacent Wildlife habitat (%):

1.Salt marsh ____
2.Forest 95
3.Dykelands ____
4.Mudflats ____
5.Beach ____
6.River ____
7. Other 5

Description: Disturbed regenerating area @ South

Surrounding Land Use %:

1 Agriculture ____
2.Forestry ____
3 Recreation ____
4.Industrial ____
5.Urban development ____
6.Transportation ____
7.Residential ____
8.Waste Disposal ____
9.Scientific Research ____
10.Trapping ____
11.Education ____
12.Seasonal resident ____

Description:

Disturbance: 1.Low ____ 2.Moderate X 3.High ____

Description: ATV tracks and drill tracks throughout

Roads and/or tracks:

1.Private road adjacent X
2.DOT road adjacent ____
3.Private road within ____
4.DOT road within ____
5.Vehicle tracks ____
6.Other ____

Description:

Existing Uses of Wetlands:

1.Economic use (e.g. farming) ____
2.Recreational activities ____
3.Aesthetics ____
4.Education & public awareness ____
5. None evident X

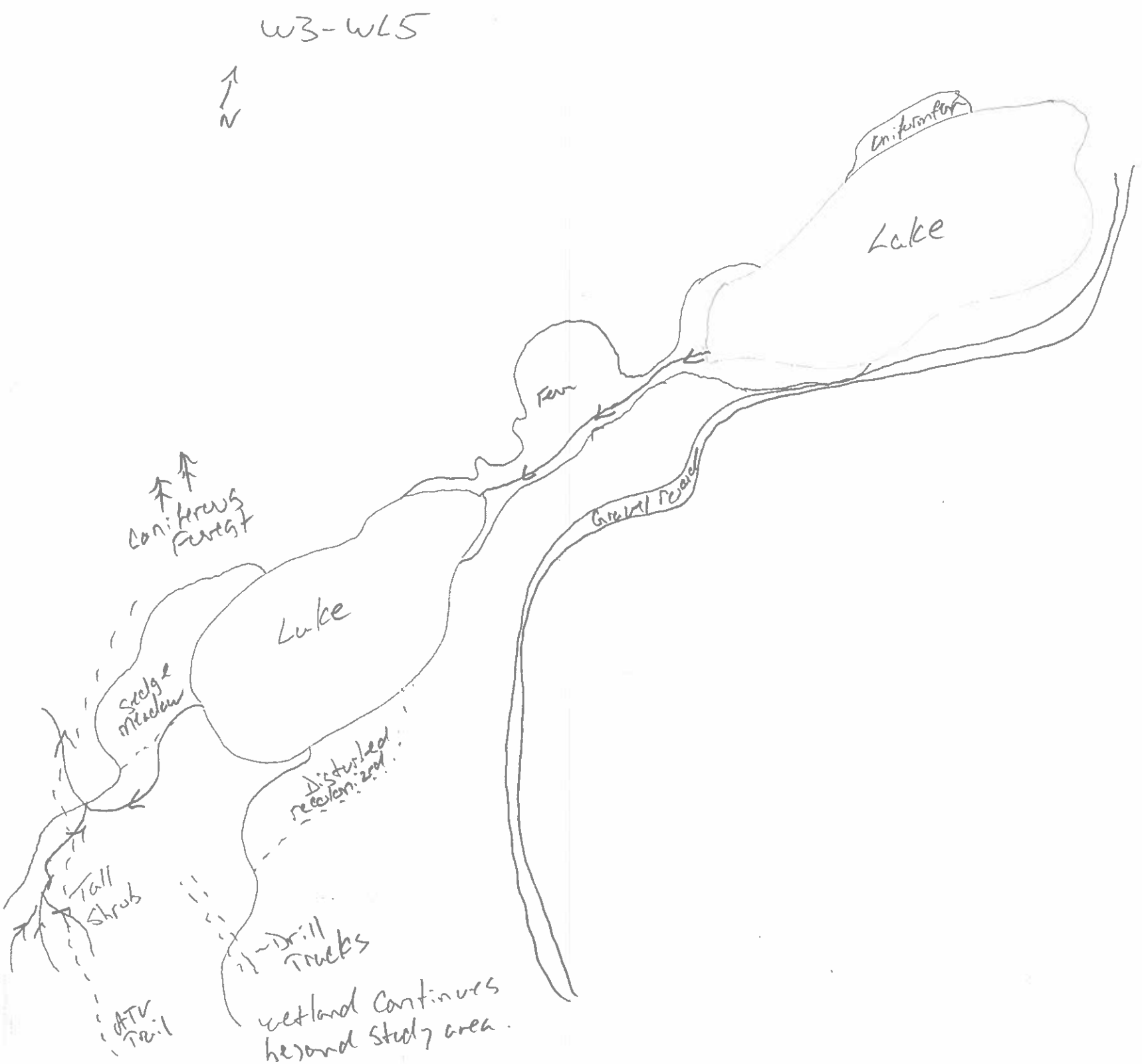
Potential Threats:

Special Features:

1.Rare wetland type ____
2.Rare animal or plant species X
3.Habitat of rare species X
4.Nesting site for colonial water birds ____
5.Migration stop-over site ____
6. None evident ____

Description: Potential Habitat; Salix hebbiana in WL

Notes:


W3-WL5
N
Coniferous forest
Lake
Sedge meadow
Disturbed reclaimed
Tall Shrub
ATV Trail
Drill Trucks
wetland continues beyond study area.
Fen
Gravel road
Lake
Coniferous

WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: TCC - Wabush 3 Municipality/County: Lab City Sampling Date: Aug 15/12

Applicant/Owner: TCC Sampling Point: W3-WL5-WP1

Investigator(s): SB/CT Section, Township, Range: Wabush 3

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

Slope (%): 2% ~~Lat:~~ 6370 34 ~~Long:~~ 567112 6 Datum: NAD 27

Soil Map Unit Name: Meta-ironstone, quartzite Wetland Type: Shrub Fen

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: W3-WL5
Wetland Hydrology Present?	Yes ✓	No _____	

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Balsam fir	5	✓	FAC
2. Black spruce	5	✓	FACW
3.			
4.			
5.			
	10%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5m)			
1. Salix pisicalor	15	✓	FAC
2. Dwarf Birch	10	✓	OBL
3.			
4.			
5.			
	25%	= Total Cover	

Herb Stratum (Plot size: 1m)			
1. Rhododendron Canadense Burnet	15	✓	FACW
2. Carex magellanica	2%		OBL
3. Juncus effusus f. litoralis	25	✓	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	42%	= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (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: W3-WLS-up

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	0-40+						organic	

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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): 5cm

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: Ice-Wetland 3 Municipality/County: Lab City Sampling Date: Aug 15/12

Applicant/Owner: ICC Sampling Point: W3-WL5-UP1

Investigator(s): SB/CT Section, Township, Range: Wetland 3

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

Slope (%): 2 Lat: C37061' Long: 587128 Datum: NAD 27

Soil Map Unit Name: Meta-ironstone, quartzite Wetland Type: Upland

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 ✓

If yes, optional Wetland Site ID: ____

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. B. Fir	30	✓	FAC
2. Black Spruce	15	✓	FACW
3.			
4.			
5.			
	45%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5m)			
1. Dwarf Birch	5	✓	OBL
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 1m)			
1. ~~Potentilla~~ Canada Bunchberry	2		FACW
2. Bunchberry	5	✓	FAC
3. Starflower	1		FAC
4. Lowbush Blueberry	5	✓	FACW
5. Bilberry	5	✓	~~FACW~~ UPL
6.			
7.			
8.			
9.			
10.			
	60%	= Total Cover	

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (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.)

Many species occur in both upland + wetland habitat in Labrador

SOIL

Sampling Point: W3-WLS-UA

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
O 0-5							Organic	
A 5-8	2.5Y 5/1	100					Silt Loam	
B 8-25	10YR 3/3	100					Silt Loam	
C 26	2.5Y 3/3	100					Silt Loam	

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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): 26 cm

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:

Remarks:

Freshwater Wetland Data Sheet: W3-WL6

Date: Aug. 15/12
Investigator(s): Scott Burley/ Cheryl Tucker
Weather: Cloud/Sun/Rain
Topographic Sheet: 23B/14
Aerial Photo Number: NA

Wetland Atlas Number : NA
GIS Map / Stand No. : NA
Wetland Form[1]:: Sloped Fen
Wetland size: 0.41 ha
Associated Watercourse: Unnamed Stream

Wetland Type:
1.Aquatic bed/unconsolidated bottom (AB) ____
2.Bog(BO) ____
3.Fen (FE) X
4.Emergent wetland (EW) ____
5.Shrub wetland (SB) ____
6.Forested wetland (FW) ____

Wetland Class:
1.Open water ___
2.Deep marsh ____
3.Shallow marsh ____
4.Seasonally flooded flats ____
5.Meadow X
6.Shrub swamp ____
7.Wooded swamp ____
8.Bog ____

Wetland Subclass:
1.Vegetated open water ___
2.Non-vegetated OW ___
3.Floating leaved OW ___
4.Rooted floating leaved OW ___
5.Dead woody OW ____
6.Vegetated deep marsh ____
7.Non-vegetated DM ____
8.Dead woody DM ____
9.Sub-shrub DM ____
10.Floating leaved DM ____
11.Rooted floating leaved DM ____
12.Robust DM ____
13.Narrow-leaved DM ____
14.Broad-leaved DM ____
15.Dead woody shallow marsh ____
16.Robust SM ____
17.Narrow leaved SM ____
18.Broad leaved SM ____
19.Floating leaved SM ____
20.Rooted floating leaved SM ____
21.Non-vegetated SM ____
22.Emergent seasonally flooded flats ____
23.Shrubby SFF X
24.Grazed meadow ____
25.Ungrazed M ____
26.Sedge M X
27.Sapling shrub swamp ____
28.Bushy SS ____
29.Compact SS ____
30.Low sparse SS ____
31.Deciduous wooded swamp ____
32.Evergreen WS ____
33.Wooded bog ____
34.Shrubby B ____
35.Open B ____

Water Regime Indicator:
1.Permanently flooded ___
2.Saturated X
3.Seasonally flooded ____

Water Depth:
1.0-5 cm X
2.5-20 cm ____
3.20-50 cm ____
4.50-100 cm ____
5.>100 cm ____

Note: 1. Canadian Wetland Classification System (2nd Edition)

W3-WL6

Impounded Wetland Type:
1.Beaver Pond _____
2.Man-made Impoundment ____
3.Ducks Unlimited Impoundment ____
4. None of the above X

Percent Vegetation Cover:
1.> 95% X
2.76-95% in peripheral band ___
3.76-96% in patches ___
4.26-75% in peripheral band ____
5.26-75% in patches ____
6. 5-25% in peripheral band ____
7. 5-25% in patches ____
8.< 5% ____

Wetland Site:
1.Lacustrine ____
2.Riverine _____
3.Palustrine X
4.Isolated _____
5.Deltaic ___

Vegetation Types (%):
1.Deciduous trees –
2.Coniferous trees 15% - Balsam fir, Black Spruce
3.Dead trees 10
4.Tall shrubs 5% - Salix, Dwarf birch
5.Low shrubs 5% - Dwarf birch
6.Dead shrubs –
7.Herbs 10% - Potentilla, large orchid
8.Mosses 95% - Sphagnum
9.Narrow-leaved emergents 20% - Beaked, deschampsia, Juncus
10.Broad-leaved emergents –
11.Robust emergents –
12.Free-floating plants –
13.Floating plants (rooted) –
14.Submerged plants –
15. Other –

Interspersion: 1.Minimal X 2.Low _____ 3.Medium ___ 4.High ____

Conductivity: N/A
pH: N/A
Alkalinity: N/A

Hydrological Classification:
1.Surface water depression ____
2.Ground water depression ____
3.Surface water slope X
4.Ground water slope ____

Inlets/Outlets/water bodies:
Stream running through from west to east

Wildlife: (Observation/Signs/Reports)

W3-WL6

Adjacent Wildlife habitat (%):

1.Salt marsh ____
2.Forest Extn
3.Dykelands ____
4.Mudflats ____
5.Beach ____
6.River ____
7. Other 590

Description: Burrow

Surrounding Land Use %:

1 Agriculture ____
2.Forestry ____
3 Recreation ____
4.Industrial X
5.Urban development ____
6.Transportation ____
7.Residential ____
8.Waste Disposal ____
9.Scientific Research ____
10.Trapping ____
11.Education ____
12.Seasonal resident ____

Description: Tree mine

Disturbance: 1.Low X 2.Moderate ____ 3.High ____

Description: infilling of wetland along north side

Roads and/or tracks:

1.Private road adjacent X
2.DOT road adjacent ____
3.Private road within ____
4.DOT road within ____
5.Vehicle tracks ____
6.Other ____

Description: Dirt Road @ north side

Existing Uses of Wetlands:

1.Economic use (e.g. farming) ____
2.Recreational activities ____
3.Aesthetics ____
4.Education & public awareness ____
5. None evident X

Potential Threats:

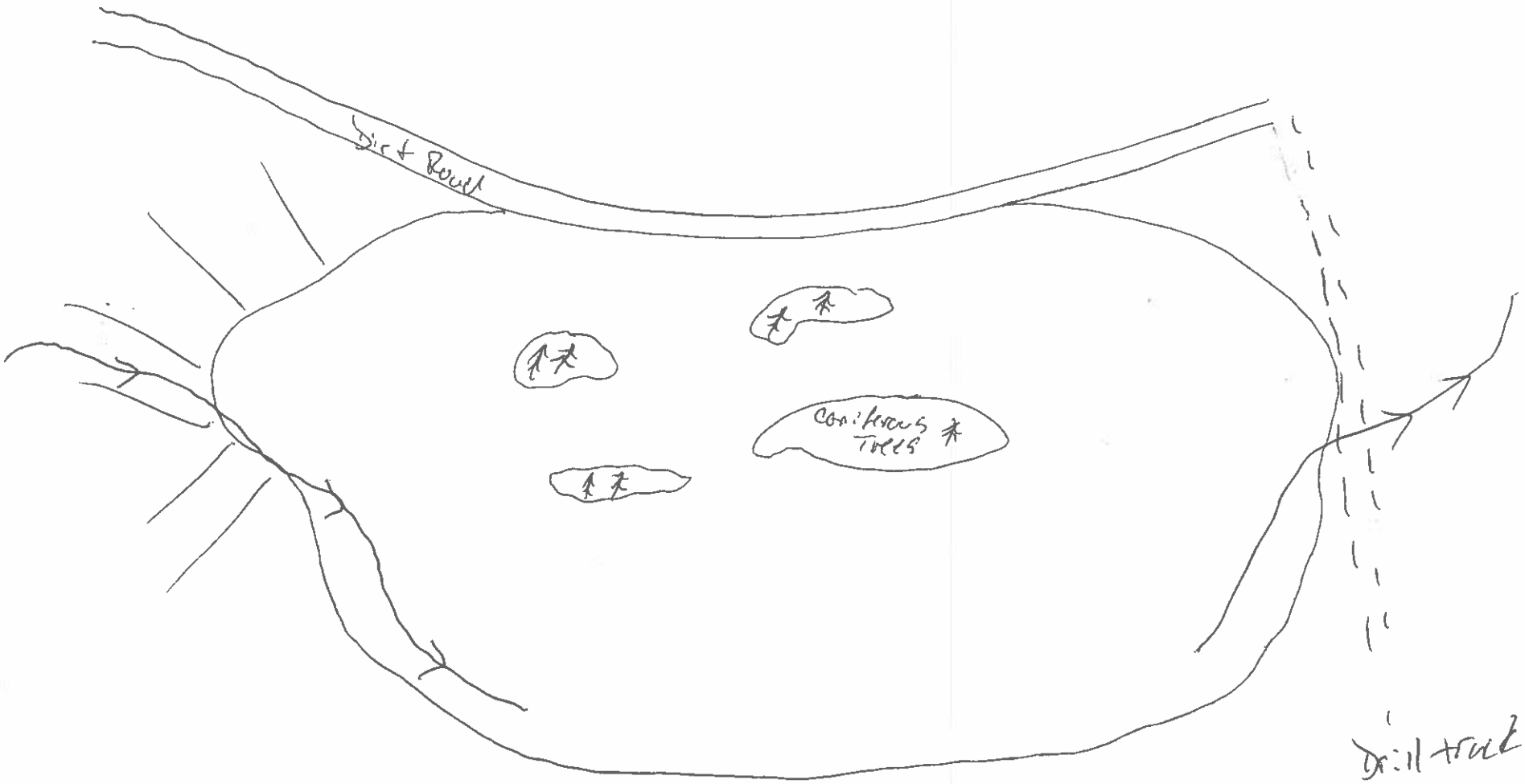
Special Features:

1.Rare wetland type ____
2.Rare animal or plant species X
3.Habitat of rare species X
4.Nesting site for colonial water birds ____
5.Migration stop-over site ____
6. None evident ____

Description: Salix bebbiana present

Notes:

W3 - WL6



WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: FCC - Wabush 3 Municipality/County: Lac City Sampling Date: Aug. 15/12

Applicant/Owner: FCC Sampling Point: W3-W26-WP1

Investigator(s): SB/CT Section, Township, Range: Wabush 3

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

Slope (%): 2% Lat: 6380101 Long: 5387905 Datum: NAD 27

Soil Map Unit Name: Meta-ironstone, quartzite Wetland Type: Fen

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: W3-W26

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Black Spruce	50%	✓	FACW
2. Balsam fir	50%	✓	FAC
3.			
4.			
5.			
	100% = Total Cover		

Sapling/Shrub Stratum (Plot size: 5m)			
1. Dwarf birch	15%	✓	OBL
2.			
3.			
4.			
5.			
	15% = Total Cover		

Herb Stratum (Plot size: 1m) Rif: forms			
1. Juncus effusus (hot clump)	15%	✓	FACW
2. Carex paupercula	15%	✓	OBL
3. Eriophorum spissum	2%		FACW
4. Rubus chamaemorus			
5. Coptis trifolia	2%		FAC
6.			
7.			
8.			
9.			
10.			
	34% = 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.)

Wetland Delineation GPS Points: 079-109

SOIL

Sampling Point: W3-WL6-UP

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
0-40+							Organic	

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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): 2cm

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: JCC - Wetland 3 Municipality/County: Halifax Sampling Date: Aug. 15/12

Applicant/Owner: JCC Sampling Point: WP3-W6-UP1

Investigator(s): SB/CT Section, Township, Range: Wetland 3

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

Slope (%): 3% Lat: 638110 Long: 5871914 Datum: NAD 27

Soil Map Unit Name: Meta-ironstone, quartzite Wetland Type: Upland

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 ✓

If yes, optional Wetland Site ID: ____

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Balsam fir	20%	✓	FAC
2. White spruce	5%		FAC
3. Black spruce	5%		FACW
4.			
5.			
	30%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5m)			
1. Paper birch	5%	✓	OBL
2. Balsam fir	2%		FAC
3. White spruce	2%		FAC
4.			
5.			
	9%	= Total Cover	

Herb Stratum (Plot size: 1m)			
1. Clintonia borealis	2%		FAC
2. Bunchberry	5%	✓	FAC
3. Oxalis hispidula	2%		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	9%	= Total Cover	

Woody Vine Stratum (Plot size: —)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Many species present occur in both upland & wetland habitat.

SOIL

Sampling Point: W3-WL6-UP

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
O 0-10		100					Organic	
A 10-15	5Y 3/1	100					Silty sand	
B 15+	10YR 3/3	~~100~~ 98%	2.5YR 3/4	5%			Silty sand	

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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:

Remarks:

Freshwater Wetland Data Sheet: W3-W17

Date: Aug. 15/12
Investigator(s): Scott Burley/ Cheryl Tucker
Weather: Sun/Cloud
Topographic Sheet: 23B/14
Aerial Photo Number: N/A

Wetland Atlas Number : NA
GIS Map / Stand No. : NA
Wetland Form[1]:: Fen
Wetland size: 1.78 ha
Associated Watercourse: NA

Wetland Type:
1.Aquatic bed/unconsolidated bottom (AB) ____
2.Bog(BO) ____
3.Fen (FE) X
4.Emergent wetland (EW) ____
5.Shrub wetland (SB) ____
6.Forested wetland (FW) ____

Wetland Class:
1.Open water ___
2.Deep marsh ____
3.Shallow marsh _____
4.Seasonally flooded flats ____
5.Meadow X
6.Shrub swamp _____
7.Wooded swamp ____
8.Bog ____

Wetland Subclass:
1.Vegetated open water X
2.Non-vegetated OW ___
3.Floating leaved OW ___
4.Rooted floating leaved OW ___
5.Dead woody OW ____
6.Vegetated deep marsh ____
7.Non-vegetated DM ____
8.Dead woody DM ____
9.Sub-shrub DM ____
10.Floating leaved DM ____
11.Rooted floating leaved DM ____
12.Robust DM ____
13.Narrow-leaved DM ____
14.Broad-leaved DM ____
15.Dead woody shallow marsh ____
16.Robust SM _____
17.Narrow leaved SM _____
18.Broad leaved SM ____
19.Floating leaved SM ____
20.Rooted floating leaved SM ____
21.Non-vegetated SM ____
22.Emergent seasonally flooded flats ____
23.Shrubby SFF X
24.Grazed meadow ____
25.Ungrazed M X
26.Sedge M X
27.Sapling shrub swamp ____
28.Bushy SS ____
29.Compact SS _____
30.Low sparse SS ____
31.Deciduous wooded swamp ____
32.Evergreen WS ____
33.Wooded bog _____
34.Shrubby B _____
35.Open B _____

Water Regime Indicator:
1.Permanently flooded ___
2.Saturated X
3.Seasonally flooded _____

Water Depth:
1.0-5 cm X
2.5-20 cm _____
3.20-50 cm ____
4.50-100 cm ____
5.>100 cm _____

Note: 1. Canadian Wetland Classification System (2nd Edition)

W3-4L7

Impounded Wetland Type:
1.Beaver Pond _____
2.Man-made Impoundment ____
3.Ducks Unlimited Impoundment ____
4. None of the above X

Percent Vegetation Cover:
1.> 95% X
2.76-95% in peripheral band ___
3.76-96% in patches ___
4.26-75% in peripheral band ____
5.26-75% in patches ____
6. 5-25% in peripheral band ____
7. 5-25% in patches ____
8.< 5% ____

Wetland Site:
1.Lacustrine ____
2.Riverine _____
3.Palustrine ____
4.Isolated _____
5.Deltaic ___

Vegetation Types (%):
1.Deciduous trees –
2.Coniferous trees –
3.Dead trees –
4.Tall shrubs 5% - Salix
5.Low shrubs 2% - Salix
6.Dead shrubs –
7.Herbs 15 Marsh Cinquefoil
8.Mosses - 50 % Sphagnum
9.Narrow-leaved emergents 85% Carex, Calamagrostis, Juncus
10.Broad-leaved emergents –
11.Robust emergents –
12.Free-floating plants –
13.Floating plants (rooted) –
14.Submerged plants –
15. Other

Interspersion: 1.Minimal X 2.Low _____ 3.Medium ___ 4.High ____

Conductivity: N/A
pH: N/A
Alkalinity: N/A

Hydrological Classification:
1.Surface water depression X
2.Ground water depression _____
3.Surface water slope _____
4.Ground water slope ____

Inlets/Outlets/water bodies:
outlet @ S/E corner + Inlet @ South west corner and north end

Wildlife: (Observation/Signs/Reports)

W3-WL7

Adjacent Wildlife habitat (%):

1.Salt marsh ____
2.Forest 95%
3.Dykelands ____
4.Mudflats ____
5.Beach ____
6.River ____
7. Other ____

Description:

Surrounding Land Use %:

1 Agriculture ____
2.Forestry ____
3 Recreation ____
4.Industrial ✓
5.Urban development ____
6.Transportation 5%
7.Residential ____
8.Waste Disposal ____
9.Scientific Research ____
10.Trapping ____
11.Education ____
12.Seasonal resident ____

Description: Dirt Road along east side

Disturbance: 1.Low ✓ 2.Moderate ____ 3.High ____

Description:

Roads and/or tracks:

1.Private road adjacent ✓
2.DOT road adjacent ____
3.Private road within ____
4.DOT road within ____
5.Vehicle tracks ____
6.Other ____

Description:

Existing Uses of Wetlands:

1.Economic use (e.g. farming) ____
2.Recreational activities ____
3.Aesthetics ____
4.Education & public awareness ____
5. None evident ✓

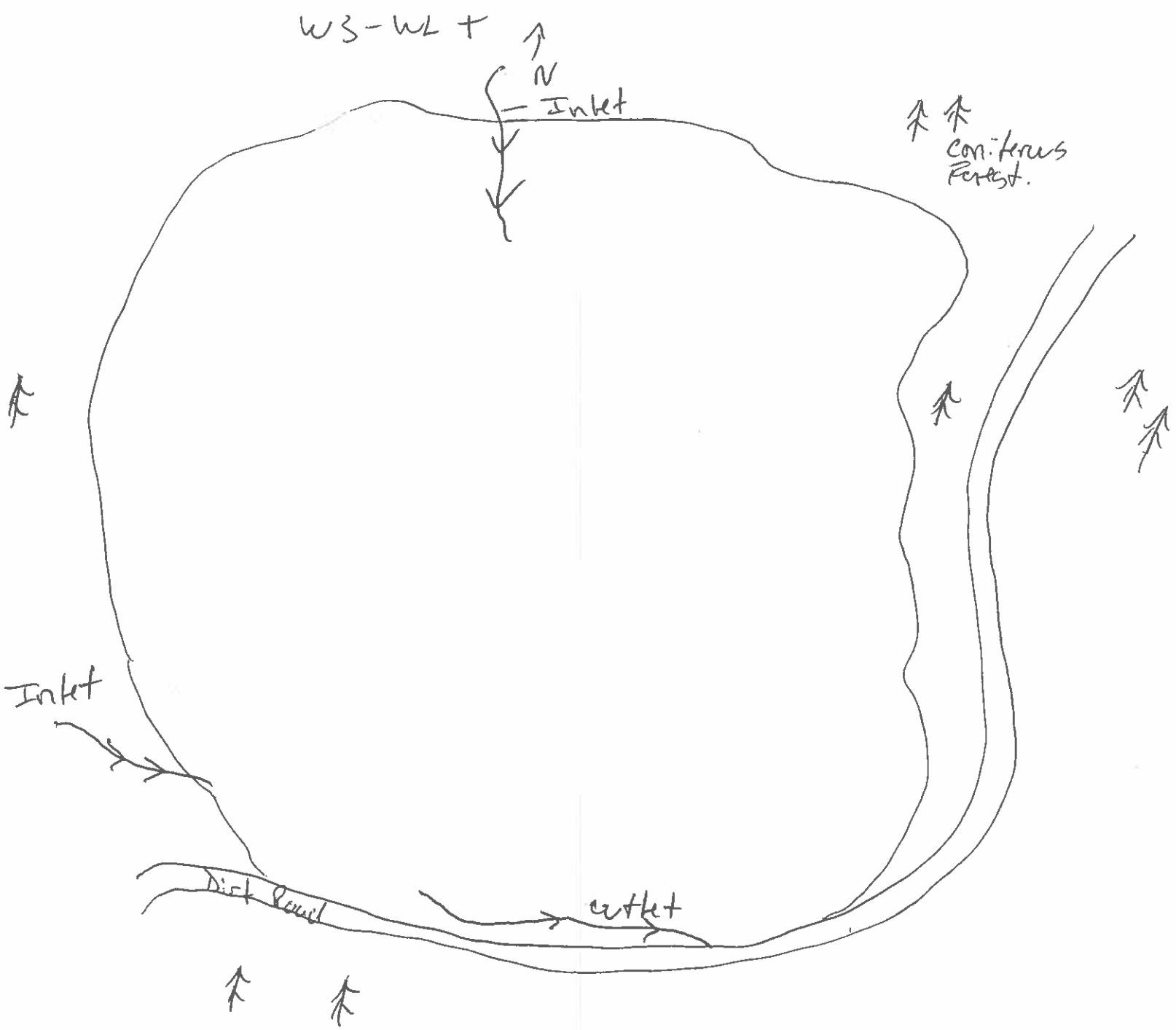
Potential Threats:

Special Features:

1.Rare wetland type ____
2.Rare animal or plant species ✓
3.Habitat of rare species ✓
4.Nesting site for colonial water birds ____
5.Migration stop-over site ____
6. None evident ____

Description: Salix hebbiana present

Notes:


WS-WL +
N
Inlet
Coniferous Forest.
Inlet
Dirt Road
outlet

WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: TOC-Wabush 3 Municipality/County: Lab City Sampling Date: Aug. 15/12

Applicant/Owner: TCC Sampling Point: W3-WL7-WP1

Investigator(s): SB/CT Section, Township, Range: Wabush 3

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

Slope (%): 1% Lat: 6537995 Long: 5872160 Datum: NAD27

Soil Map Unit Name: Meta-ironstone quartzite Wetland Type: Fen

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: W3-WL7
Wetland Hydrology Present?	Yes ✓ No ____	

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Balsam fir	2%		FAC
2. Black spruce	2%		FACW
3.			
4.			
5.			
	4%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5m)			
1. Salix discolor	5%	✓	FAC
2.			
3.			
4.			
5.			
	5%	= Total Cover	

Herb Stratum (Plot size: 1m)			
1. Arctic coltsfoot	20%	✓	FACW
2. Equisetum Sylvaticum	15%	✓	FAC
3. Coptis trifolia	5%		FAC
4. Vaccinium angustifolium	5%		FAC
5.			
6.			
7.			
8.			
9.			
10.			
	45	= Total Cover	

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Delineation GPS Points: 110 – 177

SOIL

Sampling Point: W3-WL7-WP1

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
O,H 0-35cm							organic	
A 35-40cm	5Y4/1	100					Sandy Silt	
B 40+	10YR 3/2	100					Loamy Sand	

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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): 5cm

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

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – NOVA SCOTIA

Project/Site: IOC - Wabush 3 Municipality/County: Lab City Sampling Date: Aug. 15/12

Applicant/Owner: IOC Sampling Point: W3-WL7-UP1

Investigator(s): SB/CT Section, Township, Range: Wabush 3

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

Slope (%): 10% Lat: 637994 Long: 5872157 Datum: NAD 27

Soil Map Unit Name: Melta - ironstone quartzite Wetland Type: upland

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 ✓

If yes, optional Wetland Site ID: ____

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Balsam Fir	25%	✓	FAC
2. White Spruce	5%		FAC
3. Black Spruce	5%		FACW
4.			
5.			
	35%	= Total Cover	

Sapling/Shrub Stratum (Plot size: 5m)			
1. Balsam Fir	10%	✓	FAC
2. Salix discolor	2%		FAC
3.			
4.			
5.			
	12%	= Total Cover	

Herb Stratum (Plot size: 1m)			
1. Arctic Cottongrass	5%		FACW
2. Bunch berry	20%	✓	FAC
3. Twin flower	5%		FAC
4. Equisetum Sylvaticum	2%		FAC
5. Rhodanthemum			
6. Coptis trifolia	2%		FAC
7.			
8.			
9.			
10.			
	34%	= Total Cover	

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 2 (A)

Total Number of Dominant Species Across All Strata: 3 2 (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.)

Many of these species occur in both upland + wetland habitats in Labrador

SOIL

Sampling Point: WS-WT-UP1

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

Depth (inches) cm	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
O 0-15		100					Organic	
A 15-35	2.5Y4/3	100					Silty sand	

[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)
- ___ Depleted Dark Surface (F7)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Polyvalue Below Surface (S8)
- ___ Thin Dark Surface (S9)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (TF2)

Indicators for Problematic Hydric Soils[3]:

- ___ Sandy Gleyed Matrix (S4)
- ___ Coast Prairie Redox (A16)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Iron-Manganese Masses (F12)
- ___ 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:

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): 35 cm

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:

Remarks:

APPENDIX B

GPS WAYPOINTS

ID	Easting	Northing
Wabush 3		
	W3-WL1	
W3-WL1	637903	5871297
W3-WL1	637891	5871293
W3-WL1	637881	5871296
W3-WL1	637875	5871314
W3-WL1	637884	5871330
W3-WL1	637885	5871351
W3-WL1	637890	5871362
W3-WL1	637902	5871368
W3-WL1	637917	5871371
W3-WL1	637919	5871385
W3-WL1	637927	5871389
W3-WL1	637939	5871389
W3-WL1	637947	5871388
W3-WL1	637949	5871379
W3-WL1	637943	5871362
W3-WL1	637934	5871350
W3-WL1	637918	5871335
W3-WL1	637909	5871314
	W3-WL2	
W3-WL2	638130	5871472
W3-WL2	638135	5871471
W3-WL2	638135	5871471
W3-WL2	638142	5871480
W3-WL2	638148	5871493
W3-WL2	638170	5871508
W3-WL2	638184	5871511
W3-WL2	638188	5871499
W3-WL2	638188	5871488
W3-WL2	638192	5871477
W3-WL2	638190	5871464
W3-WL2	638186	5871456
W3-WL2	638183	5871446
W3-WL2	638178	5871445
W3-WL2	638171	5871444
W3-WL2	638167	5871442
W3-WL2	638159	5871435
W3-WL2	638151	5871430
W3-WL2	638144	5871432
W3-WL2	638136	5871428
W3-WL2	638129	5871428
W3-WL2	638120	5871416
W3-WL2	638115	5871414
W3-WL2	638108	5871413
W3-WL2	638111	5871417
W3-WL2	638112	5871424
W3-WL2	638117	5871438
W3-WL2	638121	5871447
W3-WL2	638124	5871459
	W3-WL3	
W3-WL3	637630	5871607

ID	Easting	Northing
W3-WL3		
W3-WL3	637625	5871605
W3-WL3	637619	5871601
W3-WL3	637615	5871598
W3-WL3	637611	5871592
W3-WL3	637606	5871591
W3-WL3	637601	5871587
W3-WL3	637594	5871589
W3-WL3	637589	5871589
W3-WL3	637583	5871584
W3-WL3	637578	5871576
W3-WL3	637573	5871571
W3-WL3	637567	5871560
W3-WL3	637564	5871553
W3-WL3	637559	5871547
W3-WL3	637557	5871542
W3-WL3	637553	5871535
W3-WL3	637542	5871529
W3-WL3	637537	5871526
W3-WL3	637536	5871520
W3-WL3	637536	5871514
W3-WL3	637532	5871509
W3-WL3	637535	5871502
W3-WL3	637533	5871497
W3-WL3	637528	5871490
W3-WL3	637520	5871495
W3-WL3	637515	5871499
W3-WL3	637505	5871503
W3-WL3	637499	5871509
W3-WL3	637497	5871513
W3-WL3	637491	5871513
W3-WL3	637484	5871514
W3-WL3	637484	5871524
W3-WL3	637479	5871533
W3-WL3	637476	5871532
W3-WL3	637482	5871540
W3-WL3	637483	5871540
W3-WL3	637487	5871547
W3-WL3	637490	5871554
W3-WL3	637491	5871558
W3-WL3	637491	5871563
W3-WL3	637495	5871568
W3-WL3	637498	5871577
W3-WL3	637496	5871584
W3-WL3	637498	5871589
W3-WL3	637506	5871589
W3-WL3	637507	5871598
W3-WL3	637512	5871605
W3-WL3	637514	5871611
W3-WL3	637514	5871616
W3-WL3	637500	5871627
W3-WL3	637498	5871628
W3-WL3	637491	5871637
W3-WL3	637490	5871645

ID	Easting	Northing
W3-WL3		
W3-WL3	637498	5871655
W3-WL3	637502	5871652
W3-WL3	637507	5871658
W3-WL3	637519	5871657
W3-WL3	637545	5871650
W3-WL3	637548	5871647
W3-WL3	637553	5871659
W3-WL3	637556	5871668
W3-WL3	637563	5871674
W3-WL3	637566	5871683
W3-WL3	637567	5871687
W3-WL3	637570	5871695
W3-WL3	637561	5871701
W3-WL3	637558	5871703
W3-WL3	637552	5871713
W3-WL3	637548	5871720
W3-WL3	637549	5871726
W3-WL3	637541	5871730
W3-WL3	637535	5871733
W3-WL3	637532	5871734
W3-WL3	637526	5871732
W3-WL3	637523	5871736
W3-WL3	637510	5871733
W3-WL3	637507	5871730
W3-WL3	637505	5871721
W3-WL3	637504	5871717
W3-WL3	637503	5871716
W3-WL3	637499	5871711
W3-WL3	637492	5871710
W3-WL3	637484	5871715
W3-WL3	637481	5871719
W3-WL3	637478	5871710
W3-WL3	637474	5871705
W3-WL3	637471	5871703
W3-WL3	637463	5871699
W3-WL3	637460	5871706
W3-WL3	637460	5871712
W3-WL3	637464	5871714
W3-WL3	637464	5871718
W3-WL3	637468	5871730
W3-WL3	637467	5871740
W3-WL3	637472	5871750
W3-WL3	637473	5871764
W3-WL3	637475	5871772
W3-WL3	637478	5871780
W3-WL3	637476	5871787
W3-WL3	637470	5871793
W3-WL3	637470	5871797
W3-WL3	637472	5871808
W3-WL3	637467	5871817
W3-WL3	637468	5871822
W3-WL3	637466	5871830
W3-WL3	637467	5871839

ID	Easting	Northing
W3-WL3		
W3-WL3	637471	5871844
W3-WL3	637475	5871859
W3-WL3	637484	5871869
W3-WL3	637489	5871875
W3-WL3	637493	5871880
W3-WL3	637497	5871886
W3-WL3	637499	5871892
W3-WL3	637504	5871891
W3-WL3	637509	5871885
W3-WL3	637510	5871881
W3-WL3	637516	5871876
W3-WL3	637516	5871866
W3-WL3	637523	5871866
W3-WL3	637529	5871869
W3-WL3	637531	5871875
W3-WL3	637535	5871878
W3-WL3	637540	5871883
W3-WL3	637542	5871885
W3-WL3	637546	5871885
W3-WL3	637549	5871881
W3-WL3	637555	5871875
W3-WL3	637563	5871872
W3-WL3	637569	5871869
W3-WL3	637570	5871861
W3-WL3	637573	5871855
W3-WL3	637575	5871844
W3-WL3	637577	5871838
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W3-WL3	637608	5871816
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W3-WL3	637679	5871768
W3-WL3	637701	5871757
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W3-WL3	637699	5871726
W3-WL3	637698	5871716
W3-WL3	637697	5871710

ID	Easting	Northing
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W3-WL3	637642	5871625
W3-WL3	637639	5871620
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W3-WL3	637552	5871886
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W3-WL3	637551	5871901
W3-WL3	637554	5871913
W3-WL3	637563	5871917
W3-WL3	637571	5871923
W3-WL3	637571	5871935
W3-WL3	637568	5871944
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W3-WL3	637552	5871945
W3-WL3	637549	5871950
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W3-WL3	637528	5871950
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W3-WL3	637517	5871935
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W3-WL3	637526	5871966
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W3-WL3	637590	5871985
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W3-WL3	637594	5871995

ID	Easting	Northing
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W3-WL3	637600	5871962
W3-WL3	637596	5871956
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W3-WL4	638618	5872737
W3-WL4	638615	5872730

ID	Easting	Northing
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W3-WL4	638474	5872668
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W3-WL4	638514	5872736
W3-WL4	638517	5872737
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W3-WL5	637038	5871138

ID	Easting	Northing
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W3-WL5	637063	5871091
W3-WL5	637063	5871086
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W3-WL5	637078	5871050
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W3-WL5	637090	5871053
W3-WL5	637095	5871043
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W3-WL5	637096	5871027
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W3-WL5	637085	5871024
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W3-WL5	636923	5871177
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W3-WL5	636879	5871186
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W3-WL5	636864	5871195
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W3-WL5	636864	5871237

ID	Easting	Northing
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W3-WL5	636929	5871264
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W3-WL5	636933	5871294
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W3-WL5	636923	5871313
W3-WL5	636924	5871320
W3-WL5	636927	5871327
W3-WL5	636930	5871337
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W3-WL5	637083	5871593
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W3-WL5	637096	5871636
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W3-WL5	637084	5871646

ID	Easting	Northing
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W3-WL5	637098	5871722
W3-WL5	637091	5871729
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W3-WL5	637059	5871813
W3-WL5	637059	5871833
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W3-WL5	637073	5871858
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W3-WL5	637087	5871853
W3-WL5	637091	5871849
W3-WL5	637092	5871850
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W3-WL5	637107	5871848
W3-WL5	637114	5871849
W3-WL5	637118	5871856
W3-WL5	637124	5871860
W3-WL5	637126	5871866
W3-WL5	637132	5871876
W3-WL5	637136	5871886
W3-WL5	637137	5871900
W3-WL5	637143	5871905
W3-WL5	637143	5871917
W3-WL5	637147	5871927
W3-WL5	637143	5871938
W3-WL5	637143	5871953
W3-WL5	637141	5871961
W3-WL5	637144	5871972
W3-WL5	637155	5871984
W3-WL5	637164	5871989
W3-WL5	637170	5872000
W3-WL5	637176	5872009
W3-WL5	637196	5872044
W3-WL5	637200	5872058

ID	Easting	Northing
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W3-WL5	637285	5872103
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W3-WL5	637264	5872073
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W3-WL5	637244	5872046
W3-WL5	637244	5872046
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W3-WL5	637253	5872041
W3-WL5	637242	5872023
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W3-WL5	637217	5871969
W3-WL5	637213	5871957
W3-WL5	637208	5871950
W3-WL5	637203	5871935
W3-WL5	637195	5871923
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W3-WL5	637162	5871879
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W3-WL5	637117	5871638
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W3-WL5	637120	5871577

ID	Easting	Northing
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W3-WL6	638056	5871896
W3-WL6	638059	5871892
W3-WL6	638064	5871890
W3-WL6	638072	5871890
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W3-WL6	638087	5871880
W3-WL6	638091	5871877
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W3-WL6	638102	5871879
W3-WL6	638109	5871881
W3-WL6	638105	5871887
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W3-WL6	638112	5871946
W3-WL6	638113	5871954
W3-WL6	638114	5871961
W3-WL6	638120	5871967
W3-WL6	638120	5871969
W3-WL6	638116	5871970
W3-WL6	638112	5871974
W3-WL6	638108	5871975
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W3-WL6	638082	5871961
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W3-WL6	638070	5871941
W3-WL6	638069	5871932
W3-WL6	638057	5871930
W3-WL6	638050	5871923
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W3-WL7	638077	5872182
W3-WL7	638071	5872179
W3-WL7	638066	5872173
W3-WL7	638061	5872166
W3-WL7	638054	5872160
W3-WL7	638053	5872155
W3-WL7	638050	5872154
W3-WL7	638048	5872150
W3-WL7	638041	5872144

ID	Easting	Northing
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W3-WL7	638024	5872133
W3-WL7	638018	5872138
W3-WL7	638014	5872139
W3-WL7	638013	5872149
W3-WL7	638003	5872159
W3-WL7	638000	5872159
W3-WL7	637993	5872156
W3-WL7	637990	5872159
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W3-WL7	637968	5872150
W3-WL7	637954	5872147
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W3-WL7	637944	5872246
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W3-WL7	637957	5872251
W3-WL7	637965	5872254
W3-WL7	637979	5872256
W3-WL7	637984	5872263
W3-WL7	637997	5872265
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W3-WL7	638012	5872262
W3-WL7	638022	5872262
W3-WL7	638031	5872257
W3-WL7	638037	5872254
W3-WL7	638045	5872258
W3-WL7	638051	5872256
W3-WL7	638060	5872257
W3-WL7	638063	5872261
W3-WL7	638071	5872262
W3-WL7	638076	5872262

ID	Easting	Northing
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W3-WL7	638087	5872241
W3-WL7	638086	5872221
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W3-WL7	638069	5872193
W3-WL7	638069	5872193
W3-WL7	638069	5872193
W3-WL7	638069	5872193
Wabush 4 Ski		
W4-WL1		
W4-WL1	639803	5868906
W4-WL1	639797	5868909
W4-WL1	639795	5868903
W4-WL1	639791	5868896
W4-WL1	639788	5868889
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W4-WL1	639785	5868869
W4-WL1	639777	5868852
W4-WL1	639769	5868835
W4-WL1	639759	5868827
W4-WL1	639756	5868820
W4-WL1	639748	5868813
W4-WL1	639744	5868806
W4-WL1	639749	5868791
W4-WL1	639759	5868795
W4-WL1	639770	5868800
W4-WL1	639777	5868812
W4-WL1	639782	5868817
W4-WL1	639785	5868821
W4-WL1	639790	5868822
W4-WL1	639803	5868826
W4-WL1	639812	5868821
W4-WL1	639821	5868809
W4-WL1	639830	5868807
W4-WL1	639832	5868806
W4-WL1	639841	5868806
W4-WL1	639842	5868813

*** All Coordinates are in NAD27 UTM Z19

APPENDIX C

SITE PHOTOGRAPHS

Wetland Delineation Photographs

W4-WL1 – Herb/Shrub Fen

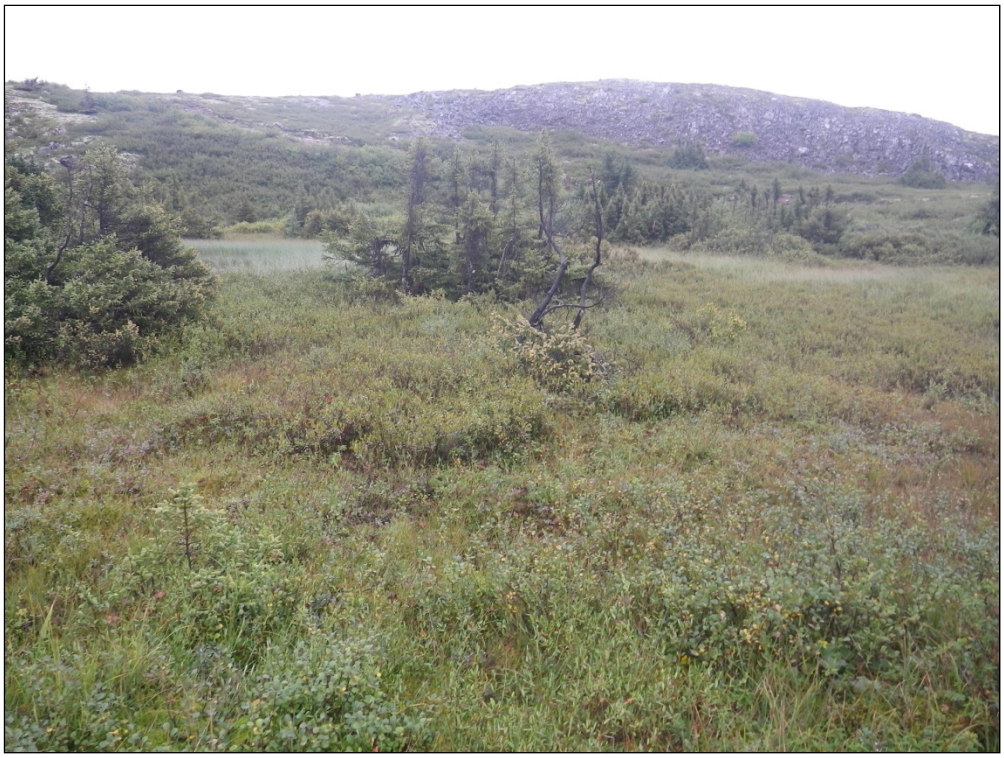
W4-WL1 – Wetland Test Pit "W4-WL1-WP1"

W4-WL1 – Upland Test Pit “W4-WL1-UP1”

W3-WL1 – Herb Fen

W3-WL1 – Wetland Test Pit “W3-WL1-WP1”

W3-WL1 – Upland Test Pit “W3-WL1-UP1”



W3-WL2 – Shrub/Herb Fen

W3-WL2 – Wetland Test Pit “W3-WL2-WP1”

W3-WL2 – Upland Test Pit “W3-WL2-UP1”

W3-WL3 – Shrub/Herb Fen

W3-WL3 – Wetland Test Pit “W3-WL3-WP1”

W3-WL3 – Upland Test Pit “W3-WL3-UP1”

W3-WL4 – Herb/Shrub Fen

W3-WL4 – Wetland Test Pit “W3-WL4-WP1”

W3-WL4 – Upland Test Pit “W3-WL4-UP1”

W3-WL5 – Riparian Herb/Shrub Fen

W3-WL5 – Wetland Test Pit “W3-WL5-WP1”

W3-WL5 – Upland Test Pit “W3-WL5-UP1”

W3-WL6 – Herb/Shrub Fen

W3-WL6 – Wetland Test Pit “W3-WL6-WP1”

W3-WL6 – Upland Test Pit “W3-WL6-UP1”

W3-WL7 – Herb Fen

W3-WL7 – Wetland Test Pit “W3-WL7-WP1”

W3-WL7 – Upland Test Pit “W3-WL7-UP1”

APPENDIX D
WETLAND FUNCTIONAL ASSESSMENT FORMS

Background

Name of Evaluator: Scott Burley

Address: AMEC Environment & Infrastructure, a Division of AMEC Americas Inc.
50 Troop Ave. Unit # 300
Dartmouth, NS. B3B 1Z1

Date: September 18, 2012

Project Description

a. Summary of Project

Name of Project: IOC Mine Expansion Wetland Baseline Studies, Labrador City, Labrador

i. Is it a public or private project? _ Public X Private
ii. Does it require land use approval? __ Yes X No
iii. Where is it located? Wabush 4 Ski Hill location, Labrador City, Labrador

iv.	**Is it proposed in or near a wetland?**	_ In	X_ Near
v.	**Will the wetland be...fully or partially drained?**	_Fully	_ Partially
	fully or partially dredged?	_ Fully	_ Partially
	completely or partially filled?	_ Fully	_ Partially
	fully or partially dyked?	_ Fully	_ Partially
	fully or partially flooded?	_ Fully	_ Partially
	fully or partially enhanced/restored?	_ Fully	_ Partially
	Other-		

*Note: Wetland was assessed based on the assumption that the Project design for the ski hill could avoid construction within the wetland and as such no impacts to wetland functions or values are expected at this time. If the Project Design does involve work within the wetland, then impacts to wetland functions and values should be assessed based on the nature of the work.

b. Type of Activity Proposed

i.	____	**Industrial**
ii.	____	**Commercial**
iii.	____	**Residential**
iv.	____	**Institutional**
v.	X	**Recreational/Tourism**
vi.	____	**Agriculture**
vii.	____	**Transportation/ Utility Corridor**
viii.	____	**Habitat Development**
ix.	____	**Forestry**

x. _____ Other (described)

xi. Statement of Project Purpose: Iron Ore Canada (IOC) intends to expand their Labrador City iron mining operations to include an open pit mine location at the Wabush 3 Study Area. The development of the Wabush 3 open pit mine will result in the closure of the Smokey Mountain ski facilities and IOC has determined that it will replace the ski facilities at another location. Wabush 4 (near Beverley Lake) was chosen as the proposed replacement location for the displaced ski hill.

xii. Precise Description of Activity

The Project will involve the construction of a new ski hill. Construction will include clearing and grubbing of vegetation, excavating and other earthworks as well as the construction of buildings and other infrastructure typically required for a ski hill operation (lodge, ski lift, maintenance buildings, etc.). However the wetland could be incorporated into the project design such that these activities would not occur within the wetland.

vi. Level of Project Understanding/Refinement

_ At very preliminary stage; little or no economic cost/benefit analysis
X Preliminary stage, conceptual drawings, economic cost/benefit analysis, environmental Impact considerations
_ Detailed design; design drawings, cost/benefit analysis (all components), and Environmental Impact Assessment

vii. Potential for Stewardship

Stewardship represents landowner commitment to manage the wetland in society's interests. Does that potential exist for this wetland?

_ Yes
X No
_ Maybe

If yes or maybe, what steps are needed to institute a stewardship program?

c. **i. Summary of Potential Disbenefits**

There are expected problems that may occur because of the project. These potential problems are the preliminary issues that will need to be addressed as part of the project review.

_ Noise pollution	X Water drawdown	X Recreational loss
_ Air pollution	X Habitat loss	_ Economic loss
X Water pollution (Sediment)	_ Aesthetic loss	X Other (temporary construction effect from noise & dust)

Wetland Description

a. Wetland Location

Province/Territory: Newfoundland and Labrador

Common Place Name (if any): Wabush 4

Nearest Urban Centre: Labrador City, Labrador

Legal Description (if any): N/A

Land Designation:
_ Public
X_ Private
_ Protected Area
_ Other
If public, name of area/site (if any)

If protected, name of agency and status

b. Wetland Context

This provides a brief description of the wetland and preliminary relationship to the project.

i. Wetland Complexity **Size**

Is this a single wetland _ Yes __ No _ _ ha ( ) acres
Is this a wetland complex* X Yes __ No 0.49 ha (1.2) acres

ii. Wetland Class

a) Single Wetland	**b) Wetland Complex**	**c) Wetland Classification**
_ Bog	__ Bog	_ Temporary
_ Fen	X Fen	_ Seasonal
_ Swamp (SHRUB)	X Swamp	X Permanent
_ Marsh	_ Marsh	
_ Shallow Water	_ Shallow Water	

iii. Has this wetland been previously impacted?

X Yes _ No

If yes, describe: A dirt road is located along the southern side of the wetland and may impact drainage.

Wetland Viability

a. Results of Past Effects upon the Wetland

Has the wetland decreased in size during the past five years?
_ Yes
_ No
_X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Is the wetland known to be detrimentally affected by other nearby projects or drainage system changes?
_ Yes
_ No
X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have animal or plant communities been detrimentally impacted by past activity?
_ Yes
_ No
_X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have the wetland hydrological characteristics been detrimentally affected by other nearby activities?
_ Yes
_ No
_X Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

b. Wetland Status

Has the wetland been compromised up to or beyond its viability as a functioning wetland?
_ Yes
_X_ No

Have most similar wetland types been lost to conversion in the region?
_ Yes
_X_ No

Stage One "General Analysis"

Biological Component: Importance to Wildlife/Plant Communities

i. Significance for Waterfowl/Wildlife Species

PROVINCIAL/TERRITORIAL
CLASSIFICATION (GOLET SCORE)

	High >80	Moderate 60-80	Low <60	Not Available
Waterfowl/ Wildlife				X

Source:

ii. Rarity/Scarcity or Uniqueness

NATIONAL, OR PROVINCIAL\
TERRITORIAL CLASSIFICATION

	High	Moderate	Low	Not Available
Waterfowl/Wildlife				X
Vegetation				X

Source:

Social/Cultural Component: Contribution to Quality of Life

	High	Moderate	Low	Not Available
Existing, Proposed or Potential International/National/Provincial/Regional Heritage Designation or Protected Status (within or adjacent to the protected area)				X

Source:

Stage Two Evaluation Undertaken By:

Name: Scott Burley

Position/Title: Biologist

Organization: AMEC Environment & Infrastructure

Address: 50 Troop Ave. Unit #31
Dartmouth, NS B3B 1Z1

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values Relate to the capacity of the wetland to regulate and maintain essential ecological processes and life-support systems that have value to society	**1.1 Hydrological Values** Value of the wetland in contributing to surface and groundwater stocks.				
	*1.1.1 Does the wetland contribute to recharge of regional water supply aquifers?	YES	Regional		Outlets into Beverley Lake which is part of the Municipal water supply for Labrador City
	*1.1.2 Does the wetland provide flood protection benefits?	NO			
	1.1.3 Does the wetland contribute to usable surface water?	NO			
	1.1.4 Does the wetland provide erosion control?	NO			
	1.1.5 Does the wetland provide flow augmentation to users through a headwater position in the catchment basin?	NO			
	*1.1.6 Does the wetland reduce tidal impacts?	NO			
	Hydrological Values Total	Y= 1;N=5	R=1		
	***Critical Values Total**	1			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.2 Biogeochemical Values** Value of the wetland in contributing to surface water and groundwater quality.				
	*1.2.1 Does the wetland receive significant pollution of a type amenable to amelioration by wetlands?	NO			
	1.2.2 Does the wetland provide storage for agricultural run-off?	NO			
	*1.2.3 Does the wetland provide for containment of toxics contained in surface run-off or through discharge flow?	YES	LOCAL		Potentially receives contaminates generated from dirt road
	1.2.4 Does the wetland provide for sediment flow stabilization?	YES	LOCAL		Potentially stabilizes sediment generated from dirt road
	1.2.5 Does the wetland have high nutrient levels which support significant wildlife populations?	NO			
	Biogeochemical Values Total	Y=2; N=3	L=2		
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.3 Habitat Values** Role of the wetland in contributing to the well-being of important plant and animal values.				
	*1.3.1 Are there any rare, threatened or endangered animal or plant species present?	YES	REGIONAL		Regionally rare (ACCDC S2S4, S3S5) plant species present in wetland
	*1.3.2 Does the wetland contain high quality significant habitats for migratory birds?	NO			
	1.3.3 Does the wetland provide habitat for sport and/or commercial fish?	NO			
	1.3.4 Does the wetland provide significant habitat for reptiles and amphibians?	POSSIBLE	LOCAL		May provide habitat for amphibians and reptiles
	1.3.5 Does the wetland provide significant habitat for crustaceans?	NO			
	1.3.6 Does the wetland provide significant habitat for mammals?	POSSIBLE	LOCAL		May provide marginal habitat for mammals
	*1.3.7 Does the wetland support a significant animal or plant species in unusual abundance?	NO			
	1.3.8 Does the wetland and its associated vegetation protect natural shorelines?	NO			
	*1.3.9 Is the wetland ranked as a Class I, II, or III wetland by Canada Land Inventory or other accepted evaluation systems?	NO			
	Habitat Values Total	Y=1; P = 2; N = 6	L = 2; R = 1		
	***Critical Values Total**	1			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.4 Ecological Values** Role of the wetland in stimulating relations of plant and animal communities.				
	1.4.1 Does the wetland support an extensive ecosystem complex including uplands?	NO			
	*1.4.2 Has a regional threshold been reached where the significance of wetland ecosystems for the entire region will be compromised by further degradations?	NO			
	*1.4.3 Is the wetland considered a classic example of its type?	NO			
	1.4.4 Are there few remaining natural, unimpacted wetlands of this type in the region?	NO			
	1.4.5 Does the wetland contain, owe its existence to, or is it a part of or ecologically associated with a geological feature which is an excellent representation of its type?	NO			
	1.4.6 Does the wetland form an integral part of an important water drainage system?	NO			
	*1.4.7 Does the wetland display biological diversity that is of interest?	NO			
	Ecological Values Total	N=7			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.1 Aesthetic Values** Role of the wetland in the quality of the scenic environment.				
	2.1.1 Is the wetland visible from a provincial/territorial highway, a designated scenic highway/road or passenger railroad?	NO			
	2.1.2 Does the wetland provide a valuable aesthetic or open space function?	NO			
	2.1.3 Does the wetland add substantially to the visual diversity of the landscape?	NO			
	*2.1.4 Is the wetland an important sightseeing locale?	NO			
	Aesthetic Values Total	N=4			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.2 Recreational Values** Role of the wetland in stimulating recreation activities.				
	2.2.1 Does the wetland provide a base for viewing or photographing large numbers of wildlife?	NO			
	2.2.2 Does the wetland provide opportunities for boating?	NO			
	2.2.3 Does the wetland provide winter recreation opportunities?	NO			
	2.2.4 Does the wetland provide high quality sport hunting or fishing?	NO			
	Recreational Values Total	N=4			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.3 Education and Public Awareness Values** Role of the wetland in stimulating the public values and understanding.				
	2.3.1 Is the wetland used for scientific research?	NO			
	*2.3.2 Is the wetland used for educational and interpretation purposes?	NO			
	2.3.3 Does the wetland exist close to a large urban population?	YES	LOCAL		Located close to Labrador City
	2.3.4 Does the wetland receive large numbers of visitors?	NO			
	Education and Public Awareness Values Total	Y=1;N=3	L=1		
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.4 Public Status Values** Role of the wetland in creating a sense of public ownership				
	2.4.1 Is the wetland part of the pattern of settlement and rural/urban lifestyle?	NO			
	2.4.2 Is the wetland a designated site of special public interest?	NO			
	*2.4.3 Is the wetland a unique national, provincial or regional resource?	NO			
	2.4.4 Are there policies/programs to support conservation/restoration of the wetland?	YES	PROVINCIAL		Water Resources Act, 2002
	2.4.5 Does the wetland provide for easy public access?	YES	LOCAL		Accessible via dirt road
	2.4.6 Is the wetland public land?	NO			
	Public Status Values Total	Y=2, N=4	P=1; L=1		
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.5 Cultural Attribute Values** Role of the wetland in the identity of the people in the area.				
	2.5.1 Does the wetland form part of the historical/cultural heritage of a regional population?	NO			
	*2.5.2.1 Does the wetland contain **known** heritage or archaeological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain heritage or archaeological resources?	POSSIBLE	LOCAL		Wetland may contain heritage resources
	*2.5.2.1 Does the wetland contain **known** palaeontological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain palaeontological resources?	POSSIBLE	LOCAL		Paleontological resources may be present
	2.5.3 Is the wetland utilised for cultural events or cultural renewal?	NO			
	*2.5.4.1 Does the wetland form part of a **known** Native traditional use area?	NO			
	2.5.4.2 Does the wetland **potentially** form part of a Native traditional use area?	POSSIBLE	LOCAL		Wetland may form part of a Native traditional use area.
	Cultural Attribute Values Total	P=3, N=5	L=3		
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.1 Agricultural Values** Role of the wetland in contributing to agricultural production.				
	3.1.1 Does the wetland provide water for livestock?	NO			
	3.1.2 Does the wetland provide a source of forage?	NO			
	*3.1.3 Does the wetland provide a source of water for crop irrigation?	NO			
	3.1.4 Does the wetland serve to reduce topsoil erosion?	NO			
	3.1.5 Does the wetland serve to increase soil moisture and enhance agricultural crop production?	NO			
	Agricultural Values Total	N=5			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.2 Renewable Resource Values** Role of the wetland in contributing to the viability of renewable resource harvest.				
	*3.2.1 Is the wetland used for commercial or subsistence hunting, trapping and fishing?	NO			
	3.2.2 Does the wetland provide opportunities for non-commercial uses of fish, wildlife, crustaceans and/or water resources?	NO			
	3.2.3 Can forest resources of the wetland be harvested?	NO			
	*3.2.4 Are there other commercial uses of the wetland, such as harvesting opportunities for wild rice, cranberries, or gathering crabs and oysters?	NO			
	Renewable Resource Values Total	N=4			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.3 Non-renewable Resource Values** Role of the wetland in contributing non-renewable resources for consumption.				
	*3.3.1 Is the wetland used as a commercial source of peat for horticulture or energy?	NO			
	Non-renewable Resource Values Total	N=1			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.4 Tourism and Recreational Values** Role of the wetland in stimulating tourism and recreation economic benefits.				
	*3.4.1 Does the wetland represent an important local, regional, or provincial tourism or recreation attraction?	NO			
	3.4.2 Does the wetland contribute to the local, regional, or provincial tourism and recreation economy?	NO			
	3.4.3 Does the wetland contribute to national and international tourism development?"	NO			
	Tourism and Recreational Values Total	N=3			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.5 Urban Values** Role of the wetland in contributing to urban economic values.				
	*3.5.1 Is the wetland used to provide water for industry?	NO			
	*3.5.2 Is the wetland used as a means of sewage treatment?	NO			
	*3.5.3 Is the wetland a direct source of domestic water supply?	NO			
	3.5.4 Does the wetland enhance residential, commercial or industrial development values?	NO			
	3.5.5 Does the wetland contribute to urban flood protection and associated land values?	NO			
	Urban Values Total	N=5			
	***Critical Values Total**	0			

Summary of Wetland Values
Significance and Expected Impact

	Are Criteria Present?					Level of Criterion Significance					Expected Impact of Project Upon Wetland Values		
	Yes	Likely	Possible	Unknown	Critical	National	Provincial	Regional	Local	Negligible	High	Moderate	Low
1. Life-support Values													
1.1 Hydrological Values	1				1			1					
1.2 Biogeochemical Values	2				1				2				
1.3 Habitat Values	1		2		1			1	2				
1.4 Ecological Values													
2. Social/Cultural Values													
2.1 Aesthetic Values													
2.2 Recreational Values													
2.3 Education and Public Awareness Values	1								1				
2.4 Public Status Values	2						1		1				
2.5 Cultural Attribute Values			3						3				
3. Production Values													
3.1 Agricultural Values													
3.2 Renewable Resource Values													
3.3 Non-renewable Resource Values													
3.4 Tourism and Recreational Values													
3.5 Urban Values													
Total Occurrences	7		5		3		1	2	9				

Background

Name of Evaluator: Scott Burley

Address: AMEC Environment & Infrastructure, a Division of AMEC Americas Inc.
50 Troop Ave. Unit # 300
Dartmouth, NS. B3B 1Z1

Date: September 19, 2012

Project Description

a. Summary of Project

Name of Project: IOC Mine Expansion Wetland Baseline Studies, Labrador City, Labrador

i. Is it a public or private project? _ Public X Private
ii. Does it require land use approval? __ Yes X No
iii. Where is it located? Wabush 3 Open Pit Mine, Labrador City, Labrador

iv.	**Is it proposed in or near a wetland?**	*X In	_ Near
v.	**Will the wetland be...fully or partially drained?**	*X Fully	_ Partially
	fully or partially dredged?	_ Fully	_ Partially
	completely or partially filled?	*X Fully	_ Partially
	fully or partially dyked?	_ Fully	_ Partially
	fully or partially flooded?	_ Fully	_ Partially
	fully or partially enhanced/restored?	_ Fully	_ Partially
	Other-		

*Note: Wetland was assessed based on the assumption that the entire Study Area will be impacted. Impacts to wetland may change depending on final design plans and actual Project footprint.

b. Type of Activity Proposed

i. X Industrial
ii. _____ Commercial
iii. _____ Residential
iv. _____ Institutional
v. ___ Recreational/Tourism
vi. _____ Agriculture
vii. _____ Transportation/ Utility Corridor
viii. _____ Habitat Development
ix. _____ Forestry
x. _____ Other (described)

xi. Statement of Project Purpose: Iron Ore Canada (IOC) intends to expand their Labrador City iron mining operations to include an open pit mine location at the Wabush 3 Study Area.

xii. Precise Description of Activity

The Project will involve the construction and ongoing operation of an open pit mine within the Study Area. Construction will include clearing and grubbing of vegetation, excavating, blasting and other earthworks as well as the construction of buildings and other infrastructure typically required for an open pit mine operation (Mechanical and maintenance buildings, etc.). It is assumed that the entire Study Area will be impacted during the construction and/or operation of the mine.

vi. Level of Project Understanding/Refinement

_ At very preliminary stage; little or no economic cost/benefit analysis
X Preliminary stage, conceptual drawings, economic cost/benefit analysis, environmental Impact considerations
_ Detailed design; design drawings, cost/benefit analysis (all components), and Environmental Impact Assessment

vii. Potential for Stewardship

Stewardship represents landowner commitment to manage the wetland in society's interests. Does that potential exist for this wetland?

_ Yes
X No
_ Maybe

If yes or maybe, what steps are needed to institute a stewardship program?

c. **i. Summary of Potential Disbenefits**

There are expected problems that may occur because of the project. These potential problems are the preliminary issues that will need to be addressed as part of the project review.

X Noise pollution	X Water drawdown	_ Recreational loss
X Air pollution	X Habitat loss	_ Economic loss
X Water pollution (Sediment)	X Aesthetic loss	X Other (temporary construction effect from noise & dust)

Wetland Description

a. Wetland Location

Province/Territory: Newfoundland and Labrador

Common Place Name (if any): Wabush 3

Nearest Urban Centre: Labrador City, Labrador

Legal Description (if any): N/A

Land Designation:
_ Public
X_ Private
_ Protected Area
_ Other
If public, name of area/site (if any)

If protected, name of agency and status

b. Wetland Context

This provides a brief description of the wetland and preliminary relationship to the project.

i. Wetland Complexity **Size**

Is this a single wetland X_ Yes __ No _ 0.35 ha (0.87) acres
Is this a wetland complex* __ Yes X No _____ha () acres

ii. Wetland Class

a) Single Wetland	**b) Wetland Complex**	**c) Wetland Classification**
_ Bog	__ Bog	_ Temporary
X_ Fen	__ Fen	_ Seasonal
_ Swamp (SHRUB)	__ Swamp	X Permanent
_ Marsh	_ Marsh	
_ Shallow Water	_ Shallow Water	

iii. Has this wetland been previously impacted?

X Yes _ No

If yes, describe: The soil in portions of this wetland have been disturbed (Exploratory drilling or excavating)

Wetland Viability

a. Results of Past Effects upon the Wetland

Has the wetland decreased in size during the past five years?
_ Yes
_ No
_X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Is the wetland known to be detrimentally affected by other nearby projects or drainage system changes?
_ Yes
_ No
X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have animal or plant communities been detrimentally impacted by past activity?
_ Yes
_ No
_X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have the wetland hydrological characteristics been detrimentally affected by other nearby activities?
_ Yes
_ No
_X Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

b. Wetland Status

Has the wetland been compromised up to or beyond its viability as a functioning wetland?
_ Yes
_X_ No

Have most similar wetland types been lost to conversion in the region?
_ Yes
_X_ No

Stage One "General Analysis"

Biological Component: Importance to Wildlife/Plant Communities

i. Significance for Waterfowl/Wildlife Species

PROVINCIAL/TERRITORIAL
CLASSIFICATION (GOLET SCORE)

	High >80	Moderate 60-80	Low <60	Not Available
Waterfowl/ Wildlife				X

Source:

ii. Rarity/Scarcity or Uniqueness

NATIONAL, OR PROVINCIAL\
TERRITORIAL CLASSIFICATION

	High	Moderate	Low	Not Available
Waterfowl/Wildlife				X
Vegetation				X

Source:

Social/Cultural Component: Contribution to Quality of Life

	High	Moderate	Low	Not Available
Existing, Proposed or Potential International/National/Provincial/Regional Heritage Designation or Protected Status (within or adjacent to the protected area)				X

Source:

Stage Two Evaluation Undertaken By:

Name: Scott Burley

Position/Title: Biologist

Organization: AMEC Environment & Infrastructure

Address: 50 Troop Ave. Unit #31
Dartmouth, NS B3B 1Z1

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values Relate to the capacity of the wetland to regulate and maintain essential ecological processes and life-support systems that have value to society	**1.1 Hydrological Values** Value of the wetland in contributing to surface and groundwater stocks.				
	*1.1.1 Does the wetland contribute to recharge of regional water supply aquifers?	NO			
	*1.1.2 Does the wetland provide flood protection benefits?	NO			
	1.1.3 Does the wetland contribute to usable surface water?	NO			
	1.1.4 Does the wetland provide erosion control?	NO			
	1.1.5 Does the wetland provide flow augmentation to users through a headwater position in the catchment basin?	YES	LOCAL	LOW	Located in a headwater position in the watershed
	*1.1.6 Does the wetland reduce tidal impacts?	NO			
	Hydrological Values Total	Y=1; N=5	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.2 Biogeochemical Values** Value of the wetland in contributing to surface water and groundwater quality.				
	*1.2.1 Does the wetland receive significant pollution of a type amenable to amelioration by wetlands?	NO			
	1.2.2 Does the wetland provide storage for agricultural run-off?	NO			
	*1.2.3 Does the wetland provide for containment of toxics contained in surface run-off or through discharge flow?	YES	LOCAL	LOW	Potentially receives contaminates generated from dirt road
	1.2.4 Does the wetland provide for sediment flow stabilization?	YES	LOCAL	LOW	Potentially stabilizes sediment generated from dirt road
	1.2.5 Does the wetland have high nutrient levels which support significant wildlife populations?	NO			
	Biogeochemical Values Total	Y=2; N=3	L=2	L=2	
	***Critical Values Total**	1			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.3 Habitat Values** Role of the wetland in contributing to the well-being of important plant and animal values.				
	*1.3.1 Are there any rare, threatened or endangered animal or plant species present?	YES	REGIONAL	HIGH	Regionally rare (ACCDC S3S5) plant species present in wetland
	*1.3.2 Does the wetland contain high quality significant habitats for migratory birds?	NO			
	1.3.3 Does the wetland provide habitat for sport and/or commercial fish?	NO			
	1.3.4 Does the wetland provide significant habitat for reptiles and amphibians?	POSSIBLE	LOCAL	LOW	May provide habitat for amphibians and reptiles
	1.3.5 Does the wetland provide significant habitat for crustaceans?	NO			
	1.3.6 Does the wetland provide significant habitat for mammals?	POSSIBLE	LOCAL	LOW	May provide marginal habitat for mammals
	*1.3.7 Does the wetland support a significant animal or plant species in unusual abundance?	NO			
	1.3.8 Does the wetland and its associated vegetation protect natural shorelines?	NO			
	*1.3.9 Is the wetland ranked as a Class I, II, or III wetland by Canada Land Inventory or other accepted evaluation systems?	NO			
	Habitat Values Total	P = 2; N = 7	L = 2; R=1	L = 2; H=1	
	***Critical Values Total**	1			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.4 Ecological Values** Role of the wetland in stimulating relations of plant and animal communities.				
	1.4.1 Does the wetland support an extensive ecosystem complex including uplands?	NO			
	*1.4.2 Has a regional threshold been reached where the significance of wetland ecosystems for the entire region will be compromised by further degradations?	NO			
	*1.4.3 Is the wetland considered a classic example of its type?	NO			
	1.4.4 Are there few remaining natural, unimpacted wetlands of this type in the region?	NO			
	1.4.5 Does the wetland contain, owe its existence to, or is it a part of or ecologically associated with a geological feature which is an excellent representation of its type?	NO			
	1.4.6 Does the wetland form an integral part of an important water drainage system?	NO			
	*1.4.7 Does the wetland display biological diversity that is of interest?	NO			
	Ecological Values Total	N=7			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.1 Aesthetic Values** Role of the wetland in the quality of the scenic environment.				
	2.1.1 Is the wetland visible from a provincial/territorial highway, a designated scenic highway/road or passenger railroad?	NO			
	2.1.2 Does the wetland provide a valuable aesthetic or open space function?	NO			
	2.1.3 Does the wetland add substantially to the visual diversity of the landscape?	NO			
	*2.1.4 Is the wetland an important sightseeing locale?	NO			
	Aesthetic Values Total	N=4			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.2 Recreational Values** Role of the wetland in stimulating recreation activities.				
	2.2.1 Does the wetland provide a base for viewing or photographing large numbers of wildlife?	NO			
	2.2.2 Does the wetland provide opportunities for boating?	NO			
	2.2.3 Does the wetland provide winter recreation opportunities?	NO			
	2.2.4 Does the wetland provide high quality sport hunting or fishing?	NO			
	Recreational Values Total	N=4			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.3 Education and Public Awareness Values** Role of the wetland in stimulating the public values and understanding.				
	2.3.1 Is the wetland used for scientific research?	NO			
	*2.3.2 Is the wetland used for educational and interpretation purposes?	NO			
	2.3.3 Does the wetland exist close to a large urban population?	YES	LOCAL	LOW	Located close to Labrador City
	2.3.4 Does the wetland receive large numbers of visitors?	NO			
	Education and Public Awareness Values Total	Y=1;N=3	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.4 Public Status Values** Role of the wetland in creating a sense of public ownership				
	2.4.1 Is the wetland part of the pattern of settlement and rural/urban lifestyle?	NO			
	2.4.2 Is the wetland a designated site of special public interest?	NO			
	*2.4.3 Is the wetland a unique national, provincial or regional resource?	NO			
	2.4.4 Are there policies/programs to support conservation/restoration of the wetland?	YES	PROVINCIAL	LOW	Water Resources Act, 2002
	2.4.5 Does the wetland provide for easy public access?	YES	LOCAL	LOW	Accessible via dirt road
	2.4.6 Is the wetland public land?	NO			
	Public Status Values Total	Y=2, N=4	P=1; L=1	L-2	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.5 Cultural Attribute Values** Role of the wetland in the identity of the people in the area.				
	2.5.1 Does the wetland form part of the historical/cultural heritage of a regional population?	NO			
	*2.5.2.1 Does the wetland contain **known** heritage or archaeological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain heritage or archaeological resources?	POSSIBLE	LOCAL	LOW	Wetland may contain heritage resources
	*2.5.2.1 Does the wetland contain **known** palaeontological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain palaeontological resources?	POSSIBLE	LOCAL	LOW	Paleontological resources may be present
	2.5.3 Is the wetland utilised for cultural events or cultural renewal?	NO			
	*2.5.4.1 Does the wetland form part of a **known** Native traditional use area?	NO			
	2.5.4.2 Does the wetland **potentially** form part of a Native traditional use area?	POSSIBLE	LOCAL	LOW	Wetland may form part of a Native traditional use area.
	Cultural Attribute Values Total	P=3, N=5	L=3	L=3	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.1 Agricultural Values** Role of the wetland in contributing to agricultural production.				
	3.1.1 Does the wetland provide water for livestock?	NO			
	3.1.2 Does the wetland provide a source of forage?	NO			
	*3.1.3 Does the wetland provide a source of water for crop irrigation?	NO			
	3.1.4 Does the wetland serve to reduce topsoil erosion?	NO			
	3.1.5 Does the wetland serve to increase soil moisture and enhance agricultural crop production?	NO			
	Agricultural Values Total	N=5			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.2 Renewable Resource Values** Role of the wetland in contributing to the viability of renewable resource harvest.				
	*3.2.1 Is the wetland used for commercial or subsistence hunting, trapping and fishing?	NO			
	3.2.2 Does the wetland provide opportunities for non-commercial uses of fish, wildlife, crustaceans and/or water resources?	NO			
	3.2.3 Can forest resources of the wetland be harvested?	NO			
	*3.2.4 Are there other commercial uses of the wetland, such as harvesting opportunities for wild rice, cranberries, or gathering crabs and oysters?	NO			
	Renewable Resource Values Total	N=4			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.3 Non-renewable Resource Values** Role of the wetland in contributing non-renewable resources for consumption.				
	*3.3.1 Is the wetland used as a commercial source of peat for horticulture or energy?	NO			
	Non-renewable Resource Values Total	N=1			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.4 Tourism and Recreational Values** Role of the wetland in stimulating tourism and recreation economic benefits.				
	*3.4.1 Does the wetland represent an important local, regional, or provincial tourism or recreation attraction?	NO			
	3.4.2 Does the wetland contribute to the local, regional, or provincial tourism and recreation economy?	NO			
	3.4.3 Does the wetland contribute to national and international tourism development?"	NO			
	Tourism and Recreational Values Total	N=3			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.5 Urban Values** Role of the wetland in contributing to urban economic values.				
	*3.5.1 Is the wetland used to provide water for industry?	NO			
	*3.5.2 Is the wetland used as a means of sewage treatment?	NO			
	*3.5.3 Is the wetland a direct source of domestic water supply?	NO			
	3.5.4 Does the wetland enhance residential, commercial or industrial development values?	NO			
	3.5.5 Does the wetland contribute to urban flood protection and associated land values?	NO			
	Urban Values Total	N=5			
	***Critical Values Total**	0			

Summary of Wetland Values
Significance and Expected Impact

	Are Criteria Present?					Level of Criterion Significance					Expected Impact of Project Upon Wetland Values		
	Yes	Likely	Possible	Unknown	Critical	National	Provincial	Regional	Local	Negligible	High	Moderate	Low
1. Life-support Values													
1.1 Hydrological Values	1								1				1
1.2 Biogeochemical Values	2				1				2				2
1.3 Habitat Values	1		2		1			1	2		1		2
1.4 Ecological Values													
2. Social/Cultural Values													
2.1 Aesthetic Values													
2.2 Recreational Values													
2.3 Education and Public Awareness Values	1								1				1
2.4 Public Status Values	2						1		1				2
2.5 Cultural Attribute Values			3						3				3
3. Production Values													
3.1 Agricultural Values													
3.2 Renewable Resource Values													
3.3 Non-renewable Resource Values													
3.4 Tourism and Recreational Values													
3.5 Urban Values													
Total Occurrences	7		5		2		1	1	10		1		11

Background

Name of Evaluator: Scott Burley

Address: AMEC Environment & Infrastructure, a Division of AMEC Americas Inc.
50 Troop Ave. Unit # 300
Dartmouth, NS. B3B 1Z1

Date: September 19, 2012

Project Description

a. Summary of Project

Name of Project: IOC Mine Expansion Wetland Baseline Studies, Labrador City, Labrador

i. Is it a public or private project? _ Public X Private
ii. Does it require land use approval? __ Yes X No
iii. Where is it located? Wabush 3 Open Pit Mine, Labrador City, Labrador

iv.	**Is it proposed in or near a wetland?**	*X In	_ Near
v.	**Will the wetland be...fully or partially drained?**	*X Fully	_ Partially
	fully or partially dredged?	_ Fully	_ Partially
	completely or partially filled?	*X Fully	_ Partially
	fully or partially dyked?	_ Fully	_ Partially
	fully or partially flooded?	_ Fully	_ Partially
	fully or partially enhanced/restored?	_ Fully	_ Partially
	Other-		

*Note: Wetland was assessed based on the assumption that the entire Study Area will be impacted. Impacts to wetland may change depending on final design plans and actual Project footprint.

b. Type of Activity Proposed

i. X Industrial
ii. _____ Commercial
iii. _____ Residential
iv. _____ Institutional
v. ___ Recreational/Tourism
vi. _____ Agriculture
vii. _____ Transportation/ Utility Corridor
viii. _____ Habitat Development
ix. _____ Forestry
x. _____ Other (described)

xi. Statement of Project Purpose: Iron Ore Canada (IOC) intends to expand their Labrador City iron mining operations to include an open pit mine location at the Wabush 3 Study Area.

xii. Precise Description of Activity

The Project will involve the construction and ongoing operation of an open pit mine within the Study Area. Construction will include clearing and grubbing of vegetation, excavating, blasting and other earthworks as well as the construction of buildings and other infrastructure typically required for an open pit mine operation (Mechanical and maintenance buildings, etc.). It is assumed that the entire Study Area will be impacted during the construction and/or operation of the mine.

vi. Level of Project Understanding/Refinement

_ At very preliminary stage; little or no economic cost/benefit analysis
X Preliminary stage, conceptual drawings, economic cost/benefit analysis, environmental Impact considerations
_ Detailed design; design drawings, cost/benefit analysis (all components), and Environmental Impact Assessment

vii. Potential for Stewardship

Stewardship represents landowner commitment to manage the wetland in society's interests. Does that potential exist for this wetland?

_ Yes
X No
_ Maybe

If yes or maybe, what steps are needed to institute a stewardship program?

c. **i. Summary of Potential Disbenefits**

There are expected problems that may occur because of the project. These potential problems are the preliminary issues that will need to be addressed as part of the project review.

X Noise pollution	X Water drawdown	_ Recreational loss
X Air pollution	X Habitat loss	_ Economic loss
X Water pollution (Sediment)	X Aesthetic loss	X Other (temporary construction effect from noise & dust)

Wetland Description

a. Wetland Location

Province/Territory: Newfoundland and Labrador

Common Place Name (if any): Wabush 3

Nearest Urban Centre: Labrador City, Labrador

Legal Description (if any): N/A

Land Designation:
_ Public
X_ Private
_ Protected Area
_ Other
If public, name of area/site (if any)

If protected, name of agency and status

b. Wetland Context

This provides a brief description of the wetland and preliminary relationship to the project.

i. Wetland Complexity **Size**

Is this a single wetland X_ Yes __ No _ 0.42 ha (1.03) acres
Is this a wetland complex* __ Yes X No _____ha () acres

ii. Wetland Class

a) Single Wetland	**b) Wetland Complex**	**c) Wetland Classification**
_ Bog	__ Bog	_ Temporary
X_ Fen	__ Fen	_ Seasonal
_ Swamp (SHRUB)	__ Swamp	X Permanent
_ Marsh	_ Marsh	
_ Shallow Water	_ Shallow Water	

iii. Has this wetland been previously impacted?

X Yes _ No

If yes, describe: A dirt road follows the wetland boundary on three sides which may impact wetland hydrology.

Wetland Viability

a. Results of Past Effects upon the Wetland

Has the wetland decreased in size during the past five years?
_ Yes
_ No
_X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Is the wetland known to be detrimentally affected by other nearby projects or drainage system changes?
_ Yes
_ No
X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have animal or plant communities been detrimentally impacted by past activity?
_ Yes
_ No
_X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have the wetland hydrological characteristics been detrimentally affected by other nearby activities?
_ Yes
_ No
_X Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

b. Wetland Status

Has the wetland been compromised up to or beyond its viability as a functioning wetland?
_ Yes
_X_ No

Have most similar wetland types been lost to conversion in the region?
_ Yes
_X_ No

Stage One "General Analysis"

Biological Component: Importance to Wildlife/Plant Communities

i. Significance for Waterfowl/Wildlife Species

PROVINCIAL/TERRITORIAL
CLASSIFICATION (GOLET SCORE)

	High >80	Moderate 60-80	Low <60	Not Available
Waterfowl/ Wildlife				X

Source:

ii. Rarity/Scarcity or Uniqueness

NATIONAL, OR PROVINCIAL\
TERRITORIAL CLASSIFICATION

	High	Moderate	Low	Not Available
Waterfowl/Wildlife				X
Vegetation				X

Source:

Social/Cultural Component: Contribution to Quality of Life

	High	Moderate	Low	Not Available
Existing, Proposed or Potential International/National/Provincial/Regional Heritage Designation or Protected Status (within or adjacent to the protected area)				X

Source:

Stage Two Evaluation Undertaken By:

Name: Scott Burley

Position/Title: Biologist

Organization: AMEC Environment & Infrastructure

Address: 50 Troop Ave. Unit #31
Dartmouth, NS B3B 1Z1

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values Relate to the capacity of the wetland to regulate and maintain essential ecological processes and life-support systems that have value to society	**1.1 Hydrological Values** Value of the wetland in contributing to surface and groundwater stocks.				
	*1.1.1 Does the wetland contribute to recharge of regional water supply aquifers?	NO			
	*1.1.2 Does the wetland provide flood protection benefits?	NO			
	1.1.3 Does the wetland contribute to usable surface water?	NO			
	1.1.4 Does the wetland provide erosion control?	NO			
	1.1.5 Does the wetland provide flow augmentation to users through a headwater position in the catchment basin?	YES	LOCAL	LOW	Wetland located at a high position in the watershed
	*1.1.6 Does the wetland reduce tidal impacts?	NO			
	Hydrological Values Total	Y=1;N=5	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.2 Biogeochemical Values** Value of the wetland in contributing to surface water and groundwater quality.				
	*1.2.1 Does the wetland receive significant pollution of a type amenable to amelioration by wetlands?	NO			
	1.2.2 Does the wetland provide storage for agricultural run-off?	NO			
	*1.2.3 Does the wetland provide for containment of toxics contained in surface run-off or through discharge flow?	YES	LOCAL	LOW	Potentially receives contaminates generated from dirt road
	1.2.4 Does the wetland provide for sediment flow stabilization?	YES	LOCAL	LOW	Potentially stabilizes sediment generated from dirt road
	1.2.5 Does the wetland have high nutrient levels which support significant wildlife populations?	NO			
	Biogeochemical Values Total	Y=2; N=3	L=2	L=2	
	***Critical Values Total**	1			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.3 Habitat Values** Role of the wetland in contributing to the well-being of important plant and animal values.				
	*1.3.1 Are there any rare, threatened or endangered animal or plant species present?	YES	REGIONAL	HIGH	Regionally rare (ACCDC S3S5) plant species present in wetland
	*1.3.2 Does the wetland contain high quality significant habitats for migratory birds?	NO			
	1.3.3 Does the wetland provide habitat for sport and/or commercial fish?	NO			
	1.3.4 Does the wetland provide significant habitat for reptiles and amphibians?	POSSIBLE	LOCAL	LOW	May provide habitat for amphibians and reptiles
	1.3.5 Does the wetland provide significant habitat for crustaceans?	NO			
	1.3.6 Does the wetland provide significant habitat for mammals?	POSSIBLE	LOCAL	LOW	May provide marginal habitat for mammals
	*1.3.7 Does the wetland support a significant animal or plant species in unusual abundance?	NO			
	1.3.8 Does the wetland and its associated vegetation protect natural shorelines?	NO			
	*1.3.9 Is the wetland ranked as a Class I, II, or III wetland by Canada Land Inventory or other accepted evaluation systems?	NO			
	Habitat Values Total	Y=1; P = 2; N = 6	L = 2; R=1	L = 2; H=1	
	***Critical Values Total**	1			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.4 Ecological Values** Role of the wetland in stimulating relations of plant and animal communities.				
	1.4.1 Does the wetland support an extensive ecosystem complex including uplands?	NO			
	*1.4.2 Has a regional threshold been reached where the significance of wetland ecosystems for the entire region will be compromised by further degradations?	NO			
	*1.4.3 Is the wetland considered a classic example of its type?	NO			
	1.4.4 Are there few remaining natural, unimpacted wetlands of this type in the region?	NO			
	1.4.5 Does the wetland contain, owe its existence to, or is it a part of or ecologically associated with a geological feature which is an excellent representation of its type?	NO			
	1.4.6 Does the wetland form an integral part of an important water drainage system?	NO			
	*1.4.7 Does the wetland display biological diversity that is of interest?	NO			
	Ecological Values Total	N=7			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.1 Aesthetic Values** Role of the wetland in the quality of the scenic environment.				
	2.1.1 Is the wetland visible from a provincial/territorial highway, a designated scenic highway/road or passenger railroad?	NO			
	2.1.2 Does the wetland provide a valuable aesthetic or open space function?	NO			
	2.1.3 Does the wetland add substantially to the visual diversity of the landscape?	NO			
	*2.1.4 Is the wetland an important sightseeing locale?	NO			
	Aesthetic Values Total	N=4			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.2 Recreational Values** Role of the wetland in stimulating recreation activities.				
	2.2.1 Does the wetland provide a base for viewing or photographing large numbers of wildlife?	NO			
	2.2.2 Does the wetland provide opportunities for boating?	NO			
	2.2.3 Does the wetland provide winter recreation opportunities?	NO			
	2.2.4 Does the wetland provide high quality sport hunting or fishing?	NO			
	Recreational Values Total	N=4			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.3 Education and Public Awareness Values** Role of the wetland in stimulating the public values and understanding.				
	2.3.1 Is the wetland used for scientific research?	NO			
	*2.3.2 Is the wetland used for educational and interpretation purposes?	NO			
	2.3.3 Does the wetland exist close to a large urban population?	YES	LOCAL	LOW	Located close to Labrador City
	2.3.4 Does the wetland receive large numbers of visitors?	NO			
	Education and Public Awareness Values Total	Y=1;N=3	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.4 Public Status Values** Role of the wetland in creating a sense of public ownership				
	2.4.1 Is the wetland part of the pattern of settlement and rural/urban lifestyle?	NO			
	2.4.2 Is the wetland a designated site of special public interest?	NO			
	*2.4.3 Is the wetland a unique national, provincial or regional resource?	NO			
	2.4.4 Are there policies/programs to support conservation/restoration of the wetland?	YES	PROVINCIAL	MODERATE	Water Resources Act, 2002
	2.4.5 Does the wetland provide for easy public access?	YES	LOCAL	LOW	Accessible via dirt road
	2.4.6 Is the wetland public land?	NO			
	Public Status Values Total	Y=2, N=4	P=1; L=1	M=1; L-1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.5 Cultural Attribute Values** Role of the wetland in the identity of the people in the area.				
	2.5.1 Does the wetland form part of the historical/cultural heritage of a regional population?	NO			
	*2.5.2.1 Does the wetland contain **known** heritage or archaeological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain heritage or archaeological resources?	POSSIBLE	LOCAL	LOW	Wetland may contain heritage resources
	*2.5.2.1 Does the wetland contain **known** palaeontological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain palaeontological resources?	POSSIBLE	LOCAL	LOW	Paleontological resources may be present
	2.5.3 Is the wetland utilised for cultural events or cultural renewal?	NO			
	*2.5.4.1 Does the wetland form part of a **known** Native traditional use area?	NO			
	2.5.4.2 Does the wetland **potentially** form part of a Native traditional use area?	POSSIBLE	LOCAL	LOW	Wetland may form part of a Native traditional use area.
	Cultural Attribute Values Total	P=3, N=5	L=3	L=3	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.1 Agricultural Values** Role of the wetland in contributing to agricultural production.				
	3.1.1 Does the wetland provide water for livestock?	NO			
	3.1.2 Does the wetland provide a source of forage?	NO			
	*3.1.3 Does the wetland provide a source of water for crop irrigation?	NO			
	3.1.4 Does the wetland serve to reduce topsoil erosion?	NO			
	3.1.5 Does the wetland serve to increase soil moisture and enhance agricultural crop production?	NO			
	Agricultural Values Total	N=5			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.2 Renewable Resource Values** Role of the wetland in contributing to the viability of renewable resource harvest.				
	*3.2.1 Is the wetland used for commercial or subsistence hunting, trapping and fishing?	NO			
	3.2.2 Does the wetland provide opportunities for non-commercial uses of fish, wildlife, crustaceans and/or water resources?	NO			
	3.2.3 Can forest resources of the wetland be harvested?	NO			
	*3.2.4 Are there other commercial uses of the wetland, such as harvesting opportunities for wild rice, cranberries, or gathering crabs and oysters?	NO			
	Renewable Resource Values Total	N=4			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.3 Non-renewable Resource Values** Role of the wetland in contributing non-renewable resources for consumption.				
	*3.3.1 Is the wetland used as a commercial source of peat for horticulture or energy?	NO			
	Non-renewable Resource Values Total	N=1			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.4 Tourism and Recreational Values** Role of the wetland in stimulating tourism and recreation economic benefits.				
	*3.4.1 Does the wetland represent an important local, regional, or provincial tourism or recreation attraction?	NO			
	3.4.2 Does the wetland contribute to the local, regional, or provincial tourism and recreation economy?	NO			
	3.4.3 Does the wetland contribute to national and international tourism development?"	NO			
	Tourism and Recreational Values Total	N=3			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.5 Urban Values** Role of the wetland in contributing to urban economic values.				
	*3.5.1 Is the wetland used to provide water for industry?	NO			
	*3.5.2 Is the wetland used as a means of sewage treatment?	NO			
	*3.5.3 Is the wetland a direct source of domestic water supply?	NO			
	3.5.4 Does the wetland enhance residential, commercial or industrial development values?	NO			
	3.5.5 Does the wetland contribute to urban flood protection and associated land values?	NO			
	Urban Values Total	N=5			
	***Critical Values Total**	0			

Summary of Wetland Values
Significance and Expected Impact

	Are Criteria Present?					Level of Criterion Significance					Expected Impact of Project Upon Wetland Values		
	Yes	Likely	Possible	Unknown	Critical	National	Provincial	Regional	Local	Negligible	High	Moderate	Low
1. Life-support Values													
1.1 Hydrological Values	1								1				1
1.2 Biogeochemical Values	2				1				2				2
1.3 Habitat Values	1		2		1			1	2		1		2
1.4 Ecological Values													
2. Social/Cultural Values													
2.1 Aesthetic Values													
2.2 Recreational Values													
2.3 Education and Public Awareness Values	1								1				1
2.4 Public Status Values	2						1		1			1	1
2.5 Cultural Attribute Values			3						3				3
3. Production Values													
3.1 Agricultural Values													
3.2 Renewable Resource Values													
3.3 Non-renewable Resource Values													
3.4 Tourism and Recreational Values													
3.5 Urban Values													
Total Occurrences	7		5		2		1	1	10		1	1	10

Background

Name of Evaluator: Scott Burley

Address: AMEC Environment & Infrastructure, a Division of AMEC Americas Inc.
50 Troop Ave. Unit # 300
Dartmouth, NS. B3B 1Z1

Date: September 19, 2012

Project Description

a. Summary of Project

Name of Project: IOC Mine Expansion Wetland Baseline Studies, Labrador City, Labrador

i. Is it a public or private project? _ Public X Private
ii. Does it require land use approval? __ Yes X No
iii. Where is it located? Wabush 3 Open Pit Mine, Labrador City, Labrador

iv.	**Is it proposed in or near a wetland?**	*X In	_ Near
v.	**Will the wetland be...fully or partially drained?**	*X Fully	_ Partially
	fully or partially dredged?	_ Fully	_ Partially
	completely or partially filled?	*X Fully	_ Partially
	fully or partially dyked?	_ Fully	_ Partially
	fully or partially flooded?	_ Fully	_ Partially
	fully or partially enhanced/restored?	_ Fully	_ Partially
	Other-		

*Note: Wetland was assessed based on the assumption that the entire Study Area will be impacted. Impacts to wetland may change depending on final design plans and actual Project footprint.

b. Type of Activity Proposed

i. X Industrial
ii. _____ Commercial
iii. _____ Residential
iv. _____ Institutional
v. ___ Recreational/Tourism
vi. _____ Agriculture
vii. _____ Transportation/ Utility Corridor
viii. _____ Habitat Development
ix. _____ Forestry
x. _____ Other (described)

xi. Statement of Project Purpose: Iron Ore Canada (IOC) intends to expand their Labrador City iron mining operations to include an open pit mine location at the Wabush 3 Study Area.

xii. Precise Description of Activity

The Project will involve the construction and ongoing operation of an open pit mine within the Study Area. Construction will include clearing and grubbing of vegetation, excavating, blasting and other earthworks as well as the construction of buildings and other infrastructure typically required for an open pit mine operation (Mechanical and maintenance buildings, etc.). It is assumed that the entire Study Area will be impacted during the construction and/or operation of the mine.

vi. Level of Project Understanding/Refinement

_ At very preliminary stage; little or no economic cost/benefit analysis
X Preliminary stage, conceptual drawings, economic cost/benefit analysis, environmental Impact considerations
_ Detailed design; design drawings, cost/benefit analysis (all components), and Environmental Impact Assessment

vii. Potential for Stewardship

Stewardship represents landowner commitment to manage the wetland in society's interests. Does that potential exist for this wetland?

_ Yes
X No
_ Maybe

If yes or maybe, what steps are needed to institute a stewardship program?

c. **i. Summary of Potential Disbenefits**

There are expected problems that may occur because of the project. These potential problems are the preliminary issues that will need to be addressed as part of the project review.

X Noise pollution	X Water drawdown	_ Recreational loss
X Air pollution	X Habitat loss	_ Economic loss
X Water pollution (Sediment)	X Aesthetic loss	X Other (temporary construction effect from noise & dust)

Wetland Description

a. Wetland Location

Province/Territory: Newfoundland and Labrador

Common Place Name (if any): Wabush 3

Nearest Urban Centre: Labrador City, Labrador

Legal Description (if any): N/A

Land Designation:
_ Public
X_ Private
_ Protected Area
_ Other
If public, name of area/site (if any)

If protected, name of agency and status

b. Wetland Context

This provides a brief description of the wetland and preliminary relationship to the project.

i. Wetland Complexity **Size**

Is this a single wetland _ Yes X No _ ha ( ) acres
Is this a wetland complex* X Yes __ No 5.42 ha (13.40) acres

ii. Wetland Class

a) Single Wetland	**b) Wetland Complex**	**c) Wetland Classification**
_ Bog	__ Bog	_ Temporary
_ Fen	X Fen	_ Seasonal
_ Swamp (SHRUB)	X Swamp	X Permanent
_ Marsh	_ Marsh	
_ Shallow Water	_ Shallow Water	

iii. Has this wetland been previously impacted?

X Yes _ No

If yes, describe: Drill rig tracks through west end of wetland

Wetland Viability

a. Results of Past Effects upon the Wetland

Has the wetland decreased in size during the past five years?
_ Yes
_ No
X Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Is the wetland known to be detrimentally affected by other nearby projects or drainage system changes?
_ Yes
_ No
X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have animal or plant communities been detrimentally impacted by past activity?
_ Yes
_ No
X Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have the wetland hydrological characteristics been detrimentally affected by other nearby activities?
_ Yes
_ No
X Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

b. Wetland Status

Has the wetland been compromised up to or beyond its viability as a functioning wetland?
_ Yes
X No

Have most similar wetland types been lost to conversion in the region?
_ Yes
X No

Stage One "General Analysis"

Biological Component: Importance to Wildlife/Plant Communities

i. Significance for Waterfowl/Wildlife Species

PROVINCIAL/TERRITORIAL CLASSIFICATION (GOLET SCORE)

	High >80	Moderate 60-80	Low <60	Not Available
Waterfowl/ Wildlife				X

Source:

ii. Rarity/Scarcity or Uniqueness

NATIONAL, OR PROVINCIAL\ TERRITORIAL CLASSIFICATION

	High	Moderate	Low	Not Available
Waterfowl/Wildlife				X
Vegetation				X

Source:

Social/Cultural Component: Contribution to Quality of Life

	High	Moderate	Low	Not Available
Existing, Proposed or Potential International/National/Provincial/Regional Heritage Designation or Protected Status (within or adjacent to the protected area)				X

Source:

Stage Two Evaluation Undertaken By:

Name: Scott Burley

Position/Title: Biologist

Organization: AMEC Environment & Infrastructure

Address: 50 Troop Ave. Unit #31
Dartmouth, NS B3B 1Z1

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values Relate to the capacity of the wetland to regulate and maintain essential ecological processes and life-support systems that have value to society	**1.1 Hydrological Values** Value of the wetland in contributing to surface and groundwater stocks.				
	*1.1.1 Does the wetland contribute to recharge of regional water supply aquifers?	NO			
	*1.1.2 Does the wetland provide flood protection benefits?	NO			
	1.1.3 Does the wetland contribute to usable surface water?	NO			
	1.1.4 Does the wetland provide erosion control?	NO			
	1.1.5 Does the wetland provide flow augmentation to users through a headwater position in the catchment basin?	YES	LOCAL	LOW	Wetland located at a high position in the watershed
	*1.1.6 Does the wetland reduce tidal impacts?	NO			
	Hydrological Values Total	Y=1;N=5	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.2 Biogeochemical Values** Value of the wetland in contributing to surface water and groundwater quality.				
	*1.2.1 Does the wetland receive significant pollution of a type amenable to amelioration by wetlands?	NO			
	1.2.2 Does the wetland provide storage for agricultural run-off?	NO			
	*1.2.3 Does the wetland provide for containment of toxics contained in surface run-off or through discharge flow?	NO			
	1.2.4 Does the wetland provide for sediment flow stabilization?	YES	LOCAL	LOW	Provides sediment flow stabilization for small streams that flow through wetland
	1.2.5 Does the wetland have high nutrient levels which support significant wildlife populations?	NO			
	Biogeochemical Values Total	Y=1; N=4	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.3 Habitat Values** Role of the wetland in contributing to the well-being of important plant and animal values.				
	*1.3.1 Are there any rare, threatened or endangered animal or plant species present?	YES	REGIONAL	HIGH	Regionally rare (ACCDC S3S5, S3S4) plant species present in wetland
	*1.3.2 Does the wetland contain high quality significant habitats for migratory birds?	NO			
	1.3.3 Does the wetland provide habitat for sport and/or commercial fish?	NO			
	1.3.4 Does the wetland provide significant habitat for reptiles and amphibians?	POSSIBLE	LOCAL	LOW	May provide habitat for amphibians and reptiles
	1.3.5 Does the wetland provide significant habitat for crustaceans?	NO			
	1.3.6 Does the wetland provide significant habitat for mammals?	POSSIBLE	LOCAL	LOW	May provide marginal habitat for mammals
	*1.3.7 Does the wetland support a significant animal or plant species in unusual abundance?	NO			
	1.3.8 Does the wetland and its associated vegetation protect natural shorelines?	NO			
	*1.3.9 Is the wetland ranked as a Class I, II, or III wetland by Canada Land Inventory or other accepted evaluation systems?	NO			
	Habitat Values Total	Y=1; P = 2; N = 6	L = 2; R=1	H=1; L = 3	
	***Critical Values Total**				

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.4 Ecological Values** Role of the wetland in stimulating relations of plant and animal communities.				
	1.4.1 Does the wetland support an extensive ecosystem complex including uplands?	NO			
	*1.4.2 Has a regional threshold been reached where the significance of wetland ecosystems for the entire region will be compromised by further degradations?	NO			
	*1.4.3 Is the wetland considered a classic example of its type?	NO			
	1.4.4 Are there few remaining natural, unimpacted wetlands of this type in the region?	NO			
	1.4.5 Does the wetland contain, owe its existence to, or is it a part of or ecologically associated with a geological feature which is an excellent representation of its type?	NO			
	1.4.6 Does the wetland form an integral part of an important water drainage system?	NO			
	*1.4.7 Does the wetland display biological diversity that is of interest?	NO			
	Ecological Values Total	N=7			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.1 Aesthetic Values** Role of the wetland in the quality of the scenic environment.				
	2.1.1 Is the wetland visible from a provincial/territorial highway, a designated scenic highway/road or passenger railroad?	NO			
	2.1.2 Does the wetland provide a valuable aesthetic or open space function?	YES	LOCAL	LOW	Provides an open space function within the forested landscape
	2.1.3 Does the wetland add substantially to the visual diversity of the landscape?	NO			
	*2.1.4 Is the wetland an important sightseeing locale?	NO			
	Aesthetic Values Total	Y=1; N=3	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.2 Recreational Values** Role of the wetland in stimulating recreation activities.				
	2.2.1 Does the wetland provide a base for viewing or photographing large numbers of wildlife?	NO			
	2.2.2 Does the wetland provide opportunities for boating?	NO			
	2.2.3 Does the wetland provide winter recreation opportunities?	NO			
	2.2.4 Does the wetland provide high quality sport hunting or fishing?	NO			
	Recreational Values Total	N=4			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.3 Education and Public Awareness Values** Role of the wetland in stimulating the public values and understanding.				
	2.3.1 Is the wetland used for scientific research?	NO			
	*2.3.2 Is the wetland used for educational and interpretation purposes?	NO			
	2.3.3 Does the wetland exist close to a large urban population?	YES	LOCAL	LOW	Located close to Labrador City
	2.3.4 Does the wetland receive large numbers of visitors?	NO			
	Education and Public Awareness Values Total	Y=1;N=3	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.4 Public Status Values** Role of the wetland in creating a sense of public ownership				
	2.4.1 Is the wetland part of the pattern of settlement and rural/urban lifestyle?	NO			
	2.4.2 Is the wetland a designated site of special public interest?	NO			
	*2.4.3 Is the wetland a unique national, provincial or regional resource?	NO			
	2.4.4 Are there policies/programs to support conservation/restoration of the wetland?	YES	PROVINCIAL	MODERATE	Water Resources Act, 2002
	2.4.5 Does the wetland provide for easy public access?	NO			
	2.4.6 Is the wetland public land?	NO			
	Public Status Values Total	Y=1, N=5	P=1	M=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.5 Cultural Attribute Values** Role of the wetland in the identity of the people in the area.				
	2.5.1 Does the wetland form part of the historical/cultural heritage of a regional population?	NO			
	*2.5.2.1 Does the wetland contain **known** heritage or archaeological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain heritage or archaeological resources?	POSSIBLE	LOCAL	LOW	Wetland may contain heritage resources
	*2.5.2.1 Does the wetland contain **known** palaeontological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain palaeontological resources?	POSSIBLE	LOCAL	LOW	Paleontological resources may be present
	2.5.3 Is the wetland utilised for cultural events or cultural renewal?	NO			
	*2.5.4.1 Does the wetland form part of a **known** Native traditional use area?	NO			
	2.5.4.2 Does the wetland **potentially** form part of a Native traditional use area?	POSSIBLE	LOCAL	LOW	Wetland may form part of a Native traditional use area.
	Cultural Attribute Values Total	P=3, N=5	L=3	L=3	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.1 Agricultural Values** Role of the wetland in contributing to agricultural production.				
	3.1.1 Does the wetland provide water for livestock?	NO			
	3.1.2 Does the wetland provide a source of forage?	NO			
	*3.1.3 Does the wetland provide a source of water for crop irrigation?	NO			
	3.1.4 Does the wetland serve to reduce topsoil erosion?	NO			
	3.1.5 Does the wetland serve to increase soil moisture and enhance agricultural crop production?	NO			
	Agricultural Values Total	N=5			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.2 Renewable Resource Values** Role of the wetland in contributing to the viability of renewable resource harvest.				
	*3.2.1 Is the wetland used for commercial or subsistence hunting, trapping and fishing?	NO			
	3.2.2 Does the wetland provide opportunities for non-commercial uses of fish, wildlife, crustaceans and/or water resources?	NO			
	3.2.3 Can forest resources of the wetland be harvested?	NO			
	*3.2.4 Are there other commercial uses of the wetland, such as harvesting opportunities for wild rice, cranberries, or gathering crabs and oysters?	NO			
	Renewable Resource Values Total	N=4			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.3 Non-renewable Resource Values** Role of the wetland in contributing non-renewable resources for consumption.				
	*3.3.1 Is the wetland used as a commercial source of peat for horticulture or energy?	NO			
	Non-renewable Resource Values Total	N=1			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.4 Tourism and Recreational Values** Role of the wetland in stimulating tourism and recreation economic benefits.				
	*3.4.1 Does the wetland represent an important local, regional, or provincial tourism or recreation attraction?	NO			
	3.4.2 Does the wetland contribute to the local, regional, or provincial tourism and recreation economy?	NO			
	3.4.3 Does the wetland contribute to national and international tourism development?"	NO			
	Tourism and Recreational Values Total	N=3			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.5 Urban Values** Role of the wetland in contributing to urban economic values.				
	*3.5.1 Is the wetland used to provide water for industry?	NO			
	*3.5.2 Is the wetland used as a means of sewage treatment?	NO			
	*3.5.3 Is the wetland a direct source of domestic water supply?	NO			
	3.5.4 Does the wetland enhance residential, commercial or industrial development values?	NO			
	3.5.5 Does the wetland contribute to urban flood protection and associated land values?	NO			
	Urban Values Total	N=5			
	***Critical Values Total**	0			

Summary of Wetland Values
Significance and Expected Impact

	Are Criteria Present?					Level of Criterion Significance					Expected Impact of Project Upon Wetland Values		
	Yes	Likely	Possible	Unknown	Critical	National	Provincial	Regional	Local	Negligible	High	Moderate	Low
1. Life-support Values													
1.1 Hydrological Values	1								1				1
1.2 Biogeochemical Values	1								1				1
1.3 Habitat Values	1		2		1			1	2		1		2
1.4 Ecological Values													
2. Social/Cultural Values													
2.1 Aesthetic Values	1								1				1
2.2 Recreational Values													
2.3 Education and Public Awareness Values	1								1				1
2.4 Public Status Values	1						1					1	
2.5 Cultural Attribute Values			3						3				3
3. Production Values													
3.1 Agricultural Values													
3.2 Renewable Resource Values													
3.3 Non-renewable Resource Values													
3.4 Tourism and Recreational Values													
3.5 Urban Values													
Total Occurrences	6		5		1		1	1	9		1	1	9

Background

Name of Evaluator: Scott Burley

Address: AMEC Environment & Infrastructure, a Division of AMEC Americas Inc.
50 Troop Ave. Unit # 300
Dartmouth, NS. B3B 1Z1

Date: September 19, 2012

Project Description

a. Summary of Project

Name of Project: IOC Mine Expansion Wetland Baseline Studies, Labrador City, Labrador

i. Is it a public or private project? _ Public X Private
ii. Does it require land use approval? __ Yes X No
iii. Where is it located? Wabush 3 Open Pit Mine, Labrador City, Labrador

iv.	**Is it proposed in or near a wetland?**	*X In	_ Near
v.	**Will the wetland be...fully or partially drained?**	*X Fully	_ Partially
	fully or partially dredged?	_ Fully	_ Partially
	completely or partially filled?	*X Fully	_ Partially
	fully or partially dyked?	_ Fully	_ Partially
	fully or partially flooded?	_ Fully	_ Partially
	fully or partially enhanced/restored?	_ Fully	_ Partially
	Other-		

*Note: Wetland was assessed based on the assumption that the entire Study Area will be impacted. Impacts to wetland may change depending on final design plans and actual Project footprint.

b. Type of Activity Proposed

i. X Industrial
ii. _____ Commercial
iii. _____ Residential
iv. _____ Institutional
v. ___ Recreational/Tourism
vi. _____ Agriculture
vii. _____ Transportation/ Utility Corridor
viii. _____ Habitat Development
ix. _____ Forestry
x. _____ Other (described)

xi. Statement of Project Purpose: Iron Ore Canada (IOC) intends to expand their Labrador City iron mining operations to include an open pit mine location at the Wabush 3 Study Area.

xii. Precise Description of Activity

The Project will involve the construction and ongoing operation of an open pit mine within the Study Area. Construction will include clearing and grubbing of vegetation, excavating, blasting and other earthworks as well as the construction of buildings and other infrastructure typically required for an open pit mine operation (Mechanical and maintenance buildings, etc.). It is assumed that the entire Study Area will be impacted during the construction and/or operation of the mine.

vi. Level of Project Understanding/Refinement

_ At very preliminary stage; little or no economic cost/benefit analysis
X Preliminary stage, conceptual drawings, economic cost/benefit analysis, environmental Impact considerations
_ Detailed design; design drawings, cost/benefit analysis (all components), and Environmental Impact Assessment

vii. Potential for Stewardship

Stewardship represents landowner commitment to manage the wetland in society's interests. Does that potential exist for this wetland?

_ Yes
X No
_ Maybe

If yes or maybe, what steps are needed to institute a stewardship program?

c. **i. Summary of Potential Disbenefits**

There are expected problems that may occur because of the project. These potential problems are the preliminary issues that will need to be addressed as part of the project review.

X Noise pollution	X Water drawdown	_ Recreational loss
X Air pollution	X Habitat loss	_ Economic loss
X Water pollution (Sediment)	X Aesthetic loss	X Other (temporary construction effect from noise & dust)

Wetland Description

a. Wetland Location

Province/Territory: Newfoundland and Labrador

Common Place Name (if any): Wabush 3

Nearest Urban Centre: Labrador City, Labrador

Legal Description (if any): N/A

Land Designation:
_ Public
X_ Private
_ Protected Area
_ Other
If public, name of area/site (if any)

If protected, name of agency and status

b. Wetland Context

This provides a brief description of the wetland and preliminary relationship to the project.

i. Wetland Complexity **Size**

Is this a single wetland _ Yes X No _ ha ( ) acres
Is this a wetland complex* X Yes __ No 1.06 ha (2.62) acres

ii. Wetland Class

a) Single Wetland	**b) Wetland Complex**	**c) Wetland Classification**
_ Bog	__ Bog	_ Temporary
_ Fen	X Fen	_ Seasonal
_ Swamp (SHRUB)	X Swamp	X Permanent
_ Marsh	_ Marsh	
_ Shallow Water	_ Shallow Water	

iii. Has this wetland been previously impacted?

_ Yes **X** No

If yes, describe:

Wetland Viability

a. Results of Past Effects upon the Wetland

Has the wetland decreased in size during the past five years?
_ Yes
_ No
_X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Is the wetland known to be detrimentally affected by other nearby projects or drainage system changes?
_ Yes
_ No
X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have animal or plant communities been detrimentally impacted by past activity?
_ Yes
_ No
_X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have the wetland hydrological characteristics been detrimentally affected by other nearby activities?
_ Yes
_ No
_X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

b. Wetland Status

Has the wetland been compromised up to or beyond its viability as a functioning wetland?
_ Yes
_X_ No

Have most similar wetland types been lost to conversion in the region?
_ Yes
_X_ No

Stage One "General Analysis"

Biological Component: Importance to Wildlife/Plant Communities

i. Significance for Waterfowl/Wildlife Species

PROVINCIAL/TERRITORIAL
CLASSIFICATION (GOLET SCORE)

	High >80	Moderate 60-80	Low <60	Not Available
Waterfowl/ Wildlife				X

Source:

ii. Rarity/Scarcity or Uniqueness

NATIONAL, OR PROVINCIAL\
TERRITORIAL CLASSIFICATION

	High	Moderate	Low	Not Available
Waterfowl/Wildlife				X
Vegetation				X

Source:

Social/Cultural Component: Contribution to Quality of Life

	High	Moderate	Low	Not Available
Existing, Proposed or Potential International/National/Provincial/Regional Heritage Designation or Protected Status (within or adjacent to the protected area)				X

Source:

Stage Two Evaluation Undertaken By:

Name: Scott Burley

Position/Title: Biologist

Organization: AMEC Environment & Infrastructure

Address: 50 Troop Ave. Unit #31
Dartmouth, NS B3B 1Z1

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values Relate to the capacity of the wetland to regulate and maintain essential ecological processes and life-support systems that have value to society	**1.1 Hydrological Values** Value of the wetland in contributing to surface and groundwater stocks.				
	*1.1.1 Does the wetland contribute to recharge of regional water supply aquifers?	YES	REGIONAL	LOW	Located within watershed of Municipal Water Supply for Labrador City
	*1.1.2 Does the wetland provide flood protection benefits?	YES	LOCAL	LOW	Provides flood protection for surrounding forest community
	1.1.3 Does the wetland contribute to usable surface water?	NO			
	1.1.4 Does the wetland provide erosion control?	YES	LOCAL	LOW	Provides erosion control along stream
	1.1.5 Does the wetland provide flow augmentation to users through a headwater position in the catchment basin?	YES	LOCAL	LOW	Wetland located at a high position in the watershed
	*1.1.6 Does the wetland reduce tidal impacts?	NO			
	Hydrological Values Total	Y=4;N=3	R=1; L=3	L=4	
	***Critical Values Total**	2			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.2 Biogeochemical Values** Value of the wetland in contributing to surface water and groundwater quality.				
	*1.2.1 Does the wetland receive significant pollution of a type amenable to amelioration by wetlands?	NO			
	1.2.2 Does the wetland provide storage for agricultural run-off?	NO			
	*1.2.3 Does the wetland provide for containment of toxics contained in surface run-off or through discharge flow?	NO			
	1.2.4 Does the wetland provide for sediment flow stabilization?	YES	LOCAL	LOW	Provides sediment flow stabilization for unnamed stream flowing through wetland
	1.2.5 Does the wetland have high nutrient levels which support significant wildlife populations?	NO			
	Biogeochemical Values Total	Y=1; N=5	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.3 Habitat Values** Role of the wetland in contributing to the well-being of important plant and animal values.				
	*1.3.1 Are there any rare, threatened or endangered animal or plant species present?	YES	REGIONAL	HIGH	Regionally rare (ACCDC S2S4, S3S5) plant species present in wetland
	*1.3.2 Does the wetland contain high quality significant habitats for migratory birds?	NO			
	1.3.3 Does the wetland provide habitat for sport and/or commercial fish?	NO			
	1.3.4 Does the wetland provide significant habitat for reptiles and amphibians?	POSSIBLE	LOCAL	LOW	May provide habitat for amphibians and reptiles
	1.3.5 Does the wetland provide significant habitat for crustaceans?	NO			
	1.3.6 Does the wetland provide significant habitat for mammals?	POSSIBLE	LOCAL	LOW	May provide marginal habitat for mammals
	*1.3.7 Does the wetland support a significant animal or plant species in unusual abundance?	NO			
	1.3.8 Does the wetland and its associated vegetation protect natural shorelines?	NO			
	*1.3.9 Is the wetland ranked as a Class I, II, or III wetland by Canada Land Inventory or other accepted evaluation systems?	NO			
	Habitat Values Total	Y=1; P = 2; N = 6	L = 2; R = 1	H=1; L = 2	
	***Critical Values Total**	1			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.4 Ecological Values** Role of the wetland in stimulating relations of plant and animal communities.				
	1.4.1 Does the wetland support an extensive ecosystem complex including uplands?	NO			
	*1.4.2 Has a regional threshold been reached where the significance of wetland ecosystems for the entire region will be compromised by further degradations?	NO			
	*1.4.3 Is the wetland considered a classic example of its type?	NO			
	1.4.4 Are there few remaining natural, unimpacted wetlands of this type in the region?	NO			
	1.4.5 Does the wetland contain, owe its existence to, or is it a part of or ecologically associated with a geological feature which is an excellent representation of its type?	NO			
	1.4.6 Does the wetland form an integral part of an important water drainage system?	NO			
	*1.4.7 Does the wetland display biological diversity that is of interest?	NO			
	Ecological Values Total	N=7			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.1 Aesthetic Values** Role of the wetland in the quality of the scenic environment.				
	2.1.1 Is the wetland visible from a provincial/territorial highway, a designated scenic highway/road or passenger railroad?	NO			
	2.1.2 Does the wetland provide a valuable aesthetic or open space function?	NO			
	2.1.3 Does the wetland add substantially to the visual diversity of the landscape?	NO			
	*2.1.4 Is the wetland an important sightseeing locale?	NO			
	Aesthetic Values Total	N=4			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.2 Recreational Values** Role of the wetland in stimulating recreation activities.				
	2.2.1 Does the wetland provide a base for viewing or photographing large numbers of wildlife?	NO			
	2.2.2 Does the wetland provide opportunities for boating?	NO			
	2.2.3 Does the wetland provide winter recreation opportunities?	NO			
	2.2.4 Does the wetland provide high quality sport hunting or fishing?	NO			
	Recreational Values Total	N=4			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.3 Education and Public Awareness Values** Role of the wetland in stimulating the public values and understanding.				
	2.3.1 Is the wetland used for scientific research?	NO			
	*2.3.2 Is the wetland used for educational and interpretation purposes?	NO			
	2.3.3 Does the wetland exist close to a large urban population?	YES	LOCAL	LOW	Located close to Labrador City
	2.3.4 Does the wetland receive large numbers of visitors?	NO			
	Education and Public Awareness Values Total	Y=1;N=3	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.4 Public Status Values** Role of the wetland in creating a sense of public ownership				
	2.4.1 Is the wetland part of the pattern of settlement and rural/urban lifestyle?	NO			
	2.4.2 Is the wetland a designated site of special public interest?	NO			
	*2.4.3 Is the wetland a unique national, provincial or regional resource?	NO			
	2.4.4 Are there policies/programs to support conservation/restoration of the wetland?	YES	PROVINCIAL	MODERATE	Water Resources Act, 2002
	2.4.5 Does the wetland provide for easy public access?	NO			
	2.4.6 Is the wetland public land?	NO			
	Public Status Values Total	Y=1, N=5	P=1	M=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.5 Cultural Attribute Values** Role of the wetland in the identity of the people in the area.				
	2.5.1 Does the wetland form part of the historical/cultural heritage of a regional population?	NO			
	*2.5.2.1 Does the wetland contain **known** heritage or archaeological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain heritage or archaeological resources?	POSSIBLE	LOCAL	LOW	Wetland may contain heritage resources
	*2.5.2.1 Does the wetland contain **known** palaeontological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain palaeontological resources?	POSSIBLE	LOCAL	LOW	Paleontological resources may be present
	2.5.3 Is the wetland utilised for cultural events or cultural renewal?	NO			
	*2.5.4.1 Does the wetland form part of a **known** Native traditional use area?	NO			
	2.5.4.2 Does the wetland **potentially** form part of a Native traditional use area?	POSSIBLE	LOCAL	LOW	Wetland may form part of a Native traditional use area.
	Cultural Attribute Values Total	P=3, N=5	L=3	L=3	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.1 Agricultural Values** Role of the wetland in contributing to agricultural production.				
	3.1.1 Does the wetland provide water for livestock?	NO			
	3.1.2 Does the wetland provide a source of forage?	NO			
	*3.1.3 Does the wetland provide a source of water for crop irrigation?	NO			
	3.1.4 Does the wetland serve to reduce topsoil erosion?	NO			
	3.1.5 Does the wetland serve to increase soil moisture and enhance agricultural crop production?	NO			
	Agricultural Values Total	N=5			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.2 Renewable Resource Values** Role of the wetland in contributing to the viability of renewable resource harvest.				
	*3.2.1 Is the wetland used for commercial or subsistence hunting, trapping and fishing?	NO			
	3.2.2 Does the wetland provide opportunities for non-commercial uses of fish, wildlife, crustaceans and/or water resources?	NO			
	3.2.3 Can forest resources of the wetland be harvested?	NO			
	*3.2.4 Are there other commercial uses of the wetland, such as harvesting opportunities for wild rice, cranberries, or gathering crabs and oysters?	NO			
	Renewable Resource Values Total	N=4			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.3 Non-renewable Resource Values** Role of the wetland in contributing non-renewable resources for consumption.				
	*3.3.1 Is the wetland used as a commercial source of peat for horticulture or energy?	NO			
	Non-renewable Resource Values Total	N=1			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.4 Tourism and Recreational Values** Role of the wetland in stimulating tourism and recreation economic benefits.				
	*3.4.1 Does the wetland represent an important local, regional, or provincial tourism or recreation attraction?	NO			
	3.4.2 Does the wetland contribute to the local, regional, or provincial tourism and recreation economy?	NO			
	3.4.3 Does the wetland contribute to national and international tourism development?"	NO			
	Tourism and Recreational Values Total	N=3			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.5 Urban Values** Role of the wetland in contributing to urban economic values.				
	*3.5.1 Is the wetland used to provide water for industry?	NO			
	*3.5.2 Is the wetland used as a means of sewage treatment?	NO			
	*3.5.3 Is the wetland a direct source of domestic water supply?	NO			
	3.5.4 Does the wetland enhance residential, commercial or industrial development values?	NO			
	3.5.5 Does the wetland contribute to urban flood protection and associated land values?	NO			
	Urban Values Total	N=5			
	***Critical Values Total**	0			

Summary of Wetland Values
Significance and Expected Impact

	Are Criteria Present?					Level of Criterion Significance					Expected Impact of Project Upon Wetland Values		
	Yes	Likely	Possible	Unknown	Critical	National	Provincial	Regional	Local	Negligible	High	Moderate	Low
1. Life-support Values													
1.1 Hydrological Values	4				2			1	3				4
1.2 Biogeochemical Values	1								1				1
1.3 Habitat Values	1		2		1			1	2		1		2
1.4 Ecological Values													
2. Social/Cultural Values													
2.1 Aesthetic Values													
2.2 Recreational Values													
2.3 Education and Public Awareness Values	1								1				1
2.4 Public Status Values	1						1					1	
2.5 Cultural Attribute Values			3						3				3
3. Production Values													
3.1 Agricultural Values													
3.2 Renewable Resource Values													
3.3 Non-renewable Resource Values													1
3.4 Tourism and Recreational Values													
3.5 Urban Values													
Total Occurrences	8		5		3		1	2	10		1	1	11

Background

Name of Evaluator: Scott Burley

Address: AMEC Environment & Infrastructure, a Division of AMEC Americas Inc.
50 Troop Ave. Unit # 300
Dartmouth, NS. B3B 1Z1

Date: September 19, 2012

Project Description

a. Summary of Project

Name of Project: IOC Mine Expansion Wetland Baseline Studies, Labrador City, Labrador

i. Is it a public or private project? _ Public X Private
ii. Does it require land use approval? __ Yes X No
iii. Where is it located? Wabush 3 Open Pit Mine, Labrador City, Labrador

iv.	**Is it proposed in or near a wetland?**	*X In	_ Near
v.	**Will the wetland be...fully or partially drained?**	*X Fully	_ Partially
	fully or partially dredged?	_ Fully	_ Partially
	completely or partially filled?	*X Fully	_ Partially
	fully or partially dyked?	_ Fully	_ Partially
	fully or partially flooded?	_ Fully	_ Partially
	fully or partially enhanced/restored?	_ Fully	_ Partially
	Other-		

*Note: Wetland was assessed based on the assumption that the entire Study Area will be impacted. Impacts to wetland may change depending on final design plans and actual Project footprint.

b. Type of Activity Proposed

i. X Industrial
ii. _____ Commercial
iii. _____ Residential
iv. _____ Institutional
v. ___ Recreational/Tourism
vi. _____ Agriculture
vii. _____ Transportation/ Utility Corridor
viii. _____ Habitat Development
ix. _____ Forestry
x. _____ Other (described)

xi. Statement of Project Purpose: Iron Ore Canada (IOC) intends to expand their Labrador City iron mining operations to include an open pit mine location at the Wabush 3 Study Area.

xii. Precise Description of Activity

The Project will involve the construction and ongoing operation of an open pit mine within the Study Area. Construction will include clearing and grubbing of vegetation, excavating, blasting and other earthworks as well as the construction of buildings and other infrastructure typically required for an open pit mine operation (Mechanical and maintenance buildings, etc.). It is assumed that the entire Study Area will be impacted during the construction and/or operation of the mine.

vi. Level of Project Understanding/Refinement

_ At very preliminary stage; little or no economic cost/benefit analysis
X Preliminary stage, conceptual drawings, economic cost/benefit analysis, environmental Impact considerations
_ Detailed design; design drawings, cost/benefit analysis (all components), and Environmental Impact Assessment

vii. Potential for Stewardship

Stewardship represents landowner commitment to manage the wetland in society's interests. Does that potential exist for this wetland?

_ Yes
X No
_ Maybe

If yes or maybe, what steps are needed to institute a stewardship program?

c. **i. Summary of Potential Disbenefits**

There are expected problems that may occur because of the project. These potential problems are the preliminary issues that will need to be addressed as part of the project review.

X Noise pollution	X Water drawdown	_ Recreational loss
X Air pollution	X Habitat loss	_ Economic loss
X Water pollution (Sediment)	X Aesthetic loss	X Other (temporary construction effect from noise & dust)

Wetland Description

a. Wetland Location

Province/Territory: Newfoundland and Labrador

Common Place Name (if any): Wabush 3

Nearest Urban Centre: Labrador City, Labrador

Legal Description (if any): N/A

Land Designation:
_ Public
X_ Private
_ Protected Area
_ Other
If public, name of area/site (if any)

If protected, name of agency and status

b. Wetland Context

This provides a brief description of the wetland and preliminary relationship to the project.

i. Wetland Complexity **Size**

Is this a single wetland _ Yes X No _ ha ( ) acres
Is this a wetland complex* X Yes __ No >4.94 ha (>11.57) acres

ii. Wetland Class

a) Single Wetland	**b) Wetland Complex**	**c) Wetland Classification**
_ Bog	__ Bog	_ Temporary
_ Fen	X Fen	_ Seasonal
_ Swamp (SHRUB)	X Swamp	X Permanent
_ Marsh	_ Marsh	
_ Shallow Water	_ Shallow Water	

iii. Has this wetland been previously impacted?

X_ Yes _ No

If yes, describe: Drill rig track, ATV trail, and gravel access road are all located within portions of the southwest and north east ends of the wetland.

Wetland Viability

a. Results of Past Effects upon the Wetland

Has the wetland decreased in size during the past five years?
_ Yes
_ No
_X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Is the wetland known to be detrimentally affected by other nearby projects or drainage system changes?
_ Yes
_ No
X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have animal or plant communities been detrimentally impacted by past activity?
_ Yes
_ No
_X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have the wetland hydrological characteristics been detrimentally affected by other nearby activities?
_ Yes
_ No
_X Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

b. Wetland Status

Has the wetland been compromised up to or beyond its viability as a functioning wetland?
_ Yes
_X_ No

Have most similar wetland types been lost to conversion in the region?
_ Yes
_X_ No

Stage One "General Analysis"

Biological Component: Importance to Wildlife/Plant Communities

i. Significance for Waterfowl/Wildlife Species

PROVINCIAL/TERRITORIAL
CLASSIFICATION (GOLET SCORE)

	High >80	Moderate 60-80	Low <60	Not Available
Waterfowl/ Wildlife				X

Source:

ii. Rarity/Scarcity or Uniqueness

NATIONAL, OR PROVINCIAL\
TERRITORIAL CLASSIFICATION

	High	Moderate	Low	Not Available
Waterfowl/Wildlife				X
Vegetation				X

Source:

Social/Cultural Component: Contribution to Quality of Life

	High	Moderate	Low	Not Available
Existing, Proposed or Potential International/National/Provincial/Regional Heritage Designation or Protected Status (within or adjacent to the protected area)				X

Source:

Stage Two Evaluation Undertaken By:

Name: Scott Burley

Position/Title: Biologist

Organization: AMEC Environment & Infrastructure

Address: 50 Troop Ave. Unit #31
Dartmouth, NS B3B 1Z1

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values Relate to the capacity of the wetland to regulate and maintain essential ecological processes and life-support systems that have value to society	**1.1 Hydrological Values** Value of the wetland in contributing to surface and groundwater stocks.				
	*1.1.1 Does the wetland contribute to recharge of regional water supply aquifers?	NO			
	*1.1.2 Does the wetland provide flood protection benefits?	YES	LOCAL	LOW	Provides flood protection for surrounding forest community
	1.1.3 Does the wetland contribute to usable surface water?	NO			
	1.1.4 Does the wetland provide erosion control?	YES	LOCAL	LOW	Provides erosion control along stream
	1.1.5 Does the wetland provide flow augmentation to users through a headwater position in the catchment basin?	YES	LOCAL	LOW	Wetland located at a high position in the watershed
	*1.1.6 Does the wetland reduce tidal impacts?	NO			
	Hydrological Values Total	Y=3;N=3	L=3	L=3	
	***Critical Values Total**	1			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.2 Biogeochemical Values** Value of the wetland in contributing to surface water and groundwater quality.				
	*1.2.1 Does the wetland receive significant pollution of a type amenable to amelioration by wetlands?	NO			
	1.2.2 Does the wetland provide storage for agricultural run-off?	NO			
	*1.2.3 Does the wetland provide for containment of toxics contained in surface run-off or through discharge flow?	NO			
	1.2.4 Does the wetland provide for sediment flow stabilization?	YES	LOCAL	LOW	Provides sediment flow stabilization for unnamed stream flowing through wetland
	1.2.5 Does the wetland have high nutrient levels which support significant wildlife populations?	NO			
	Biogeochemical Values Total	Y=1; N=5	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.3 Habitat Values** Role of the wetland in contributing to the well-being of important plant and animal values.				
	*1.3.1 Are there any rare, threatened or endangered animal or plant species present?	YES	REGIONAL	HIGH	Regionally rare (ACCDC S2S4, S3S5, S3S4) plant species present in wetland
	*1.3.2 Does the wetland contain high quality significant habitats for migratory birds?	NO			
	1.3.3 Does the wetland provide habitat for sport and/or commercial fish?	NO			
	1.3.4 Does the wetland provide significant habitat for reptiles and amphibians?	POSSIBLE	LOCAL	LOW	May provide habitat for amphibians and reptiles
	1.3.5 Does the wetland provide significant habitat for crustaceans?	NO			
	1.3.6 Does the wetland provide significant habitat for mammals?	POSSIBLE	LOCAL	LOW	May provide marginal habitat for mammals
	*1.3.7 Does the wetland support a significant animal or plant species in unusual abundance?	NO			
	1.3.8 Does the wetland and its associated vegetation protect natural shorelines?	YES	LOCAL	LOW	Protects the natural shoreline surrounding the lakes
	*1.3.9 Is the wetland ranked as a Class I, II, or III wetland by Canada Land Inventory or other accepted evaluation systems?	NO			
	Habitat Values Total	Y=2; P = 2; N = 5	L = 3; R = 1	H=1; L = 3	
	***Critical Values Total**	1			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.4 Ecological Values** Role of the wetland in stimulating relations of plant and animal communities.				
	1.4.1 Does the wetland support an extensive ecosystem complex including uplands?	NO			
	*1.4.2 Has a regional threshold been reached where the significance of wetland ecosystems for the entire region will be compromised by further degradations?	NO			
	*1.4.3 Is the wetland considered a classic example of its type?	NO			
	1.4.4 Are there few remaining natural, unimpacted wetlands of this type in the region?	NO			
	1.4.5 Does the wetland contain, owe its existence to, or is it a part of or ecologically associated with a geological feature which is an excellent representation of its type?	NO			
	1.4.6 Does the wetland form an integral part of an important water drainage system?	NO			
	*1.4.7 Does the wetland display biological diversity that is of interest?	NO			
	Ecological Values Total	N=7			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.1 Aesthetic Values** Role of the wetland in the quality of the scenic environment.				
	2.1.1 Is the wetland visible from a provincial/territorial highway, a designated scenic highway/road or passenger railroad?	NO			
	2.1.2 Does the wetland provide a valuable aesthetic or open space function?	YES	LOCAL	LOW	Adds to the aesthetic quality of the lake
	2.1.3 Does the wetland add substantially to the visual diversity of the landscape?	NO			
	*2.1.4 Is the wetland an important sightseeing locale?	NO			
	Aesthetic Values Total	Y=1; N=3	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.2 Recreational Values** Role of the wetland in stimulating recreation activities.				
	2.2.1 Does the wetland provide a base for viewing or photographing large numbers of wildlife?	NO			
	2.2.2 Does the wetland provide opportunities for boating?	NO			
	2.2.3 Does the wetland provide winter recreation opportunities?	NO			
	2.2.4 Does the wetland provide high quality sport hunting or fishing?	NO			
	Recreational Values Total	N=4			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.3 Education and Public Awareness Values** Role of the wetland in stimulating the public values and understanding.				
	2.3.1 Is the wetland used for scientific research?	NO			
	*2.3.2 Is the wetland used for educational and interpretation purposes?	NO			
	2.3.3 Does the wetland exist close to a large urban population?	YES	LOCAL	LOW	Located close to Labrador City
	2.3.4 Does the wetland receive large numbers of visitors?	NO			
	Education and Public Awareness Values Total	Y=1;N=3	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.4 Public Status Values** Role of the wetland in creating a sense of public ownership				
	2.4.1 Is the wetland part of the pattern of settlement and rural/urban lifestyle?	NO			
	2.4.2 Is the wetland a designated site of special public interest?	NO			
	*2.4.3 Is the wetland a unique national, provincial or regional resource?	NO			
	2.4.4 Are there policies/programs to support conservation/restoration of the wetland?	YES	PROVINCIAL	MODERATE	Water Resources Act, 2002
	2.4.5 Does the wetland provide for easy public access?	NO			
	2.4.6 Is the wetland public land?	NO			
	Public Status Values Total	Y=1, N=5	P=1	M=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.5 Cultural Attribute Values** Role of the wetland in the identity of the people in the area.				
	2.5.1 Does the wetland form part of the historical/cultural heritage of a regional population?	NO			
	*2.5.2.1 Does the wetland contain **known** heritage or archaeological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain heritage or archaeological resources?	POSSIBLE	LOCAL	LOW	Wetland may contain heritage resources
	*2.5.2.1 Does the wetland contain **known** palaeontological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain palaeontological resources?	POSSIBLE	LOCAL	LOW	Paleontological resources may be present
	2.5.3 Is the wetland utilised for cultural events or cultural renewal?	NO			
	*2.5.4.1 Does the wetland form part of a **known** Native traditional use area?	NO			
	2.5.4.2 Does the wetland **potentially** form part of a Native traditional use area?	POSSIBLE	LOCAL	LOW	Wetland may form part of a Native traditional use area.
	Cultural Attribute Values Total	P=3, N=5	L=3	L=3	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.1 Agricultural Values** Role of the wetland in contributing to agricultural production.				
	3.1.1 Does the wetland provide water for livestock?	NO			
	3.1.2 Does the wetland provide a source of forage?	NO			
	*3.1.3 Does the wetland provide a source of water for crop irrigation?	NO			
	3.1.4 Does the wetland serve to reduce topsoil erosion?	NO			
	3.1.5 Does the wetland serve to increase soil moisture and enhance agricultural crop production?	NO			
	Agricultural Values Total	N=5			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.2 Renewable Resource Values** Role of the wetland in contributing to the viability of renewable resource harvest.				
	*3.2.1 Is the wetland used for commercial or subsistence hunting, trapping and fishing?	NO			
	3.2.2 Does the wetland provide opportunities for non-commercial uses of fish, wildlife, crustaceans and/or water resources?	NO			
	3.2.3 Can forest resources of the wetland be harvested?	NO			
	*3.2.4 Are there other commercial uses of the wetland, such as harvesting opportunities for wild rice, cranberries, or gathering crabs and oysters?	NO			
	Renewable Resource Values Total	N=4			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.3 Non-renewable Resource Values** Role of the wetland in contributing non-renewable resources for consumption.				
	*3.3.1 Is the wetland used as a commercial source of peat for horticulture or energy?	NO			
	Non-renewable Resource Values Total	N=1			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.4 Tourism and Recreational Values** Role of the wetland in stimulating tourism and recreation economic benefits.				
	*3.4.1 Does the wetland represent an important local, regional, or provincial tourism or recreation attraction?	NO			
	3.4.2 Does the wetland contribute to the local, regional, or provincial tourism and recreation economy?	NO			
	3.4.3 Does the wetland contribute to national and international tourism development?"	NO			
	Tourism and Recreational Values Total	N=3			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.5 Urban Values** Role of the wetland in contributing to urban economic values.				
	*3.5.1 Is the wetland used to provide water for industry?	NO			
	*3.5.2 Is the wetland used as a means of sewage treatment?	NO			
	*3.5.3 Is the wetland a direct source of domestic water supply?	NO			
	3.5.4 Does the wetland enhance residential, commercial or industrial development values?	NO			
	3.5.5 Does the wetland contribute to urban flood protection and associated land values?	NO			
	Urban Values Total	N=5			
	***Critical Values Total**	0			

Summary of Wetland Values
Significance and Expected Impact

	Are Criteria Present?					Level of Criterion Significance					Expected Impact of Project Upon Wetland Values		
	Yes	Likely	Possible	Unknown	Critical	National	Provincial	Regional	Local	Negligible	High	Moderate	Low
1. Life-support Values													
1.1 Hydrological Values	3				1				3				3
1.2 Biogeochemical Values	1								1				1
1.3 Habitat Values	2		2		1			1	3		1		3
1.4 Ecological Values													
2. Social/Cultural Values													
2.1 Aesthetic Values	1								1				1
2.2 Recreational Values													
2.3 Education and Public Awareness Values	1								1				1
2.4 Public Status Values	1						1					1	
2.5 Cultural Attribute Values			3						3				3
3. Production Values													
3.1 Agricultural Values													
3.2 Renewable Resource Values													
3.3 Non-renewable Resource Values													
3.4 Tourism and Recreational Values													
3.5 Urban Values													
Total Occurrences	9		5		2		1	1	12		1	1	12

Background

Name of Evaluator: Scott Burley

Address: AMEC Environment & Infrastructure, a Division of AMEC Americas Inc.
50 Troop Ave. Unit # 300
Dartmouth, NS. B3B 1Z1

Date: September 19, 2012

Project Description

a. Summary of Project

Name of Project: IOC Mine Expansion Wetland Baseline Studies, Labrador City, Labrador

i. Is it a public or private project? _ Public X Private
ii. Does it require land use approval? __ Yes X No
iii. Where is it located? Wabush 3 Open Pit Mine, Labrador City, Labrador

iv.	**Is it proposed in or near a wetland?**	*X In	_ Near
v.	**Will the wetland be...fully or partially drained?**	*X Fully	_ Partially
	fully or partially dredged?	_ Fully	_ Partially
	completely or partially filled?	*X Fully	_ Partially
	fully or partially dyked?	_ Fully	_ Partially
	fully or partially flooded?	_ Fully	_ Partially
	fully or partially enhanced/restored?	_ Fully	_ Partially
	Other-		

*Note: Wetland was assessed based on the assumption that the entire Study Area will be impacted. Impacts to wetland may change depending on final design plans and actual Project footprint.

b. Type of Activity Proposed

i. X Industrial
ii. _____ Commercial
iii. _____ Residential
iv. _____ Institutional
v. ___ Recreational/Tourism
vi. _____ Agriculture
vii. _____ Transportation/ Utility Corridor
viii. _____ Habitat Development
ix. _____ Forestry
x. _____ Other (described)

xi. Statement of Project Purpose: Iron Ore Canada (IOC) intends to expand their Labrador City iron mining operations to include an open pit mine location at the Wabush 3 Study Area.

xii. Precise Description of Activity

The Project will involve the construction and ongoing operation of an open pit mine within the Study Area. Construction will include clearing and grubbing of vegetation, excavating, blasting and other earthworks as well as the construction of buildings and other infrastructure typically required for an open pit mine operation (Mechanical and maintenance buildings, etc.). It is assumed that the entire Study Area will be impacted during the construction and/or operation of the mine.

vi. Level of Project Understanding/Refinement

_ At very preliminary stage; little or no economic cost/benefit analysis
X Preliminary stage, conceptual drawings, economic cost/benefit analysis, environmental Impact considerations
_ Detailed design; design drawings, cost/benefit analysis (all components), and Environmental Impact Assessment

vii. Potential for Stewardship

Stewardship represents landowner commitment to manage the wetland in society's interests. Does that potential exist for this wetland?

_ Yes
X No
_ Maybe

If yes or maybe, what steps are needed to institute a stewardship program?

c. **i. Summary of Potential Disbenefits**

There are expected problems that may occur because of the project. These potential problems are the preliminary issues that will need to be addressed as part of the project review.

X Noise pollution	X Water drawdown	_ Recreational loss
X Air pollution	X Habitat loss	_ Economic loss
X Water pollution (Sediment)	X Aesthetic loss	X Other (temporary construction effect from noise & dust)

Wetland Description

a. Wetland Location

Province/Territory: Newfoundland and Labrador

Common Place Name (if any): Wabush 3

Nearest Urban Centre: Labrador City, Labrador

Legal Description (if any): N/A

Land Designation:
_ Public
X_ Private
_ Protected Area
_ Other
If public, name of area/site (if any)

If protected, name of agency and status

b. Wetland Context

This provides a brief description of the wetland and preliminary relationship to the project.

i. Wetland Complexity **Size**

Is this a single wetland X Yes __ No 0.41 ha (1.00) acres
Is this a wetland complex* __ Yes X No ____ha ( ) acres

ii. Wetland Class

a) Single Wetland	**b) Wetland Complex**	**c) Wetland Classification**
_ Bog	__ Bog	_ Temporary
X_ Fen	__ Fen	_ Seasonal
_ Swamp (SHRUB)	__ Swamp	X Permanent
_ Marsh	_ Marsh	
_ Shallow Water	_ Shallow Water	

iii. Has this wetland been previously impacted?

X_ Yes _ No

If yes, describe: Dirt road located along northern side may impact hydrology

Wetland Viability

a. Results of Past Effects upon the Wetland

Has the wetland decreased in size during the past five years?
_ Yes
_ No
X Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Is the wetland known to be detrimentally affected by other nearby projects or drainage system changes?
_ Yes
_ No
X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have animal or plant communities been detrimentally impacted by past activity?
_ Yes
_ No
X Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have the wetland hydrological characteristics been detrimentally affected by other nearby activities?
_ Yes
_ No
X Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

b. Wetland Status

Has the wetland been compromised up to or beyond its viability as a functioning wetland?
_ Yes
X No

Have most similar wetland types been lost to conversion in the region?
_ Yes
X No

Stage One "General Analysis"

Biological Component: Importance to Wildlife/Plant Communities

i. Significance for Waterfowl/Wildlife Species

PROVINCIAL/TERRITORIAL
CLASSIFICATION (GOLET SCORE)

	High >80	Moderate 60-80	Low <60	Not Available
Waterfowl/ Wildlife				X

Source:

ii. Rarity/Scarcity or Uniqueness

NATIONAL, OR PROVINCIAL\
TERRITORIAL CLASSIFICATION

	High	Moderate	Low	Not Available
Waterfowl/Wildlife				X
Vegetation				X

Source:

Social/Cultural Component: Contribution to Quality of Life

	High	Moderate	Low	Not Available
Existing, Proposed or Potential International/National/Provincial/Regional Heritage Designation or Protected Status (within or adjacent to the protected area)				X

Source:

Stage Two Evaluation Undertaken By:

Name: Scott Burley

Position/Title: Biologist

Organization: AMEC Environment & Infrastructure

Address: 50 Troop Ave. Unit #31
Dartmouth, NS B3B 1Z1

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values Relate to the capacity of the wetland to regulate and maintain essential ecological processes and life-support systems that have value to society	**1.1 Hydrological Values** Value of the wetland in contributing to surface and groundwater stocks.				
	*1.1.1 Does the wetland contribute to recharge of regional water supply aquifers?	YES	REGIONAL	LOW	Located within watershed of Municipal Water Supply for Labrador City
	*1.1.2 Does the wetland provide flood protection benefits?	YES	LOCAL	LOW	Provides flood protection for surrounding forest community
	1.1.3 Does the wetland contribute to usable surface water?	NO			
	1.1.4 Does the wetland provide erosion control?	YES	LOCAL	LOW	Provides erosion control along stream
	1.1.5 Does the wetland provide flow augmentation to users through a headwater position in the catchment basin?	YES	LOCAL	LOW	Wetland located at a high position in the watershed
	*1.1.6 Does the wetland reduce tidal impacts?	NO			
	Hydrological Values Total	Y=4;N=3	R=1; L=3	L=4	
	***Critical Values Total**	2			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.2 Biogeochemical Values** Value of the wetland in contributing to surface water and groundwater quality.				
	*1.2.1 Does the wetland receive significant pollution of a type amenable to amelioration by wetlands?	NO			
	1.2.2 Does the wetland provide storage for agricultural run-off?	NO			
	*1.2.3 Does the wetland provide for containment of toxics contained in surface run-off or through discharge flow?	YES	LOCAL	LOW	Potentially receives run-off contaminates from dirt road
	1.2.4 Does the wetland provide for sediment flow stabilization?	YES	LOCAL	LOW	Provides sediment flow stabilization for unnamed stream flowing through wetland
	1.2.5 Does the wetland have high nutrient levels which support significant wildlife populations?	NO			
	Biogeochemical Values Total	Y=2; N=3	L=2	L=2	
	***Critical Values Total**	1			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.3 Habitat Values** Role of the wetland in contributing to the well-being of important plant and animal values.				
	*1.3.1 Are there any rare, threatened or endangered animal or plant species present?	YES	REGIONAL	HIGH	Regionally rare (ACCDC S2S4, S3S5) plant species present in wetland
	*1.3.2 Does the wetland contain high quality significant habitats for migratory birds?	NO			
	1.3.3 Does the wetland provide habitat for sport and/or commercial fish?	NO			
	1.3.4 Does the wetland provide significant habitat for reptiles and amphibians?	POSSIBLE	LOCAL	LOW	May provide habitat for amphibians and reptiles
	1.3.5 Does the wetland provide significant habitat for crustaceans?	NO			
	1.3.6 Does the wetland provide significant habitat for mammals?	POSSIBLE	LOCAL	LOW	May provide marginal habitat for mammals
	*1.3.7 Does the wetland support a significant animal or plant species in unusual abundance?	NO			
	1.3.8 Does the wetland and its associated vegetation protect natural shorelines?	NO			
	*1.3.9 Is the wetland ranked as a Class I, II, or III wetland by Canada Land Inventory or other accepted evaluation systems?	NO			
	Habitat Values Total	Y=1; P = 2; N = 6	L = 2; R = 1	H=1; L = 2	
	***Critical Values Total**	1			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.4 Ecological Values** Role of the wetland in stimulating relations of plant and animal communities.				
	1.4.1 Does the wetland support an extensive ecosystem complex including uplands?	NO			
	*1.4.2 Has a regional threshold been reached where the significance of wetland ecosystems for the entire region will be compromised by further degradations?	NO			
	*1.4.3 Is the wetland considered a classic example of its type?	NO			
	1.4.4 Are there few remaining natural, unimpacted wetlands of this type in the region?	NO			
	1.4.5 Does the wetland contain, owe its existence to, or is it a part of or ecologically associated with a geological feature which is an excellent representation of its type?	NO			
	1.4.6 Does the wetland form an integral part of an important water drainage system?	NO			
	*1.4.7 Does the wetland display biological diversity that is of interest?	NO			
	Ecological Values Total	N=7			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.1 Aesthetic Values** Role of the wetland in the quality of the scenic environment.				
	2.1.1 Is the wetland visible from a provincial/territorial highway, a designated scenic highway/road or passenger railroad?	NO			
	2.1.2 Does the wetland provide a valuable aesthetic or open space function?	NO			
	2.1.3 Does the wetland add substantially to the visual diversity of the landscape?	NO			
	*2.1.4 Is the wetland an important sightseeing locale?	NO			
	Aesthetic Values Total	N=4			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.2 Recreational Values** Role of the wetland in stimulating recreation activities.				
	2.2.1 Does the wetland provide a base for viewing or photographing large numbers of wildlife?	NO			
	2.2.2 Does the wetland provide opportunities for boating?	NO			
	2.2.3 Does the wetland provide winter recreation opportunities?	NO			
	2.2.4 Does the wetland provide high quality sport hunting or fishing?	NO			
	Recreational Values Total	N=4			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.3 Education and Public Awareness Values** Role of the wetland in stimulating the public values and understanding.				
	2.3.1 Is the wetland used for scientific research?	NO			
	*2.3.2 Is the wetland used for educational and interpretation purposes?	NO			
	2.3.3 Does the wetland exist close to a large urban population?	YES	LOCAL	LOW	Located close to Labrador City
	2.3.4 Does the wetland receive large numbers of visitors?	NO			
	Education and Public Awareness Values Total	Y=1;N=3	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.4 Public Status Values** Role of the wetland in creating a sense of public ownership				
	2.4.1 Is the wetland part of the pattern of settlement and rural/urban lifestyle?	NO			
	2.4.2 Is the wetland a designated site of special public interest?	NO			
	*2.4.3 Is the wetland a unique national, provincial or regional resource?	NO			
	2.4.4 Are there policies/programs to support conservation/restoration of the wetland?	YES	PROVINCIAL	MODERATE	Water Resources Act, 2002
	2.4.5 Does the wetland provide for easy public access?	NO			
	2.4.6 Is the wetland public land?	NO			
	Public Status Values Total	Y=1, N=5	P=1	M=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.5 Cultural Attribute Values** Role of the wetland in the identity of the people in the area.				
	2.5.1 Does the wetland form part of the historical/cultural heritage of a regional population?	NO			
	*2.5.2.1 Does the wetland contain **known** heritage or archaeological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain heritage or archaeological resources?	POSSIBLE	LOCAL	LOW	Wetland may contain heritage resources
	*2.5.2.1 Does the wetland contain **known** palaeontological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain palaeontological resources?	POSSIBLE	LOCAL	LOW	Paleontological resources may be present
	2.5.3 Is the wetland utilised for cultural events or cultural renewal?	NO			
	*2.5.4.1 Does the wetland form part of a **known** Native traditional use area?	NO			
	2.5.4.2 Does the wetland **potentially** form part of a Native traditional use area?	POSSIBLE	LOCAL	LOW	Wetland may form part of a Native traditional use area.
	Cultural Attribute Values Total	P=3, N=5	L=3	L=3	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.1 Agricultural Values** Role of the wetland in contributing to agricultural production.				
	3.1.1 Does the wetland provide water for livestock?	NO			
	3.1.2 Does the wetland provide a source of forage?	NO			
	*3.1.3 Does the wetland provide a source of water for crop irrigation?	NO			
	3.1.4 Does the wetland serve to reduce topsoil erosion?	NO			
	3.1.5 Does the wetland serve to increase soil moisture and enhance agricultural crop production?	NO			
	Agricultural Values Total	N=5			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.2 Renewable Resource Values** Role of the wetland in contributing to the viability of renewable resource harvest.				
	*3.2.1 Is the wetland used for commercial or subsistence hunting, trapping and fishing?	NO			
	3.2.2 Does the wetland provide opportunities for non-commercial uses of fish, wildlife, crustaceans and/or water resources?	NO			
	3.2.3 Can forest resources of the wetland be harvested?	NO			
	*3.2.4 Are there other commercial uses of the wetland, such as harvesting opportunities for wild rice, cranberries, or gathering crabs and oysters?	NO			
	Renewable Resource Values Total	N=4			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.3 Non-renewable Resource Values** Role of the wetland in contributing non-renewable resources for consumption.				
	*3.3.1 Is the wetland used as a commercial source of peat for horticulture or energy?	NO			
	Non-renewable Resource Values Total	N=1			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.4 Tourism and Recreational Values** Role of the wetland in stimulating tourism and recreation economic benefits.				
	*3.4.1 Does the wetland represent an important local, regional, or provincial tourism or recreation attraction?	NO			
	3.4.2 Does the wetland contribute to the local, regional, or provincial tourism and recreation economy?	NO			
	3.4.3 Does the wetland contribute to national and international tourism development?"	NO			
	Tourism and Recreational Values Total	N=3			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.5 Urban Values** Role of the wetland in contributing to urban economic values.				
	*3.5.1 Is the wetland used to provide water for industry?	NO			
	*3.5.2 Is the wetland used as a means of sewage treatment?	NO			
	*3.5.3 Is the wetland a direct source of domestic water supply?	NO			
	3.5.4 Does the wetland enhance residential, commercial or industrial development values?	NO			
	3.5.5 Does the wetland contribute to urban flood protection and associated land values?	NO			
	Urban Values Total	N=5			
	***Critical Values Total**	0			

Summary of Wetland Values
Significance and Expected Impact

	Are Criteria Present?					Level of Criterion Significance					Expected Impact of Project Upon Wetland Values		
	Yes	Likely	Possible	Unknown	Critical	National	Provincial	Regional	Local	Negligible	High	Moderate	Low
1. Life-support Values													
1.1 Hydrological Values	4				2			1	3				4
1.2 Biogeochemical Values	2				1				2				2
1.3 Habitat Values	1		2		1			1	2		1		2
1.4 Ecological Values													
2. Social/Cultural Values													
2.1 Aesthetic Values													
2.2 Recreational Values													
2.3 Education and Public Awareness Values	1								1				1
2.4 Public Status Values	1						1					1	
2.5 Cultural Attribute Values			3						3				3
3. Production Values													
3.1 Agricultural Values													
3.2 Renewable Resource Values													
3.3 Non-renewable Resource Values													
3.4 Tourism and Recreational Values													
3.5 Urban Values													
Total Occurrences	9		5		4		1	2	11		1	1	12

Background

Name of Evaluator: Scott Burley

Address: AMEC Environment & Infrastructure, a Division of AMEC Americas Inc.
50 Troop Ave. Unit # 300
Dartmouth, NS. B3B 1Z1

Date: September 19, 2012

Project Description

a. Summary of Project

Name of Project: IOC Mine Expansion Wetland Baseline Studies, Labrador City, Labrador

i. Is it a public or private project? _ Public X Private
ii. Does it require land use approval? __ Yes X No
iii. Where is it located? Wabush 3 Open Pit Mine, Labrador City, Labrador

iv.	**Is it proposed in or near a wetland?**	*X In	_ Near
v.	**Will the wetland be...fully or partially drained?**	*X Fully	_ Partially
	fully or partially dredged?	_ Fully	_ Partially
	completely or partially filled?	*X Fully	_ Partially
	fully or partially dyked?	_ Fully	_ Partially
	fully or partially flooded?	_ Fully	_ Partially
	fully or partially enhanced/restored?	_ Fully	_ Partially
	Other-		

*Note: Wetland was assessed based on the assumption that the entire Study Area will be impacted. Impacts to wetland may change depending on final design plans and actual Project footprint.

b. Type of Activity Proposed

i. X Industrial
ii. _____ Commercial
iii. _____ Residential
iv. _____ Institutional
v. ___ Recreational/Tourism
vi. _____ Agriculture
vii. _____ Transportation/ Utility Corridor
viii. _____ Habitat Development
ix. _____ Forestry
x. _____ Other (described)

xi. Statement of Project Purpose: Iron Ore Canada (IOC) intends to expand their Labrador City iron mining operations to include an open pit mine location at the Wabush 3 Study Area.

xii. Precise Description of Activity

The Project will involve the construction and ongoing operation of an open pit mine within the Study Area. Construction will include clearing and grubbing of vegetation, excavating, blasting and other earthworks as well as the construction of buildings and other infrastructure typically required for an open pit mine operation (Mechanical and maintenance buildings, etc.). It is assumed that the entire Study Area will be impacted during the construction and/or operation of the mine.

vi. Level of Project Understanding/Refinement

_ At very preliminary stage; little or no economic cost/benefit analysis
X Preliminary stage, conceptual drawings, economic cost/benefit analysis, environmental Impact considerations
_ Detailed design; design drawings, cost/benefit analysis (all components), and Environmental Impact Assessment

vii. Potential for Stewardship

Stewardship represents landowner commitment to manage the wetland in society's interests. Does that potential exist for this wetland?

_ Yes
X No
_ Maybe

If yes or maybe, what steps are needed to institute a stewardship program?

c. **i. Summary of Potential Disbenefits**

There are expected problems that may occur because of the project. These potential problems are the preliminary issues that will need to be addressed as part of the project review.

X Noise pollution	X Water drawdown	_ Recreational loss
X Air pollution	X Habitat loss	_ Economic loss
X Water pollution (Sediment)	X Aesthetic loss	X Other (temporary construction effect from noise & dust)

Wetland Description

a. Wetland Location

Province/Territory: Newfoundland and Labrador

Common Place Name (if any): Wabush 3

Nearest Urban Centre: Labrador City, Labrador

Legal Description (if any): N/A

Land Designation:
_ Public
X_ Private
_ Protected Area
_ Other
If public, name of area/site (if any)

If protected, name of agency and status

b. Wetland Context

This provides a brief description of the wetland and preliminary relationship to the project.

i. Wetland Complexity **Size**

Is this a single wetland X Yes __ No 1.78 ha (4.39) acres
Is this a wetland complex* __ Yes X No ____ha ( ) acres

ii. Wetland Class

a) Single Wetland	**b) Wetland Complex**	**c) Wetland Classification**
_ Bog	__ Bog	_ Temporary
X_ Fen	__ Fen	_ Seasonal
_ Swamp (SHRUB)	__ Swamp	X Permanent
_ Marsh	_ Marsh	
_ Shallow Water	_ Shallow Water	

iii. Has this wetland been previously impacted?

X_ Yes _ No

If yes, describe: Dirt road located along southern side which may impact hydrology.

Wetland Viability

a. Results of Past Effects upon the Wetland

Has the wetland decreased in size during the past five years?
_ Yes
_ No
_X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Is the wetland known to be detrimentally affected by other nearby projects or drainage system changes?
_ Yes
_ No
X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have animal or plant communities been detrimentally impacted by past activity?
_ Yes
_ No
_X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

Have the wetland hydrological characteristics been detrimentally affected by other nearby activities?
_ Yes
_ No
_X_ Don't know (go to "Stage 1")
If yes, by how much: _ Highly affected
_ Moderately affected
_ Minimally affected

b. Wetland Status

Has the wetland been compromised up to or beyond its viability as a functioning wetland?
_ Yes
_X_ No

Have most similar wetland types been lost to conversion in the region?
_ Yes
_X_ No

Stage One "General Analysis"

Biological Component: Importance to Wildlife/Plant Communities

i. Significance for Waterfowl/Wildlife Species

PROVINCIAL/TERRITORIAL
CLASSIFICATION (GOLET SCORE)

	High >80	Moderate 60-80	Low <60	Not Available
Waterfowl/ Wildlife				X

Source:

ii. Rarity/Scarcity or Uniqueness

NATIONAL, OR PROVINCIAL\
TERRITORIAL CLASSIFICATION

	High	Moderate	Low	Not Available
Waterfowl/Wildlife				X
Vegetation				X

Source:

Social/Cultural Component: Contribution to Quality of Life

	High	Moderate	Low	Not Available
Existing, Proposed or Potential International/National/Provincial/Regional Heritage Designation or Protected Status (within or adjacent to the protected area)				X

Source:

Stage Two Evaluation Undertaken By:

Name: Scott Burley

Position/Title: Biologist

Organization: AMEC Environment & Infrastructure

Address: 50 Troop Ave. Unit #31
Dartmouth, NS B3B 1Z1

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values Relate to the capacity of the wetland to regulate and maintain essential ecological processes and life-support systems that have value to society	**1.1 Hydrological Values** Value of the wetland in contributing to surface and groundwater stocks.				
	*1.1.1 Does the wetland contribute to recharge of regional water supply aquifers?	YES	REGIONAL	LOW	Located within watershed of Municipal Water Supply for Labrador City
	*1.1.2 Does the wetland provide flood protection benefits?	NO			
	1.1.3 Does the wetland contribute to usable surface water?	NO			
	1.1.4 Does the wetland provide erosion control?	NO			
	1.1.5 Does the wetland provide flow augmentation to users through a headwater position in the catchment basin?	YES	LOCAL	LOW	Wetland located at a high position in the watershed
	*1.1.6 Does the wetland reduce tidal impacts?	NO			
	Hydrological Values Total	Y=2;N=4	R=1; L=1	L=1	
	***Critical Values Total**	1			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.2 Biogeochemical Values** Value of the wetland in contributing to surface water and groundwater quality.				
	*1.2.1 Does the wetland receive significant pollution of a type amenable to amelioration by wetlands?	NO			
	1.2.2 Does the wetland provide storage for agricultural run-off?	NO			
	*1.2.3 Does the wetland provide for containment of toxics contained in surface run-off or through discharge flow?	YES	LOCAL	LOW	Potentially receives run-off contaminates from dirt road
	1.2.4 Does the wetland provide for sediment flow stabilization?	YES	LOCAL	LOW	Provides sediment flow stabilization for water flowing along dirt road flowing through wetland
	1.2.5 Does the wetland have high nutrient levels which support significant wildlife populations?	NO			
	Biogeochemical Values Total	Y=2; N=3	L=2	L=2	
	***Critical Values Total**	1			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.3 Habitat Values** Role of the wetland in contributing to the well-being of important plant and animal values.				
	*1.3.1 Are there any rare, threatened or endangered animal or plant species present?	YES	REGIONAL	HIGH	Regionally rare (ACCDC S3S5, S2S4) plant species present in wetland
	*1.3.2 Does the wetland contain high quality significant habitats for migratory birds?	NO			
	1.3.3 Does the wetland provide habitat for sport and/or commercial fish?	NO			
	1.3.4 Does the wetland provide significant habitat for reptiles and amphibians?	POSSIBLE	LOCAL	LOW	May provide habitat for amphibians and reptiles
	1.3.5 Does the wetland provide significant habitat for crustaceans?	NO			
	1.3.6 Does the wetland provide significant habitat for mammals?	POSSIBLE	LOCAL	LOW	May provide marginal habitat for mammals
	*1.3.7 Does the wetland support a significant animal or plant species in unusual abundance?	NO			
	1.3.8 Does the wetland and its associated vegetation protect natural shorelines?	NO			
	*1.3.9 Is the wetland ranked as a Class I, II, or III wetland by Canada Land Inventory or other accepted evaluation systems?	NO			
	Habitat Values Total	Y=1; P = 2; N = 6	L = 2; R = 1	H=1; L = 2	
	***Critical Values Total**	1			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
1. Life-support Values	**1.4 Ecological Values** Role of the wetland in stimulating relations of plant and animal communities.				
	1.4.1 Does the wetland support an extensive ecosystem complex including uplands?	NO			
	*1.4.2 Has a regional threshold been reached where the significance of wetland ecosystems for the entire region will be compromised by further degradations?	NO			
	*1.4.3 Is the wetland considered a classic example of its type?	NO			
	1.4.4 Are there few remaining natural, unimpacted wetlands of this type in the region?	NO			
	1.4.5 Does the wetland contain, owe its existence to, or is it a part of or ecologically associated with a geological feature which is an excellent representation of its type?	NO			
	1.4.6 Does the wetland form an integral part of an important water drainage system?	NO			
	*1.4.7 Does the wetland display biological diversity that is of interest?	NO			
	Ecological Values Total	N=7			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.1 Aesthetic Values** Role of the wetland in the quality of the scenic environment.				
	2.1.1 Is the wetland visible from a provincial/territorial highway, a designated scenic highway/road or passenger railroad?	NO			
	2.1.2 Does the wetland provide a valuable aesthetic or open space function?	YES	LOCAL	LOW	Provides open space function within the forested landscape
	2.1.3 Does the wetland add substantially to the visual diversity of the landscape?	NO			
	*2.1.4 Is the wetland an important sightseeing locale?	NO			
	Aesthetic Values Total	Y=1; N=3	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.2 Recreational Values** Role of the wetland in stimulating recreation activities.				
	2.2.1 Does the wetland provide a base for viewing or photographing large numbers of wildlife?	NO			
	2.2.2 Does the wetland provide opportunities for boating?	NO			
	2.2.3 Does the wetland provide winter recreation opportunities?	NO			
	2.2.4 Does the wetland provide high quality sport hunting or fishing?	NO			
	Recreational Values Total	N=4			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.3 Education and Public Awareness Values** Role of the wetland in stimulating the public values and understanding.				
	2.3.1 Is the wetland used for scientific research?	NO			
	*2.3.2 Is the wetland used for educational and interpretation purposes?	NO			
	2.3.3 Does the wetland exist close to a large urban population?	YES	LOCAL	LOW	Located close to Labrador City
	2.3.4 Does the wetland receive large numbers of visitors?	NO			
	Education and Public Awareness Values Total	Y=1;N=3	L=1	L=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.4 Public Status Values** Role of the wetland in creating a sense of public ownership				
	2.4.1 Is the wetland part of the pattern of settlement and rural/urban lifestyle?	NO			
	2.4.2 Is the wetland a designated site of special public interest?	NO			
	*2.4.3 Is the wetland a unique national, provincial or regional resource?	NO			
	2.4.4 Are there policies/programs to support conservation/restoration of the wetland?	YES	PROVINCIAL	MODERATE	Water Resources Act, 2002
	2.4.5 Does the wetland provide for easy public access?	NO			
	2.4.6 Is the wetland public land?	NO			
	Public Status Values Total	Y=1, N=5	P=1	M=1	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
2. Social/Cultural Values	**2.5 Cultural Attribute Values** Role of the wetland in the identity of the people in the area.				
	2.5.1 Does the wetland form part of the historical/cultural heritage of a regional population?	NO			
	*2.5.2.1 Does the wetland contain **known** heritage or archaeological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain heritage or archaeological resources?	POSSIBLE	LOCAL	LOW	Wetland may contain heritage resources
	*2.5.2.1 Does the wetland contain **known** palaeontological resources?	NO			
	2.5.2.2 Does the wetland **potentially** contain palaeontological resources?	POSSIBLE	LOCAL	LOW	Paleontological resources may be present
	2.5.3 Is the wetland utilised for cultural events or cultural renewal?	NO			
	*2.5.4.1 Does the wetland form part of a **known** Native traditional use area?	NO			
	2.5.4.2 Does the wetland **potentially** form part of a Native traditional use area?	POSSIBLE	LOCAL	LOW	Wetland may form part of a Native traditional use area.
	Cultural Attribute Values Total	P=3, N=5	L=3	L=3	
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.1 Agricultural Values** Role of the wetland in contributing to agricultural production.				
	3.1.1 Does the wetland provide water for livestock?	NO			
	3.1.2 Does the wetland provide a source of forage?	NO			
	*3.1.3 Does the wetland provide a source of water for crop irrigation?	NO			
	3.1.4 Does the wetland serve to reduce topsoil erosion?	NO			
	3.1.5 Does the wetland serve to increase soil moisture and enhance agricultural crop production?	NO			
	Agricultural Values Total	N=5			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.2 Renewable Resource Values** Role of the wetland in contributing to the viability of renewable resource harvest.				
	*3.2.1 Is the wetland used for commercial or subsistence hunting, trapping and fishing?	NO			
	3.2.2 Does the wetland provide opportunities for non-commercial uses of fish, wildlife, crustaceans and/or water resources?	NO			
	3.2.3 Can forest resources of the wetland be harvested?	NO			
	*3.2.4 Are there other commercial uses of the wetland, such as harvesting opportunities for wild rice, cranberries, or gathering crabs and oysters?	NO			
	Renewable Resource Values Total	N=4			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.3 Non-renewable Resource Values** Role of the wetland in contributing non-renewable resources for consumption.				
	*3.3.1 Is the wetland used as a commercial source of peat for horticulture or energy?	NO			
	Non-renewable Resource Values Total	N=1			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.4 Tourism and Recreational Values** Role of the wetland in stimulating tourism and recreation economic benefits.				
	*3.4.1 Does the wetland represent an important local, regional, or provincial tourism or recreation attraction?	NO			
	3.4.2 Does the wetland contribute to the local, regional, or provincial tourism and recreation economy?	NO			
	3.4.3 Does the wetland contribute to national and international tourism development?"	NO			
	Tourism and Recreational Values Total	N=3			
	***Critical Values Total**	0			

Wetland Values Type	Evaluation Criteria	Are Criteria Present?	Level of Criterion Significance	Expected Impact of Project Upon Wetland Values	Describe Function
3. Wetland Production Values	**3.5 Urban Values** Role of the wetland in contributing to urban economic values.				
	*3.5.1 Is the wetland used to provide water for industry?	NO			
	*3.5.2 Is the wetland used as a means of sewage treatment?	NO			
	*3.5.3 Is the wetland a direct source of domestic water supply?	NO			
	3.5.4 Does the wetland enhance residential, commercial or industrial development values?	NO			
	3.5.5 Does the wetland contribute to urban flood protection and associated land values?	NO			
	Urban Values Total	N=5			
	***Critical Values Total**	0			

Summary of Wetland Values
Significance and Expected Impact

	Are Criteria Present?					Level of Criterion Significance					Expected Impact of Project Upon Wetland Values		
	Yes	Likely	Possible	Unknown	Critical	National	Provincial	Regional	Local	Negligible	High	Moderate	Low
1. Life-support Values													
1.1 Hydrological Values	2				1			1	1				2
1.2 Biogeochemical Values	2				1				2				2
1.3 Habitat Values	1		2		1			1	2		1		2
1.4 Ecological Values													
2. Social/Cultural Values													
2.1 Aesthetic Values	1								1				1
2.2 Recreational Values													
2.3 Education and Public Awareness Values	1								1				1
2.4 Public Status Values	1						1					1	
2.5 Cultural Attribute Values			3						3				3
3. Production Values													
3.1 Agricultural Values													
3.2 Renewable Resource Values													
3.3 Non-renewable Resource Values													
3.4 Tourism and Recreational Values													
3.5 Urban Values													
Total Occurrences	8		5		3		1	2	10		1	1	11