Annexe XX

Inventaire des milieux humides

(Hatch, 2019)

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Report

Wetlands Survey of Lake Moblan Site

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			HATCH		Functional Manager	Client

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Sommaire exécutif

INVENTAIRE DES MILIEUX HUMIDES DU SITE DU LAC MOBLAN
Rapports d'inventaire biologique Moblan Lithium

CONTEXTE

Le présent rapport concerne l'inventaire des milieux humides qui faisait partie des activités du deuxième inventaire terrestre au site du Lac Moblan, qui s'est déroulé du 21 au 27 août 2018. L'inventaire visait à identifier et délimiter les milieux humides dans l'empreinte du projet d'exploitation minière. Les conclusions de ce rapport serviront à l'étude d'impact sur l'environnement.

MÉTHODOLOGIE

Pour identifier et délimiter les zones humides, Hatch a mené une analyse documentaire des images satellites du site. Ces images ont été comparées à la fois à la couche cartographique de milieux humides potentiels des données ouvertes du gouvernement et aux rapports de reconnaissance du site effectués par Golder. Sur la base de ces sources, l'équipe a identifié plusieurs zones du site où des milieux humides sont susceptibles de se trouver, a évalué leur taille, leurs limites et les schémas de drainage. Ces sites ont été explorés lors d'une première enquête de reconnaissance menée du 4 au 12 juillet 2018.

Le relevé de reconnaissance a identifié plusieurs zones humides cartographiables (> 0,05 ha) et quelques zones humides riveraines plus petites associées à des cours d'eau intermittents et permanents et à des zones basses peu drainées. La taille et la forme des milieux humides étaient en accord avec celles identifiées sur la couche de terres humides provinciale. Au cours de l'enquête sur le terrain d'août 2018, l'équipe s'est concentrée sur la classification et la délimitation des limites des plus grands milieux humides situés dans l'empreinte du projet et à proximité de celle-ci, en utilisant la démarche décrite dans le protocole *Identification et délimitation des milieux humides du Québec méridional* (Bazoge, Lachance, & Villeneuve, 2015).

RÉSULTATS ET CONCLUSIONS

L'analyse documentaire a déterminé que les milieux humides couvrent environ 14,52 ha, soit un peu plus de 1% du site. L'équipe a étudié les trois grands milieux humides situés à proximité de l'empreinte du projet. Ces milieux humides ont été identifiés comme Milieu humide #1, Milieu humide #2 et Milieu humide #3 (Figure 3-1).

- Le Milieu humide #1 est un marécage arbustif d'une superficie de 0,8 ha entourant l'Étang sans nom #1.

- Le Milieu humide #2 est un complexe d'une superficie totale de 2,29 ha composé de l'Étang sans nom #2 (ancien étang de castors) et d'un marais.
- Le Milieu humide #3 est un complexe d'une superficie totale de 1,75 ha comprenant une tourbière ombrotrophe divisée en deux bras, un marais et d'un étang (ancien étang de castor).
- Tous les types de milieux humides sont typiques dans la région et aucune espèce de plante ou d'animal en péril n'ont été observés dans ces milieux humides.

Ces constatations fourniront de l'information pour compléter le processus d'évaluation environnementale provincial.

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1. Introduction

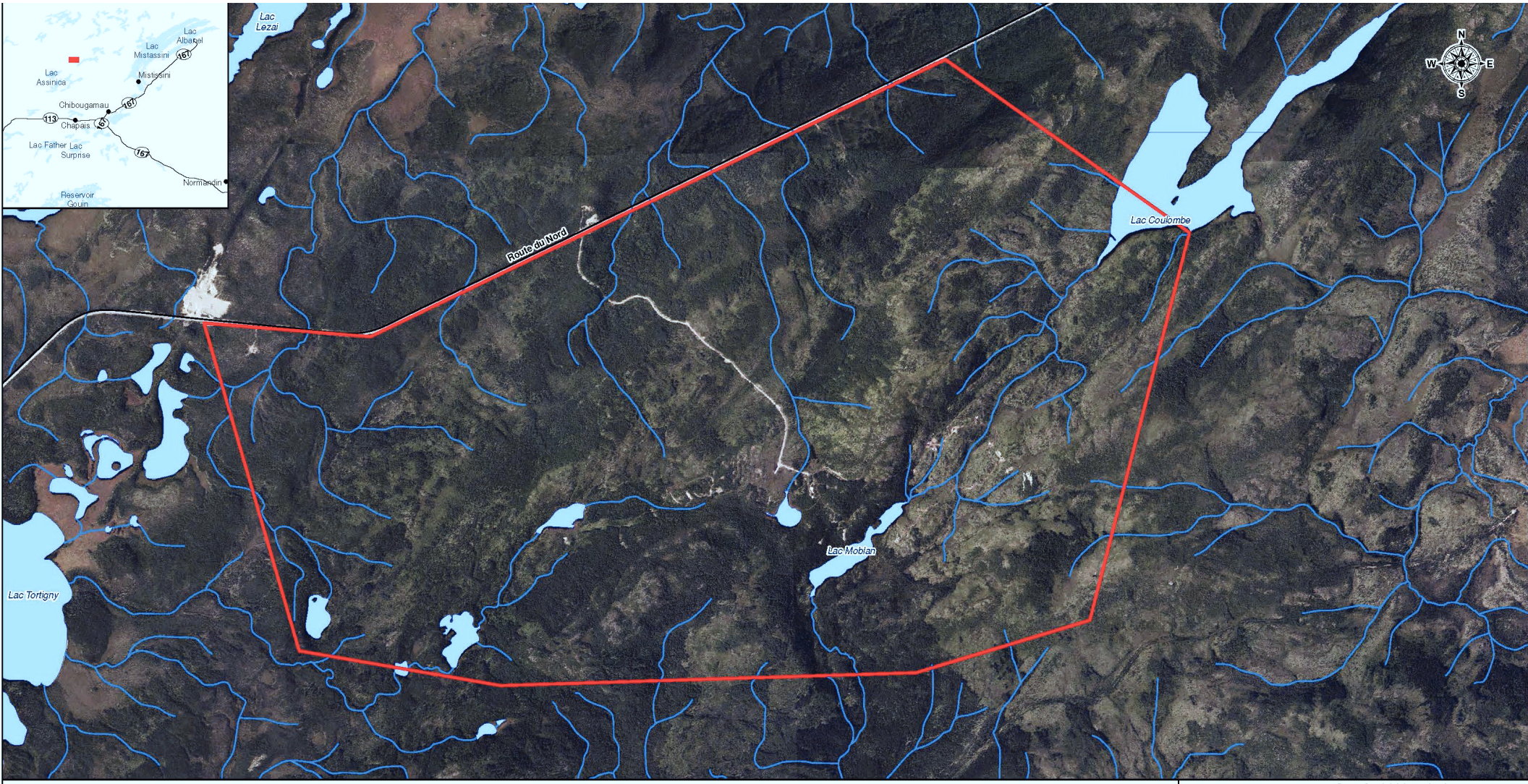
Guo Ao Lithium Ltd. (hereinafter referred to as "the Client") intends to construct a lithium-ore mine and concentrator plant at its Lake Moblan site (hereinafter referred to as "the Site"), located approximately 100 kilometres north of Chibougamau, Quebec. The Site covers approximately 1178 ha (Figure 1-1) with a centroid located at UTM (NAD-83) 18N 506620.60 m E and 5620503.70 m N.

To begin construction and mining activities, the Client needs to prepare an Environmental Impact Assessment (EIA) study to the Ministry of *Développement Durable, Environnement et Lutte contre les Changements Climatiques* (MDDELCC), which translates to *Sustainable Development, Environment and the Fight Against Climate Change.*

Hatch Ltd. has been retained by the Client to prepare this EIA report by the end of the year 2018 in a three-phase approach:

1. **Phase 1 - Gap Analysis:** Hatch Engineering and Environmental Services team reviewed all relevant materials to understand the current state of knowledge and identify the missing information required to produce an EIA report. A gap analysis report was prepared by Hatch and submitted to Guo Ao Lithium in June 2018. The analysis concluded that previous environmental reports from Golder Associates provided only a high-level assessment of the Site's environment and further biological surveys, inventories and ecological assessments were required to meet the requirements of an EIA.
2. **Phase 2 - Spring/Summer Biological Site Surveys**: In summer 2018, Hatch conducted numerous environmental and biological inventories and assessments to gather baseline data on the Site's environmental and biological characteristics (Table 1-1). Hatch followed industry accepted protocols to delineate and characterize wetlands, classify ecosites, characterize fish habitat and assess populations of amphibians, reptiles, birds and mammals.
3. **Phase 3 - Full EIA Study:** to fulfill the requirements of an EIA, Hatch recognizes that additional environmental monitoring and studies, such as surface and ground water characterization, soil and geotechnical characterization and archeological studies are required. This work is ongoing and will be completed by the end of 2018 for submission of the EIA report to the MDDELCC by early 2019.

The present report concerns the wetlands survey that was part of the activities of Phase 2 – Spring/Summer Biological Site Surveys. It contains the methodologies used for the field surveys conducted in late summer, the observations and a conclusion. The findings of this report will inform Phase 3 – Full EIA Study.



Legend

- Study Area
- Road
- Stream
- Lake

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3. Spatial referencing NAD 83 UTM Zone 18
4. Imagery Source - Donneés Québec, 2013.

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Figure1-1 : Project Study Area

Project :	Guo Ao Lithium Ltd. Moblan Lithium Project		
Figure Title :	Study Area		
Date :	September 13 2018		
Version :	1	**Reviewed By :**	PA / MCP
Figure :	1-1	**Page :**	1 of 1
Prepared By :	HATCH		

Table 1-1: Timing and scope of biological field surveys at the Guo Li site.

Survey	Scope	Dates
Terrestrial Survey 1	Vegetation, birds, amphibians, reptiles	July 4-12 2018
Aquatic Survey	Fish & fish habitat	August 10-16, 2018
Terrestrial Survey 2	Micromammals, **wetlands**	**August 21-27, 2018**
Water Sample Collection	Water quality	Conducted during Aquatic Survey trip

2. Methods

2.1 Study Area

The study area is situated in Québec's boreal forest zone, in the western part of the spruce-moss forest domain and within the mid-boreal wetland region of Canada (National Wetlands Working Group 1988). Common wetlands within the region include bogs and fens. Coniferous swamps on shallow peat are locally common. Marshes are generally restricted to lacustrine and riverine systems.

The major forest types on the Site include jack pine (*Pinus banksiana*), black spruce (*Picea mariana*) and mixed conifer. A considerable amount of the site has an anthropogenic history related to logging and disturbance which has resulted in shrubby non-forested habitat. There are two lakes, several large ponds, marsh, swamp and fen wetlands and, several intermittent and permanent streams. Elevations on the Site range between 370 and 570m.

2.2 Desktop Analysis of Wetlands

To identify wetlands and delineate their boundaries Hatch conducted a desktop analysis of satellite imagery of the Site at multiple scales of 1:10,000 to 1: 2,000. This imagery was compared to both the MELCC's "potential wetland" map layer, and the reconnaissance reports of the Site by Golder. Based on these sources, the team identified several areas on the Site with suspected wetlands, assessed their size, boundaries and drainage patterns. These sites were investigated during an initial reconnaissance survey conducted from July 4th to 12th, 2018.

2.3 Field Work

The reconnaissance survey identified several mappable wetlands (>0.05 ha) and some smaller riparian wetlands associated with intermittent and permanent streams and low-lying areas with poor drainage. The size and shape of the wetlands were in general agreement with those identified on the provincial wetland layer. During the August 2018 field survey, the team focused on the classification and boundary delineation of the larger wetlands on and near the project footprint and identified on the Quebec wetland layer.

Wetlands were classified following the criteria of the Canadian Wetland Classification System (National Wetlands Working Group, 1997). Boundary delineation followed the MDDELCC's

standardized protocol, *Identification et délimitation des milieux humides du Québec meridional* (Bagoze et al. 2018) which translates to *Identification and Delineation of Wetlands in Southern Quebec*. The protocol uses vegetation, soil and indicators of hydric conditions to determine whether a sampling station is or is not located within a wetland.

The protocol is effective for sites in southern Quebec, however, more northern wetlands such as those at Lac Moblan require the professional judgment of a wetland biologist when interpreting whether a sampling station is within a wetland because some indicator species are commonly found in non-hydric habitats in northern conditions (Quinty, 2017). For example, Black spruce (*Picea mariana*) and Labrador tea (*Rhododendron groenlandicum*) were noted but not tallied as wetland indicator species in the dominance test since they are commonly found throughout the study area across a wide moisture gradient and therefore not specifically indicative of wetlands. Soil criteria can also be misleading due to the low biological productivity in northern areas (Quinty, 2017). The team therefore followed the protocol of Bazoge et al. (2015) for data collection but used their critical judgment and experience when interpreting results, as recommended by the MDDELCC.

The protocol calls for sampling stations to be established along transects situated perpendicular and crossing through the suspected wetland boundaries.

Typically, the team established three sampling stations along the transects, one in obvious wetland conditions, one in suspected terrestrial conditions and one at the suspected wetland boundary. A station was recognized to be in a wetland when it was dominated by hydrophytic vegetation or had a hydric soil. The team sampled vegetation and soil characteristics from 14 stations at three different wetlands complexes (Figure 3-1). To identify these conditions the team collected the following information:

- General information: station number, date, surveyors, etc.
- Description of site: topography and signs of disturbance
- Hydrology: surface water, hydrological link, and hydrological indicators
- Vegetation analysis: plant species survey, percentage of coverage by species for each stratum (tree layer, shrub layer, herbaceous)
- Soil analysis: soil profile description, organic horizon and level of decomposition, depth of rock, presence of mottles or gley, depth of underwater table.

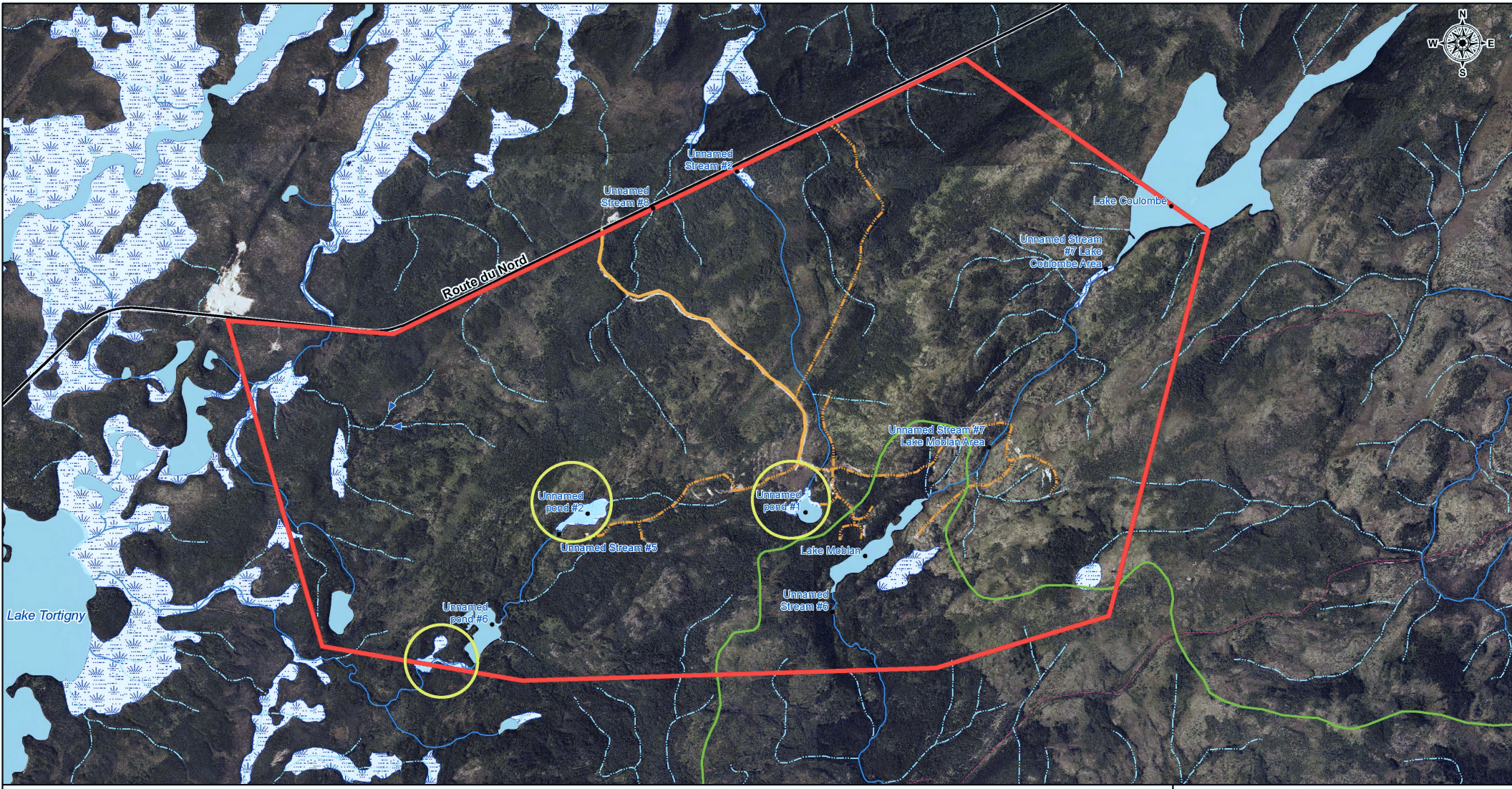
The following equipment was used during the surveys:

- Handheld GPS unit
- Shovel
- Munsell Soil Color Charts
- Tape measure
- Knife

- Bottle of water
- Flagging tape
- Magnifying glass

3. Observations

The desktop analysis determined that wetlands cover approximately 14.52 ha or slightly over 1% of the Site. Of this, the team investigated the three large wetlands on or adjacent to the project footprint. These wetlands were identified as Wetland 1, Wetland 2 and Wetland 3 (Figure 3-1).



Legend

- Study Area
- Watershed

Infrastructure

- Road
- Access road
- Trails

Hydrography

- Stream
- Intermittent stream
- Lake
- Wetland
- Wetlands assesed during the survey

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3. Imagery Source - Données Québec, 2013.

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Figure 3-1: Biophysical Components of the Study Area

Project:	Lithium Guo Ao Ltée		
Figure Title:	Biophysical components of the study area		
Date:	November 1, 2018		
Version:	0	**Reviewed By:**	TK/SP
Figure:	1	**Page:**	
Prepared By:	HATCH		

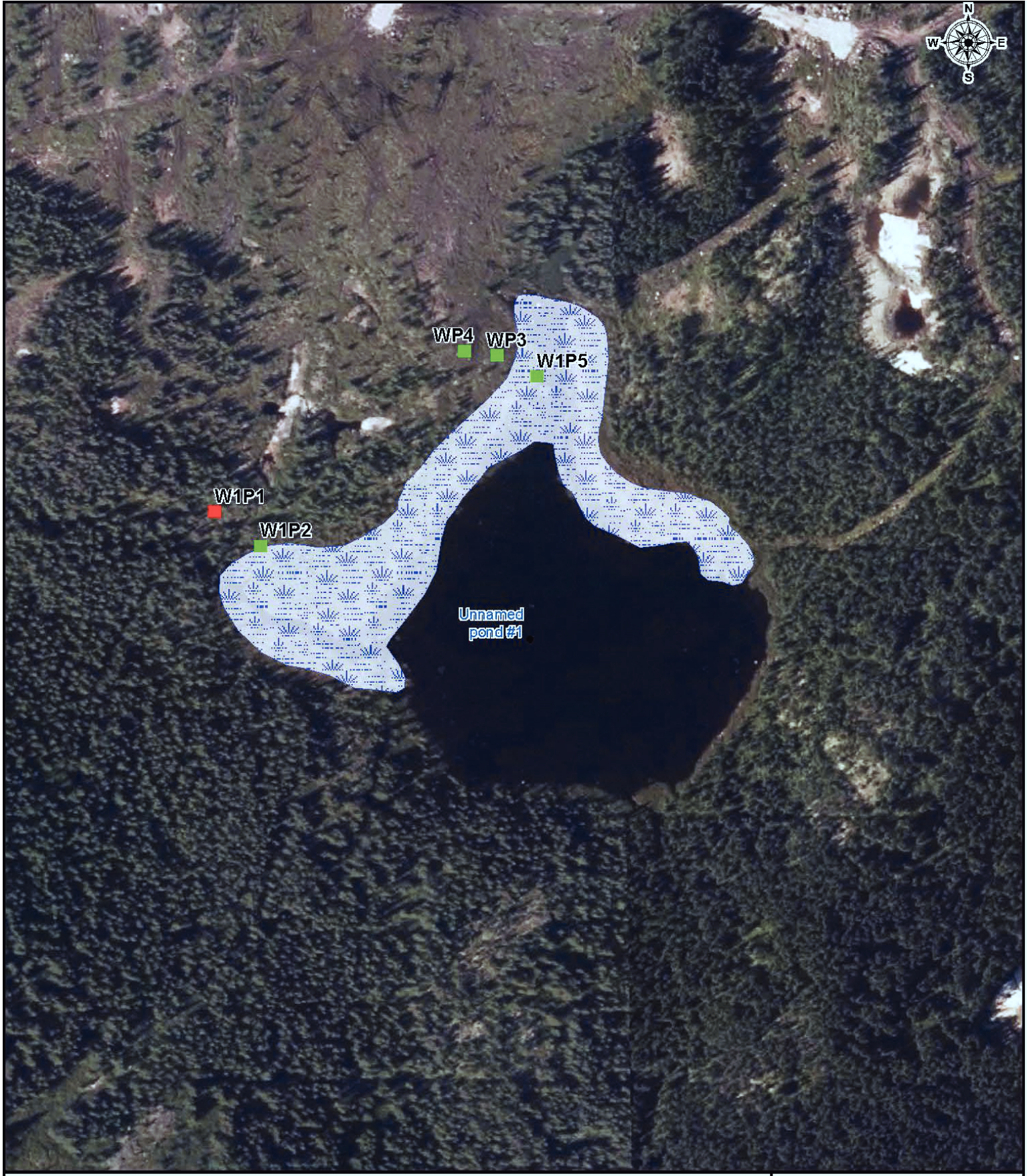
Wetland 1 is a 0.8 ha organic lacustrine shrub swamp surrounding the northern half of Unnamed Pond #1 (Figure 3-2). The pond is approximately 1.35 ha in size. Steep topography along the southern portion of the pond prevents the formation of wetlands along that portion of the shoreline. The shrub swamp ranged in width from several metres to approximately 40 m. The boundary of the swamp is abrupt on the pond side due to a substantial change in water depth, giving way to aquatic conditions. On the landward side, the boundary follows the edge of a shrub community composed primarily of leatherleaf (*Cassandra calyculata*) and sweet gale (*Myrica gale*). Elevation at the wetland boundary on the landward side increased by approximately 0.5 m from wetland to terrestrial communities although similar shrub species were found on either side of the delineated boundary and found at elevations several metres above the delineated boundary. A small (<<0.5 ha) emergent marsh community exists within the north-east section of the largest shrub swamp. The most common species in the herbaceous layer were sedges (*Carex sp.*), common brown peat moss (*Sphagnum fuscum*) and cloudberry (*Rubus chamaemorus*) Black spruce was dominant along the periphery of much of the wetland.

Figure 3-2- Photograph of Wetland 1, an organic lacustrine shrub swamp surrounding the northern half of Unnamed Pond #1

Five stations along two transects were established to assess the wetland boundary along the northern edge of the wetland. At each station, characteristics of vegetation and soils were assessed to determine hydric conditions (Table 3.1). Stations at the suspected wetland boundary (W1P2) and (W1P3) displayed hydric vegetation characteristics and hydric soils, 60 cm mesisols with a moisture regime of moderately wet (7). Station W1P5, within the wetland displayed hydric indicators in the vegetation and soil, with organic fibrosols approximately 60 cm over mineral substrate again with a moisture regime of moderately wet (7). Suspected

terrestrial stations (W1P1 and W1P4) returned mixed results. Both stations had shallow (≤20 cm) organic soils over bedrock with W1P1 displaying terrestrial vegetation conditions and W1P4 wetland vegetation conditions.

Most of the delineated boundary of Wetland 1 follows the edge of the wetland shrub community which is approximately 50 cm lower than the adjacent upland vegetation (Fig. 3.3). The more gradual topography at the west end extended the wetland into the adjacent black spruce community and to the east the boundary follows the edge of an emergent marsh.



Legend

Wetland

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3. Imagery Source - Données Québec, 2013.

0 25 50 100 m

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Figure 3-3- Boundary of Wetland #1

Project:	Lithium Guo Ao Ltée
Figure Title:	Unnamed pond #1
Date:	November 08, 2018
Version: 0	**Reviewed By:** TK/SP
Figure:	**Page:**
Prepared By:	HATCH

Wetland 2 is a shallow open water/marsh complex that has developed as a consequence of the natural succession of an abandoned beaver pond (Figure 3-4). The entire system in its present condition is considered wetland under the Canadian Wetland Classification system.

Historically, the beaver pond at its highest appears to have covered approximately 1.83 ha but is now much smaller and shallower. Water level in the wetland is regulated by an abandoned beaver dam at the west end of the pond. The dam has begun to deteriorate which has resulted in the lowering of the water level in the open water pond and the formation of a narrow-leaved emergent marsh around the periphery.

Most of the pond at the time of surveying was < 1m deep and supported submergent and floating leaved wetland vegetation such as yellow pond lily (*Nuphar lutea*) and floating leaf burred (*Sparganium fluctuans*). The mudflats were colonized primarily by narrow leaved emergents such as dense cotton grass (*Eriophorum vaginatum*), ticklegrass (*Agrostis scabra*) and short-caudate rush (*Juncus brevicaudatus*). Round-leaved sundew (*Drosera rotundifolia*) was also common on the mudflats.

Figure 3-4- Photograph of Wetland 2, an open water/marsh wetland formed by beaver activity

Six sampling stations along two transects were established at Wetland 2 to delineate the boundary (Table 3.2).

All stations exhibited wetland vegetation characteristics. The suspected terrestrial stations (W2P3 and W2P6) both showed evidence of near hydric soil conditions (W2P3: clay loam with gley at 20 cm, moisture regime very moist (6); W2P6: 26 cm of fibric peat over bedrock). Soils depths within the mudflats varied depending on the bedrock depth. Soils at stations

W2P1 and W2P4 on the mudflats were of mineral origin (sandy clay, clay loam and loamy sand) with moisture regimes of very moist (6) and fresh (2). Sampling stations along the suspected wetland boundary (W2P2 and W2P5) were mineral with hydric indicators, exhibiting moisture regimes of very moist (6) which one would expect at the wetland boundary.

The delineated wetland boundary (Figure 3-5) follows the border between the mudflats and a narrow ring of a leatherleaf dominated shrub community where there is an approximately 50 cm rise in elevation. This shrub community quickly transitions into a jack pine black spruce forest around most of the periphery.

Legend

Wetland

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3. Imagery Source - Données Québec, 2013.

0 25 50 100 m

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Figure 3-5-Boundary of Wetland #2

Project:	Lithium Guo Ao Ltée
Figure Title:	Unnamed pond #2
Date:	November 08, 2018
Version: 0	**Reviewed By:** TK/SP
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Prepared By:	HATCH

Wetland 3 is a shrub fen/marsh complex, consisting of a northern arm, southern arm and an open water marsh complex to the west. The wetland is a minerogenous hydrological system situated at a position in the landscape lower than adjacent mineral terrain. The southern arm and marsh complex are hydrologically connected and littogenous, receiving westward flowing water from the outflow of Unnamed Pond #6, whereas the northern arm is primarily terrigenous, receiving surface water from the adjacent terrain. Both arms of the wetland are shrub fens that transition into an emergent marsh/beaver pond complex.

The southern shrub fen is dominated by leatherleaf (*Chamaedaphne calyculata*), speckled alder (*Alnus incana ssp. rugosa*), sweet gale (*Myrica gale*) and low sweet blueberry (*Vaccinium angustifolium*). The trees along the edges are predominantly black spruce (*Picea mariana*), tamarack (*Larix laricina*) and jack pine (*Pinus banksiana*). The ground is covered in sphagnum moss (*Sphagnum sp.*) and a sparse showing of herbaceous species such as Canada bluejoint (*Calmagrostis canadensis*), asters and sedges (Figure 3-6).

Figure 3-6- Photograph of the southern arm of Wetland 3, showing the shrub fen community and the stream

The northern shrub fen is sparsely treed with black spruce (*Picea mariana*) and jack pine (*Pinus banksiana*). The predominant shrub layer contains sweet gale (*Myrica gale*), leatherleaf (*Chamaedaphne calyculata*) and sheep laurel (*Kalmia angustifolia*). The herbaceous/ground layer includes clubmoss, woolgrass (*Scripus cyperinus*), common ground peat moss (*Sphagnum fuscum*) and feather moss (*Hyne plumeuse*) (Figure 3-7).

Figure 3-7- Photograph of the northern arm of Wetland 3.

Both arms of the fen transition into the beaver pond wetland. Seasonally low water level has resulted in exposed mudflats over much of the eastern half of the pond which have been colonized by such species as black-girdled woolgrass (*Scirpus atrocinctus*), star sedge (*Cared radiata*), jointed rush (*Juncus articulates*) and northern long sedge (*Carex folliculate,*Figure 3-8).

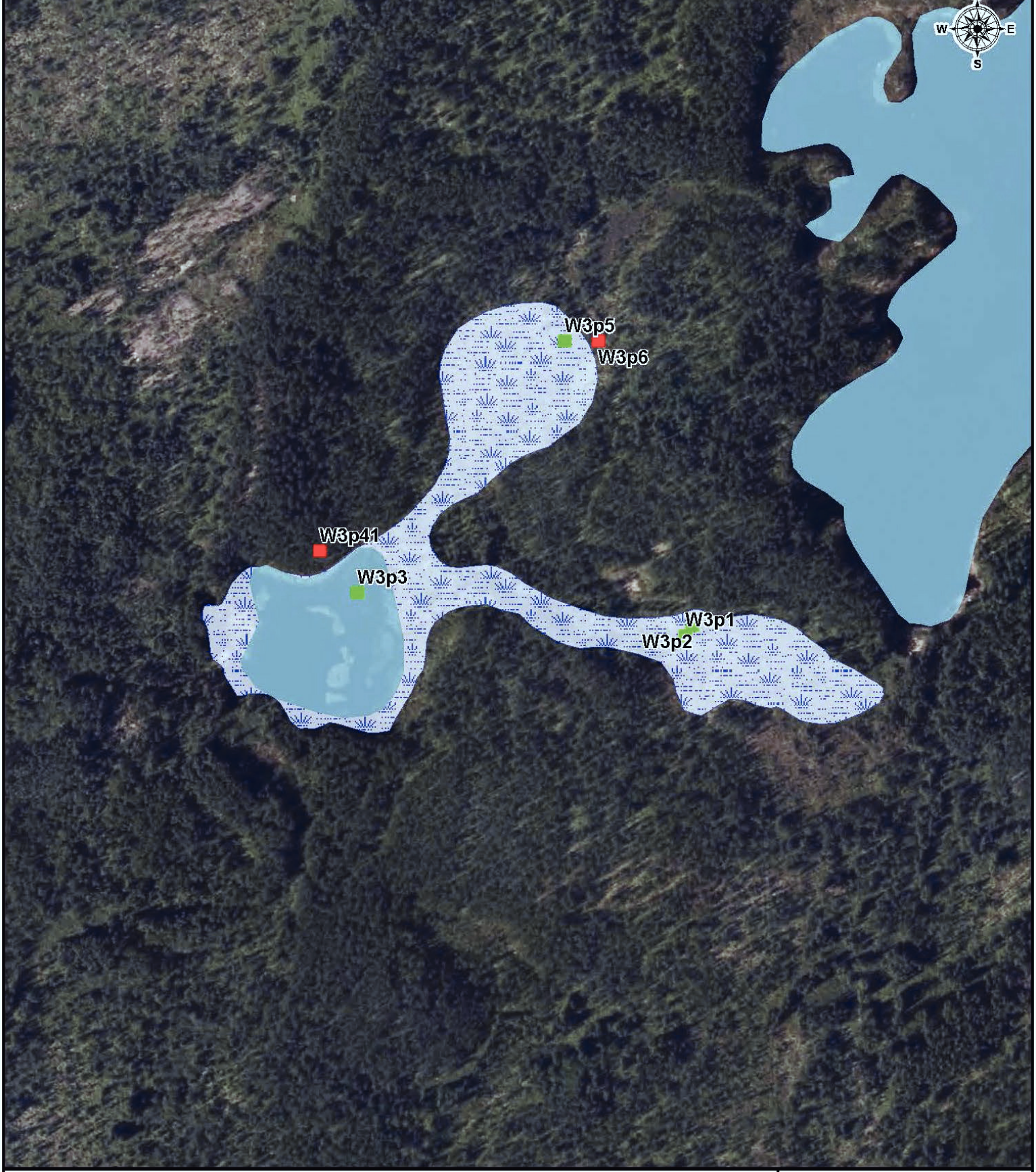
Figure 3-8- Photograph from taken from the eastern end of the Wetland 3 marsh, showing the narrow-leaved emergent marsh community. The abandoned beaver dam is in the background.

Six sampling stations, two at each section of the wetland were established to delineate the boundary (Table 3.3).

Both stations in the southern fen (W3P1 and W3P2) exhibited hydric wetland vegetation. However, soils from the terrestrial station (W3P2) were mineral (sandy clay loam) with a shallow layer (25 cm) or peat with a moisture regime of moderately dry (0). The station (W3P1) exhibited a deep (> 1m) organic mesisol, with a moisture regime of wet (8). Similarly, the northern fen terrestrial station exhibited a shallow (15 cm) organic layer over sandy loam, and the wetland site exhibited a well-developed humisol greater than 1 m in depth with a similar moisture regime of wet (8).

Wetland and terrestrial sites at the open water/marsh complex were sampled at stations W3P3 and W3P4 respectively. The wetland site possessed hydrophytic vegetation, however, the soil was a clay loam with non-hydric indicators (soil moisture regime fresh,2), typical of a more recently flooded and dewatered terrestrial system. Soils around the marsh were very shallow with a thin, (5 cm) mesic organic layer over the bedrock.

The delineated wetland boundary of Wetland 3 (Figure 3-9) follows the landward side of the shrub vegetation community which coincides with an approximately 50 cm increase in elevation. The delineated boundary for the open/water marsh complex follows the contours of historic flooding which has given rise to hydrophytic vegetation.



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Wetland

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Project:	Lithium Guo Ao Ltée
Figure Title:	Unnamed pond #2
Date:	November 08, 2018
Version: 0	**Reviewed By:** TK/SP
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Prepared By:	HATCH

Figure 3-9: Boundary of Wetland #3

4. Conclusion

Three wetland systems on or adjacent to the project footprint were classified and delineated.

- Wetland 1 is a lacustrine swamp surrounding Unnamed pond #1. The surface area of this wetland is 0.8 ha.
- Wetland 2 is a complex composed of an open water pond (former beaver pond) and a narrow-leaved emergent marsh. The total surface area of this wetland complex is 2.29 ha.
- Wetland 3 is a complex of two shrub fens and an open water pond/emergent marsh. The total surface area of this wetland complex is 1.75 ha.
- All wetland types are common in the region and no species at risk plants were observed or species at risk animals seen using these wetlands.
- These findings will provide information to complete the provincial environmental assessment process.

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Appendix A

SUMMARY SHEETS

Table 4-1 - Dominant Plant Species by Vegetation Layer, Hydric Status and Soil Characteristics □Wetland #1

Sampling station	Dominant Plant Species (> 50 % relative coverage/veg. layer)						Hydrophyte dominant vegetation (Y/N)	Hydromorphic Soil (Y/N)	Wetland (Y/N)
	Trees	Hydric status	Shrubs/Regeneration	Hydric status	Herbaceous	Hydric status			
W1P1	Black spruce (*Picea mariana*)	FACH	Leatherleaf (*Chamaedaphne calyculata*) Lowsweet blueberry (*Vaccinium angustifolium*)	OBL NI	Bunchberry (*Cornus canadensis*)	NI	N	N	N
W1P2	Black spruce (*Picea mariana*)	FACH	Leatherleaf (*Chamaedaphne calyculata*) Sweet gale (*Myrica gale*)	OBL OBL	Cloudberry (*Rubus chamaemorus*) Coral lichen (*Cladia retipora*) Carex sp. (*Carex sp.*) Reindeer lichen (*Cladonia rangiferina*)	FACH - - -	Y	Y	Y
W1P3	Black spruce (*Picea mariana*)	FACH	Sweet gale (*Myrica gale*) Leatherleaf (*Chamaedaphne calyculata*)	OBL OBL	Cloudberry (*Rubus chamaemorus*) Carex sp. (*Carex sp.*) Reindeer lichen (*Cladonia rangiferina*)	FACH - -	Y	Y	Y
W1P4	Black spruce (*Picea mariana*)	FACH	Leatherleaf (*Chamaedaphne calyculata*) Sheep laurel (*Kalmia augustifolia*)	OBL NI	Sedge sp. (*Sedge sp.*) Common brown peat moss (*Sphagnum fuscum*)	- FACH	Y	N	Y
W1P5	N/A	N/A	Sweet gale (*Myrica gale*) Leatherleaf (*Chamaedaphne calyculata*)	OBL OBL	Sphagnum sp. (*Sphagnum sp.*) Carex sp. (*Carex sp.*)	FACH -	Y	Y	Y

Table 4-2 - Dominant Plant Species by Vegetation Layer, Hydric Status and Soil Characteristics □Wetland #2

Sampling station	Dominant Plant Specie (> 50 % relative coverage/veg. layer)						Hydrophyte dominant vegetation (Y/N)	Hydromorphic Soil (Y/N)	Wetland (Y/N)
	Trees	Hydric status	Shrubs/Regeneration	Hydric status	Herbaceous	Hydric status			
W2P1	N/A	N/A	Sweet gale (*Myrica gale*)	OBL	Ticklegrass (*Agrostis scabra*) Short-caudate rush (*Juncus brevicaudatus*) Dense cotton-grass (*Eriophorum sp.*)	- OBL OBL	Y	Y	Y
W2P2	Black spruce *(Picea mariana)*	FACH	Leatherleaf (*Chamaedaphne calyculata*)	OBL	Ticklegrass (*Agrostis scabra*) Short-caudate rush (*Juncus brevicaudatus*)	- OBL	Y	Y	Y
W2P3	Black spruce *(Picea mariana)*	FACH	Leatherleaf (*Chamaedaphne calyculata*)	OBL	Common brown peat moss (*Sphagnum fuscum*) Sphagum sp. (*Sphagnum sp.*)	FACH FACH	Y	Y	Y
W2P4	N/A	N/A	N/A	N/A	Ticklegrass (*Agrostis scabra*) Northern long sedge (*Carex folliculata*)	- FACH	Y	N	Y
W2P5	Black spruce *(Picea mariana)*	FACH	Sweet gale (*Myrica gale*) Leatherleaf (*Chamaedaphne calyculata*)	OBL OBL	Carex sp. (*Carex sp.*) Sphagum sp. (*Sphagnum sp.*)	- FACH	Y	Y	Y
W2P6	Black spruce *(Picea mariana)*	FACH	Leatherleaf (*Chamaedaphne calyculata*) Lowsweet blueberry (*Vaccinium angustifolium*)	OBL NI	Common brown peat moss (*Sphagnum fuscum*) Feather moss (*unknown*)	FACH -	Y	N	Y

Table 4-3 - Dominant Plant Species by Vegetation Layer, Hydric Status and Soil Characteristics □Wetland #3

Sampling station	Dominant Plant Specie (> 50 % relative coverage/veg. layer)						Hydrophyte dominant vegetation (Y/N)	Hydromorphic Soil (Y/N)	Wetland (Y/N)
	Trees	Hydric status	Shrubs/Regeneration	Hydric status	Herbaceous	Hydric status			
W3P1	N/A	N/A	Speckled alder (*Alnus incana ssp. rugosa*) Sweet gale (*Myrica gale*) Leatherleaf (*Chamaedaphne calyculata*)	FACH OBL OBL	Sphagum sp. (*Sphagnum sp.*)	FACH	Y	Y	Y
W3P2	Black spruce *(Picea mariana)* Tamarack (*Larix laricina*) Jack pine (*Pinus banksiana*)	FACH FACH NI	Leatherleaf (*Chamaedaphne calyculata*)	OBL	Sphagum sp. (*Sphagnum sp.*)	FACH	Y	N	Y
W3P3	N/A	N/A	N/A	N/A	Black-girdled woolgrass (*Scirpus atrocinctus*) Star sedge (*Carex echinata*)	OBL OBL	Y	N	Y
W3P4	Jack pine (*Pinus banksiana*)	NI	Sheep laurel (*Kalmia angustifolia*) Low sweet blueberry (*Vaccinium angustifolium*)	NI NI	Feather moss (*unknown*) Reindeer lichen (*Cladonia rangiferina*)	- -	N	N	N
W3P5	Black spruce *(Picea mariana)*	FACH	Sweet gale (*Myrica gale*)	OBL	Common brown peat moss (*Sphagnum fuscum*)	FACH	Y	Y	Y
W3P6	Jack pine (*Pinus banksiana*)	NI	Sheep laurel (*Kalmia angustifolia*)	NI	Reindeer lichen (*Cladonia rangiferina*) Coral lichen (*Cladia retipora*)	- -	N	N	N