# AMENDED AND RESTATED NI 43-101 TECHNICAL REPORT

On the

# YELLOWKNIFE LITHIUM PROJECT

NORTHWEST TERRITORIES, CANADA

# **Located Within:**

NTS Sheets: **85I/01, 02, 07, 08, 11, 12, 13; 85J/08, 09; 105I/02** 

# **Report Prepared for:**

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## 1 SUMMARY

#### 1.1 Introduction

This report provides an independent review of the Yellowknife Lithium Property for Li-FT Power Ltd., a company focused on the exploration and development of lithium deposits in Canada.

This report was prepared by Thomas Hawkins P.Geo, PhD an independent qualified person (QP) as defined by Canadian Securities Administrators *National Instrument 43-101 Standards of Disclosure for Mineral Projects* (NI 43-101) and as described in Section 28 (Date and Signature Page) of this report.

## 1.2 Property Ownership

The online registry currently shows that the leases are 100% owned and registered in the name of Erex International Ltd. (Erex). Erex is a wholly owned subsidiary of Li-FT Power Ltd. (The Company). The Property is subject to a 2% net profits royalty and a 2% gross overriding royalty (the "GORR").

## 1.3 Property Description

The property is formed of 13 separate mineral leases centred around longitude 113W and latitude 62N (WGS 84), that cover a series of pegmatitic intrusive rocks that are enriched in the lithium-bearing mineral spodumene. The leases named Ki, VO, Lens, Thor, Hid, Hi-1, Hi-2, Bet, Bin, Nite, Big, Fe, Mut together cover a total area of 1497.7 hectares all located between 18 and 120km of the city of Yellowknife in the Northwest Territories. The leases are registered in the name of Erex International Ltd., which is a wholly owned subsidiary of Li-FT Power Ltd.

Access on the property varies from lease to lease, the Nite, Fi, Ki, BIG, and Hi leases are accessible by short access trails from Highway 4, all other leases are helicopter or fixed wing float plane access only. Fixed wing float planes can land on nearby lakes in summer, and on skis in the winter. The nearest high-voltage electrical power line and barge service is located in Yellowknife, the nearest access to the rail network is located in the town of Hay River.

The Property is located in a terrain that is dominated by low rolling hills. Elevation ranges from 200 metres above sea level around the NITE lease rising gradually to 310 metres above sea level on the VO and THOR leases. The property area is within the Taiga Shield Ecozone High Boreal which consists of discontinuous permafrost, hummocky to rolling bedrock or boulder till, with cover of peatlands, young jack pine stands on recently burned outwash; elsewhere, closed black spruce stands with lichen and shrub understories are dominant; paper birch and dwarf birch occupy regeneration zones on recent burns.

## 1.4 Status of Exploration

The various spodumene-rich pegmatites of the Yellowknife Pegmatite Province were originally discovered in the 1930s and mapped in the 1950s by geologists of the Geological Survey of Canada, as well as early lithium explorers. Active exploration at this time was sporadic and mainly for columbite and tantalite. Exploration in the 1960s and 1970s by the mineral exploration company Canadian Superior Exploration Canada Ltd ("CSEL") demonstrated that a series of pegmatites within the Yellowknife Pegmatite province contained significant spodumene as a rock forming constituent of the pegmatites, locally ranging from 15% to more than 30% of the rock by volume. Other less common lithium minerals include amblygonite. The most promising spodumene enriched pegmatites were staked for Canadian Superior Exploration Canada Ltd and were later acquired by EREX.

Historical work completed on the various properties includes substantial trench sampling of the pegmatites, limited diamond drilling, and bulk sampling for metallurgical and mineral processing studies.

A historical study completed on metallurgical and mineral processing on a 1 tonne bulk sample indicated that a spodumene concentrate could be produced by gravity separation by tabling, followed by flotation. A lithium carbonate product with no deleterious impurities could be produced from the spodumene concentrate through a conventional roast and acid leach treatment. By-products of feldspar, mica, and sodium sulphate were also possible (Page, 1987).

A 2022 LiDAR survey, structural mapping, and mineralogical mapping by Li-FT Power Ltd. has confirmed the presence and extent spodumene on 7 of the 13 leases( Nite, Big, Hi1, Hi2, Fi, Ki and VO)that was reported the in the pegmatitic dykes from historical exploration programs. The author recommends that further work be completed in order to confirm historical reports of spodumene content and the dimensions of spodumene-bearing dykes.

# 1.5 **Geology and Mineralization**

'Yellowknife Pegmatite Province' is defined as an area located in the Slave Craton that contains a series of pegmatitic dykes that were estimated to have intruded the metasedimentary rocks of the Burwash Formation around 2593±6 Ma (Palmer, 2018). The historical exploration work conducted in the area has shown that spodumene forms a significant rock forming constituent of many of the pegmatitic intrusions, locally ranging from 15% to more than 30% of the rock by volume. Other less common lithium minerals include amblygonite.

A regional scale mineralogical zoning has been noted across the Yellowknife Pegmatite province: pegmatites clustering in the northwest, are mineralogically simple and unzoned, consisting of quartz, feldspar, spodumene and mica. The pegmatites found in the southeast of the province are more likely to be LCT type (Lithium, Cesium, Tantalum enriched) and to contain beryllium, cesium, lithium, niobium and tantalum-bearing minerals, (Verley, 2018).

## 1.6 Conclusions and Recommendations

Based on the evaluation of available data, the author of this Technical Report recommends a multi-phase exploration program for Yellowknife Lithium property:

Stage 1.

A summer program to include archeological studies, baseline environmental work, and saw-cut channel sampling of pegmatite surface exposures, as well as regional prospecting and geochemical surveys designed to locate buried targets. In addition, diamond drilling utilizing at least two rigs fitted for HQ coring to test the NITE, BIG, Fi, Ki, and Hi pegmatites, requiring approximately 12,000 m of drilling in 57 drill holes. Estimated to cost \$8 186 870.

Stage 2.

Contingent upon positive results from the First Stage, a follow-up winter program consisting of a drilling program designed to in-fill areas on the dykes that warrant additional testing. The object of this program should be to achieve sufficient data to estimate inferred lithium resources for the dykes that have been drill-tested. Cost estimate for this program to be determined once results are known from the summer program.

## 2 INTRODUCTION

# 2.1 Purpose of Report

This report has been prepared for Yellowknife Lithium Project for Li-FT Power Ltd. ('Li-FT', or the 'Company') whose offices are located at 300-1055 West Hastings Street, Vancouver, BC V6E 2E9. Li-FT is a mineral exploration company engaged in the acquisition, exploration, and development of mineral properties, specifically lithium pegmatite projects located in Canada. Li-FT is listed on the Canadian Stock Exchange in Canada under the ticker LIFT.

This report has been prepared in accordance with National Instrument 43-101 (NI 43-101) guidelines and its purpose is to provide the basis for an informed opinion as to the status and nature of the mineralization on the Yellowknife Lithium Property (the "Property").

## 2.2 Terms of Reference

On the 7<sup>th</sup> of November 2022, Li-FT engaged the services of Thomas Hawkins to prepare an independent National Instrument 43-101 (NI 43-101) Technical Report on the Property which is located proximal to the city of Yellowknife, in Northwest Territories.

Thomas Hawkins is an independent qualified person (QP) as defined by Canadian Securities Administrators NI 43-101 and as described in Section 28 (Date and Signature Page) of this report.

This report is based on the author's personal examination of all available reports and data on the Property. The author has not relied on other experts in the preparation of this report. The sources of information and data contained in the technical report or used in its preparation are provided under Section 27 (References).

#### 2.3 Sources of Information

Information and data contained in this report and used in its preparation were sourced from historical data acquired by Li-FT, historical exploration reports (e.g. assessment reports) filed by companies that worked on the areas that are now covered by the Leases, as well Li-FT's 2022 geological mapping, and LiDAR (Light Detection and Ranging) survey . These sources are cited throughout this report and listed in the References section at the end of the report.

The author has reviewed publicly available information from Northwest Territories website found online for historical property assessment reports and mineral tenure information as well as its digital publication database for regional geological data and mineral occurrence information.

Climate information was obtained from Environment Canada, and population and local information for the Project area was obtained from government websites. The author also reviewed information provided by Li-FT and field personnel.

As of the date of this report, the author is not aware of any material fact or material change with respect to the subject matter of this technical report that is not presented herein, or which the omission to disclose could make this report misleading.

## 2.4 Details of Personal Inspection

On two occasions the author visited the property for the purpose of ground-truthing the information provided by Li-FT's geological team, as well as historical information that has been presented in this report.

On the 16<sup>th</sup> of September 2023, the author was flown by helicopter from the city of Yellowknife to the Big, Hi and Fi leases and on the 25<sup>th</sup> of November 2022 the author was flown to the Nite lease. On both occasions the author traversed along several mapped spodumene-rich pegmatitic dykes towards the location of several trenches where previous workers have the reported the highest % abundance of spodumene within the lease. The author used a GPS, compass and tape-measure to verify the location, orientation, and extent of the historical workings. The author examined and photographed mineralization and alteration around the historical workings to verify statements made by previous workers about the geology of the showing.

On the 25<sup>th</sup> of November 2022 the author collected 3 samples from Nite showing: two from within a trench of the pegmatite dykes that reported the highest percent content of spodumene. Two of the samples were representative of the rocks that were visible in the trench. Visual assessment of the samples suggested that the estimated content of spodumene, lithology, and mineralogy was consistent with the historical reported values (*see figure 7.4*). Samples are typical coarse grained pegmatitic texture containing an estimated 35% coarse grained euhedral tabular crystals of spodumene with coarse grained anhedral to euhedral quartz, potassium feldspar, and muscovite. Two of the samples collected from this showing were sent for chemical analysis at ALS laboratory in North Vancouver.

Table 2.1 Analytical results of the 2 mineralised samples collected by the author.

		LOCATION			
Sample				Li	Li <sub>2</sub> O
number	Description	NAD83 11N	NAD38 11N	(ppm)	(%)
	An estimated 25% spodumene				
YK001	rich grab sample collected	647505			
	from trench in Nite pegmatite		6936516	8160	1.76
	An estimated 35% spodumene				
YK002	rich grab sample collected	647510			
	from trench in Nite pegmatite		6936513	14100	3.04

## 2.5 Abbreviations and Units of Measurement

Metric units are used throughout this report, and all dollar amounts are reported in Canadian Dollars (CAD\$) unless otherwise stated. A list of abbreviations used in this report are shown in Table 2.1.

Table 2.2: Abbreviations and Units of Measurement

Description	Abbreviation or Acronym
percent	%
GORR	Gross Overriding Royalty
three dimensional	3D
gold	Au
Yellowknife Lithium Property	Yellowknife property, The Property
Northwest Territories Geological Survey	NWTGS
degrees Celsius	°С
Canadian dollar	CAD\$
centimetre	cm
Canadian Institute of Mining, Metallurgy and Petroleum	CIM
diamond drill hole	DDH
Lift Power Ltd.	Li-FT
east	E
electromagnetic	EM
degrees Fahrenheit	°F
feet	ft
gram	G
grams per tonne	g/t
billion years ago	Ga
Global Positioning System	GPS
Geological Survey of Canada	GSC
gigawatt hours	GWh
hectare	На
mercury	Hg
inductively coupled plasma	ICP
inductively coupled plasma-mass spectrometry	ICP-MS
ductively coupled plasma-optical emission spectrometry-	
mass spectrometry	ICP-OES/MS
induced polarization	IP
kilogram	Kg
kilometre	Km
metre	M
million years ago	Ma
millimetre	mm
Lithium	Li
million tonnes	Mt
megawatt	MW
north	N
not applicable	n/a
North American Datum	NAD
National Instrument 43-101	NI 43-101
net smelter return	NSR
National Topographic System	NTS
ounces per tonne	opt
ounce	OZ
ounces per tonne	oz/t
Professional Geoscientist parts per billion	P.Geo.
مالنما سمم ماسمم	Ppb

Description	Abbreviation or Acronym
parts per million	Ppm
quality assurance/quality control	QA/QC
qualified person	QP
south	S
System for Electronic Document Analysis Retrieval	SEDAR
tonne	t
target zone	TZ
west	W
LCT Pagmatita	Lithium, Cesium, Tantalum (enriched)
LCT Pegmatite	Pegmatite

# 3 RELIANCE ON OTHER EXPERTS

For the purposes of this report, the author has reviewed and relied on ownership information provided by Li-FT Power Ltd. in November, 2022, which to the author's knowledge is correct. A limited search of tenure data on the Northwest Territories Mining Recorder's Office Mineral Tenure web site confirms the data supplied. This information is used in section 4 of this report.

## 4 PROPERTY DESCRIPTION AND LOCATION

## 4.1 Location

The Yellowknife Lithium Property is a group of separate leases named Ki, VO, Lens, Thor, Hid, Hi-1, Hi-2, Bet, Bin, Nite, Big, Fi, and Mut (Project Area - Figure 4-1) centred around latitude 62.5W longitude 113N (WGS 84) that are located within 18 km to 120km east of the city of Yellowknife, NWT. All leases are non contiguous except the Hi1 and Hi2 leases which share a boundary. The Property lies in the Yellowknife Mining Division, on NTS map sheets 85J09, 85J02, 85J12, 85J08, 85J09, 85I01, 85I02, 85I07, 85I08, 85I11, 85I12, 85I13.

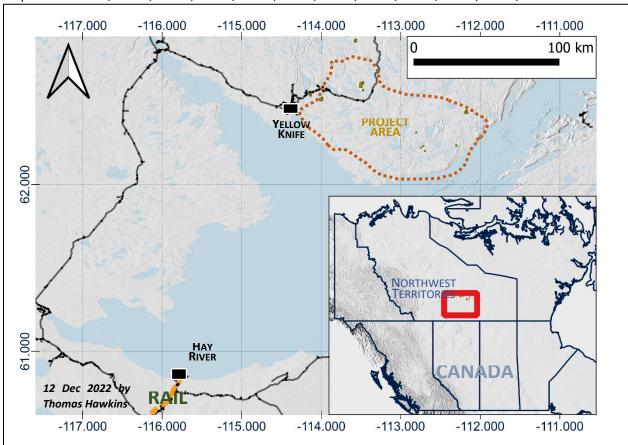


Figure 4-1: Yellowknife Property Location Map

Source: Map prepared by the author, 2022 Mineral Titles, NWT Government Mapping Data

## 4.2 Mineral Title Rights in Northwest Territories

Leases are granted for terms of 21 years that are renewable. Lease rental for the first term is \$2.50 per hectare and for subsequent terms, \$5.00 per hectare.

The Leases are situated within the traditional territory of the Tlicho, Lutselk'e, and Yellowknives Dene First Nations, as well as Northwest Territories Metis First Nation and the North Slave Metis Alliance. Li-FT has indicated that it is committed to developing positive and mutually beneficial relationships with First Nations based on trust and respect and a foundation of open and honest communications.

As of the effective date of this report the QP is not aware of any other significant factors and risks that may affect access, title, or the right or ability to perform work on the Leases. Going forward Li-FT will need to

maintain positive relationships with local stakeholders, including First Nation's support, in order to progress the project.

# 4.3 Property Legal Status

The Property consists of 13 mineral leases Ki, VO, Lens, Thor, Hid, Hi-1, Hi-2, Bet, Bin, Nite, Big, Fe, Mut in 13 (Figure 4-2) located in the Northwest Territories Mining District totalling 1497.2 hectares. The mineral leases grant the holder subsurface mineral rights within the boundary of the lease.

The description and maintenance of a mineral lease is provided by Sections 7(2), 33(5), 60 to 62 of the Northwest Territories Mining Regulations. A mineral lease ('lease') is a converted that mineral claim that has had a sufficient amount and type of work completed on it. To apply for a conversion of a mineral claim to a lease there must be at least \$25 per hectare of work recorded on the claim. A maximum of \$5 per hectare may be from the costs of the survey, or construction of any roads, airstrips or docks. A legal survey of the claim must be recorded before the lease is issued. The application must be submitted with the fee of \$25 per claim. A lease will be issued for a period of 21 years if all requirements are met, including a legal survey and paying the rent for the first year.

As shown in table 4.1 11 of the 13 leases were originally issued in 1985 and currently in good standing until the of 3<sup>rd</sup> September 2027. The leases Hi-1 and Hi-2 were issued in 2010 and are good until 23<sup>rd</sup> of March 2031. To renew a lease, you must submit a written request at least six months prior to the expiration of the existing lease, along with the applicable fee.

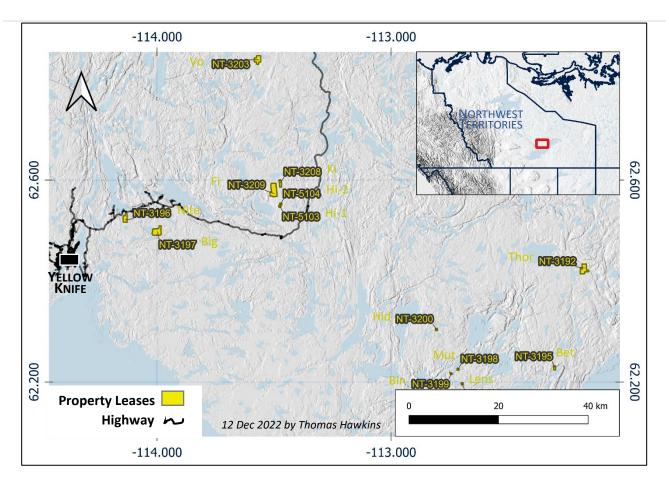


Figure 4-2: Yellowknife Lithium Property Leases

**Table 4.1: Yellowknife Lithium Property Mineral Leases** 

Title Number			Name	Issue Date yyyy-mm-dd	Good-to Date	Area (Ha)	Owner		
NT-3208	113.47321	62.593235	Ki	1985-09-24	2027-09-23	72.3	Erex International Ltd.		
NT-3203	113.57049	62.835065	VO	1985-09-24	2027-09-23	194	Erex International Ltd.		
NT-3194	112.69610	62.196373	Lens	1985-09-24	2027-09-23	21.7	Erex International Ltd.		
NT-3192	112.17335	62.424652	Thor	1985-09-24	2027-09-23	256	Erex International Ltd.		
NT-3200	112.80597	62.304515	Hid	1985-09-24	2027-09-23	21.6	Erex International Ltd.		
NT-5103	113.47281	62.550697	Hi-1	2010-03-24	2031-03-23	21.6	Erex International Ltd.		
NT-5104	113.47281	62.550697	Hi-2	2010-03-24	2031-03-23	20.5	Erex International Ltd.		
NT-3195	112.30126	62.228132	Bet	1985-09-24	2027-09-23	42.8	Erex International Ltd.		
NT-3199	112.74343	62.217020	Bin	1985-09-24	2027-09-23	18.6	Erex International Ltd.		
NT-3196	114.13593	62.525160	Nite	1985-09-24	2027-09-23	148	Erex International Ltd.		
NT-3197	114.00112	62.500353	Big	1985-09-24	2027-09-23	297	Erex International Ltd.		
NT-3209	113.50191	62.580467	Fi	1985-09-24	2027-09-23	364	Erex International Ltd.		
NT-3198	112.71374	62.225487	Mut	1985-09-24	2027-09-23	19.1	Erex International Ltd.		
	TOTAL AREA COVERED BY LEASES 1497.2 hectares								

The online registry currently shows that the leases are 100% owned and registered in the name of Erex. Li-FT acquired Erex, as a wholly owned subsidiary, directly through the acquisition of 1361516 B.C. Ltd. on December 30, 2022. 1361516 B.C Ltd. was a private company incorporated under the laws of the Province of British Columbia holding a 100% interest in and to Erex which in turn holds a 100% interest in and to the 13 mineral leases comprising the Project as stated in Table 4.1.

The Property is subject to a 2% net profits royalty and a 2% gross overriding royalty (the "GORR"). The GORR also applies to all after acquired mineral interests of the leaseholder (Erex) in the Northwest Territories, subject to adjustments as set forth in the agreement evidencing the GORR.

# 4.4 Other Surface Rights on the properties

The Leases are situated within the traditional territory of the Tlicho, Yellowknives, and Lutselk'e Dene First Nations, as well as Northwest Territories Metis First Nation and the North Slave Metis Alliance. Access to surface areas within YLP is permitted once a Land Use Permit has been granted (see section 4.5 below). Currently there is a Land Withdrawal Order in effect in the areas surrounding the Leases. The Withdrawal is the result of devolution of Federal Territory land back to local indigenous groups. The purpose of the Order is to withdraw "from disposal certain tracts of territorial lands in order to facilitate the resolution of Aboriginal land and resource agreements". (Order SI/2014-35 from the Territorial Lands Act, 2014).

## 4.5 Permitting in Northwest Territories

In April 2023 Li-FT signed a Memorandum of Understanding with the Yellowknives Dene First in order to mobilise equipment onto the property and complete a summer drill campaign on the project (press release dated 19<sup>th</sup> April, 2023).

Li-FT has obtained a Type A Land Use Permit (MV2022C0021) and two Type B Water Licences (MV2022L8-0008, MV2022L8-0009) from the Mackenzie Valley Land and Water Board. The Land Use Permit and Water Licences allow Li-FT to establish and use exploration camps and fuel caches, construct winter trails, undertake drilling and other exploration activities, and to use water from local lakes. The term of the Land Use Permit extends to January 2, 2028 and may be extended for an additional two years or replaced with a new Land Use Permit thereafter. The Water Licences are valid until January 2, 2030 and may be renewed to extend the term indefinitely at any time. No other licences or permits are required for the drill program.

Li-FT's technical consultants have also obtained a number of licences and permits that allow the Company to conduct environmental baseline studies, including a Scientific Research Licence (17331) from the Government of the Northwest Territories (GNWT), a Licence to Fish for Scientific Purposes (S-23/24-3021-YK) from the Department of Fisheries and Oceans, and a Class 2 Archaeology Permit (2023-008) for the Nite, Big, Shorty, Fi, and Ki areas from the Prince of Wales Northern Heritage Centre. Applications have been submitted for a Wildlife Research Permit from the GNWT, a Class 2 Archaeology Permit for the Perlis lease, and a Class 2 Archaeology Permit for the HID, BIN, MUT, LENS, and BET leases and potential camp locations near the ECHO lease.

## 4.6 Environmental

At the time of writing this report, there are no known environmental liabilities to which the Property is subject.

There are no other known significant factors and risks that may affect access, title, or the right or ability to perform work on the Property.

# 5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

# 5.1 Accessibility

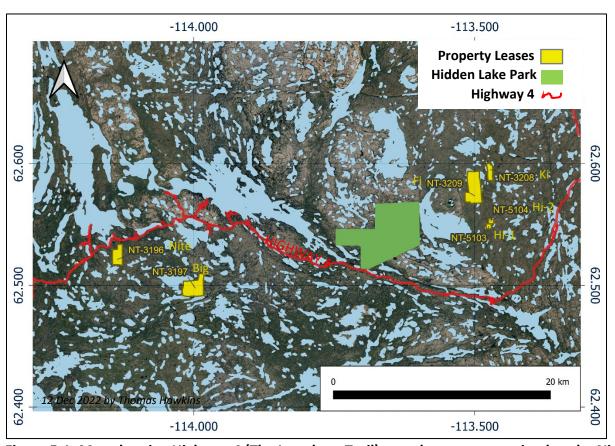


Figure 5-1: Map showing Highway 4 (The Ingraham Trail) paved access to proximal to the Nite, Hi, Fi and Big showings

Access to the Property varies from lease to lease. The Fi, Ki, and Hi leases are located within 60 kilometers of the city of Yellowknife and are within 8km from the asphalt-surfaced Highway 4 (Ingraham Trail). These leases can be accessed in winter by the Thompson-Lundmark mine access road, a 10 kilometre trail which can be used as a winter access road. The BIG lease is located approximately 30 kilometres to the east of Yellowknife along the Ingram Trail, then five kilometers to the south along winter access trails. The Nite lease is located approximately 20 kilometres from the city of Yellowknife and one kilometre to the south of the Ingraham Trail.

During summer months The BIG and NITE leases can be accessed on foot from a point on Highway 4 located 15 km from the outskirts of the city of Yellowknife. In winter months snowmobiles can be used to access the leases in the northwest group.

The other leases are located remotely, access is by helicopter or float plane from the city of Yellowknife.



Figure 5-2: Photograph of paved Highway 4 (The Ingraham Trail) access to proximal to the Nite, Hi, Fi and Big showings

**Table 5.1: Distances** 

Location	Description	Distance to Property (km)
Yellowknife International Airport	Nearest international airport	18 -120km
Yellowknife, Northwest Territories	City with emergency services and mining service centre – population. 21,720	18 -120km
Stanton Territorial Hospital	Nearest full care hospital	18 -120km
Hay River, Northwest Territories	Nearest Rail	492-km (driving) from Nite lease
Yellowknife – Hay River	Barge across Great Slave Lake	200 km

## 5.2 Climate

Climate across the Leases is characterized by very cold winters and cool summers (Fig. 5). Winter snow accumulates to more than 20 cm depth by late November, and typically persists on the ground until sometime in late April. Winter temperatures average below -15°C for December through March. Summer temperatures reach an average of nearly 15°C in July and August.

The length of the operating season for exploration stage projects varies depending on timing of winter freeze-up and spring break-up, but generally lasts approximately 255 days, from February through May for winter work and from June through mid-October for summer work.

Table 5.2: Climate Data for Yellowknife A Weather Station

Climate Data	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year Total
Daily Average (°C)	-25.6	-22.9	-16.8	-5.3	4.6	13.3	17	14.2	7.2	-1.7	-13.7	-21.8	-4.3
Record High (°C)	-21.6	-18.1	-10.8	0.4	9.7	18.1	21.3	18.1	10.4	0.9	-10	-17.8	0
Record Low (°C)	-29.5	-27.5	-22.7	-11	-0.5	8.5	12.6	10.2	4	-4.2	-17.5	-25.7	-8.6
Avg Precip. (mm)	14.3	14.1	13.9	11.3	18.4	28.9	40.8	39.3	36.3	30.3	24.8	16.2	288.6
Avg Rainfall (mm)	0.1	0	0.2	2.5	13.8	28.9	40.8	39.2	32.7	12.1	0.3	0.2	170.7
Avg Snowfall (cm)	19.7	20	18.5	10.3	4.7	0	0	0.1	3.5	20.9	36.5	23.5	157.6

Source: 1981 to 2010 Canadian Climate Normal station data; Yellow Knife A.; 62°27'46.000" 114°26'25.000" W 205.70 m

#### 5.3 Local Resources

General and skilled labour is readily available in the City of Yellowknife (population 20,504). The city offers commercial airline service, year-round charter airline services, and scheduled, fixed-wing service, RCMP detachment, hospital, ambulance, fuel, lodging, restaurants, equipment, and LTE mobile telephone service.

Power for early-stage exploration and development work would likely be provided by diesel powered generators.

There is a barge service between Yellowknife and the Hay River terminal. The town of Hay River is also the location of the nearest rail. Approximate barge distance from Yellowknife to Hay River is 200 km. Approximate driving distance from Yellowknife to Hay River is 482 km.

There is abundant water on all leases to support the proposed drilling program and exploration camp.

The physiography, described hereafter, and the proximity of local services provide numerous, easily accessible, can easily service future project requirements, but the exact nature of that has not been contemplated as at the date of this report.

## 5.4 **Physiography**

The Property is located in a terrain that is dominated by low rolling hills. Elevation ranges from 200 metres above sea level around the NITE lease rising gradually to 310 metres above sea level on the VO and THOR leases. The property area is within the Taiga Shield Ecozone High Boreal which consists of discontinuous permafrost, hummocky to rolling bedrock or boulder till, with cover of peatlands, young jack pine stands on recently burned outwash; elsewhere, closed black spruce stands with lichen and shrub understories are dominant; paper birch and dwarf birch occupy regeneration zones on recent burns. A transition occurs to the east and northeast of the property area to Low Subartic ecoregion consisting of widespread permafrost over similar terrain as in the High Boreal; cover of open, low-growing black spruce forest with lichen and shrub understories are dominant; jack pine stands are less extensive than in the High Boreal ecoclimatic region (Ecosystem Classification Group, 2008).

# 6 HISTORY

## 6.1 Historical Exploration Activity

Spodumene-bearing pegmatites in the Yellowknife Pegmatite province were first described in 1944 (Jolliffe, 1944). The flat to gently rolling topography and glaciated nature of bedrock surface exposures made for relatively easy discovery of pegmatites. During the mid 1950s the lithium-bearing pegmatites received a greater attention due of procurement efforts to secure materials for hydrogen bomb production during the cold war. Most spodumene-bearing dykes were sampled by trenching during this time period. Further studies by Geological Survey of Canada documented the pegmatites distribution and noted their economic potential (Rowe, 1952, Hutchinson, 1955, Mulligan, 1965, Kretz, 1968, and Henderson, 1985).

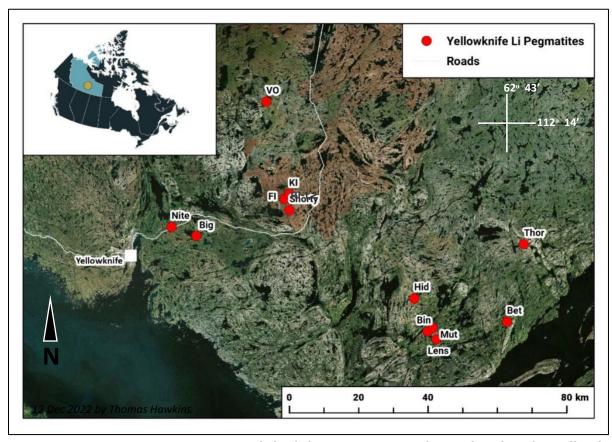


Figure 6.1: Prospect names associated the lithium pegmatites located within the Yellowknife Lithium Property Leases

In 1973, geologists Volker Ahlborn and John S. Vincent working for the mineral exploration company Canadian Superior Exploration Limited examined the potential for lithium in the Yellowknife Pegmatite Province. Following an initial surface mapping and appraisal the 12 most prospective pegmatite dyke complexes were staked. Active exploration was initiated in 1975 with in the Yellowknife Pegmatite Province . The program continued with sampling and limited diamond drilling until 1979. After Canadian Superior Exploration Limited withdrew their interest in the area in 1983, Volker Ahlborn and John S. Vincent acquired the lithium properties and transferred them into EREX International Ltd.

In July 1985, EREX entered into an option agreement with Equinox Resources Ltd ("Equinox"). In early 1987, Beaty Geological Ltd. conducted a small bulk sampling program on pegmatitic dykes on the Fi and Ki leases on behalf of Equinox. When Equinox was then taken over by Hecla Mining Company payments were made to Canadian Superior Exploration Limited which completed the option agreement thereby extinguishing Canadian Superior Exploration Limited's interest in the lithium properties. Hecla had no interest in the leases, and they were subsequently transferred to EREX.

There has been varied amounts of exploration on each of the separate leases that collectively form the Yellowknife Lithium Project. Table 6.1 summarizes the type of historical exploration conducted on each of the separate the leases along with the report number to the assessment reports that reference the work, as well as the company that requested the work.

Table 6.1: Summary of previous exploration work on the leases of the property area

Year	Lease Name	Nature of Work	Operator	AR No.	
1975	NUTE	Mapping	Canadian Superior Exploration Limited	80290	
1978	NITE	Drilling	Orilling Canadian Superior Exploration Limited		
1955		Drilling	General Lithium Corp. Ltd.	82348	
1975	BIG	Mapping	Canadian Superior Exploration Limited	80273	
1979		Trenching	Canadian Superior Exploration Limited	80957	
1987	ш	Drilling	Continental Pacific Resources Inc.	82540	
1987	Hi	Trenching	Continental Pacific Resources Inc.	62264	
1975	Fi	Mapping	Canadian Superior Exploration Limited	80282	
1979	ГІ	Trenching	Canadian Superior Exploration Limited	80958	
1987	Fi Ki	Metallurgy	Beaty Geological	82495	
1975	Ki	Mapping	Canadian Superior Exploration Limited	80274	
1978	KI	Drilling	Canadian Superior Exploration Limited	80834	
1975	VO 1-9	Mapping	Canadian Superior Exploration Limited	80283	
1978	VO 1-9	Drilling	Canadian Superior Exploration Limited	80833	
1969		Geology	Tantalum Mining Corp	60386	
1975	BET	Mapping	Canadian Superior Exploration Limited	80279	
1979	DET	Geochemistry	EREX International	81132	
1985		Trenching	EREX International	81878	
1955		Mapping	North American Li	17319	
1958	THOR	Drilling	McDonald-Woolgar Ltd.	17367	
1959		Compilation	McDonald-Woolgar Ltd.	17419	
1975	THOR	Mapping	Canadian Superior Exploration Limited	80478	
1978	INOK	Drilling	Canadian Superior Exploration Limited	80831	
1975	DINI	Mapping	Canadian Superior Exploration Limited	80278	
1985	BIN	Trenching	EREX International	81875	
1975	шБ	Mapping	Canadian Superior Exploration Limited	80275	
1985	HID Trenching		EREX International	81876	
1975	LENS	Mapping	Canadian Superior Exploration Limited	80280	
1985	LEINS	Trenching	EREX International	81877	
1975	NALIT	Mapping	Canadian Superior Exploration Limited	80277	
1985	MUT	Trenching	EREX International	81879	

#### 6.1.1 NITE Lease

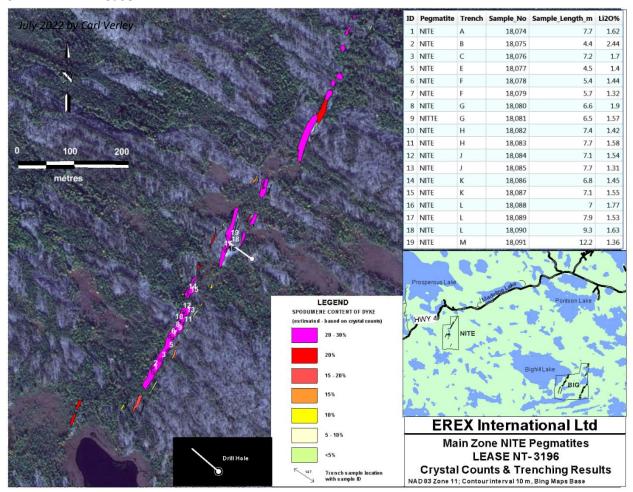


Figure 6.2: NITE Lease, main pegmatite, trenches, drill hole, and results

The NITE lease is situated 24 km by road, east of Yellowknife. The north end of the lease is 830 m south of Highway 4. The ground was formerly covered by the 'Li' group of claims. The claims were acquired by Noranium Minerals Limited and were transferred to a subsidiary company, Giant Lithium Corporation Ltd., in 1955. Affiliated Lithium Mines Limited was later incorporated in April 1956 to carry out exploration work on the Li claims and others in the area (Morrison, 1975a). However, details and results of this work were not filed as assessment reports and, consequently, are not available.

In 1975, Canadian Superior conducted a trenching program on pegmatites now covered by the NITE lease (Morrison, 1975a). A total of 21 continuous chip samples were collected from surface trenches averaging 7 m in length; 18 of those were from the main pegmatite dyke, a body that is 884 m in length and averages 9.1 m in width, striking at 035° and dipping at approximately 50° to 85° to the southeast. Trench samples were shipped to Lakefield Research of Canada Limited in Lakefield, Ontario for lithium assay. Results were reported in percent lithium oxide (Li<sub>2</sub>O%). For the main dyke, results of the trench samples ranged from 1.31% to 2.44% Li<sub>2</sub>O and averaged 1.58% Li<sub>2</sub>O (*Figure 6.2*).

In 1978, Canadian Superior returned to the NITE and drilled one core hole into the main dyke (Morrison, 1978a). The drilling was performed by Titan drilling of Yellowknife, using a BBS-1A drill rigged for BQ coring. The hole was drilled at an azimuth of 305° and inclination of -45°. Pegmatite was intersected from

69.96 m to 78.78 m down the hole. The pegmatite interval was split, and samples sent to Lakefield Research laboratory for lithium analysis. A 9.05 m long interval of core through the pegmatite averaged 1.83%  $\text{Li}_2\text{O}$ . Aplitic border phases to the dyke that averaged 1.55 m in length averaged 0.15%  $\text{Li}_2\text{O}$ . Trench and drill hole locations are illustrated in Figure 6.2. The claims that Canadian Superior Exploration Limited held on the property were transferred to EREX in 1983. EREX then entered into an option agreement with Equinox Resources in 1985. Equinox did not conduct any work on the NITE claims but had them surveyed and then converted to lease NT-3196.

## 6.1.2 The Big Lease

The BIG lease covers an area that was once held by General Lithium Corporation. General Lithium conducted a 1,707.5 m, 15 hole drilling program on the property in 1955. The drilling tested the two northeasterly striking dyke systems, now referred to as the Big East and Big West that occur on the property. Further drilling and trenching was carried out on the property by National Lithium Corporation in 1956. Some drill logs of the work done by General Lithium were filed with the Mining Recorder in Yellowknife (Assessment Report 082348). Drill hole locations were relocated during field work conducted by Canadian Superior Exploration Canada Ltd in 1975 (Morrison, 1975b). Drill hole locations are illustrated on Figures 6.3; 6.4; 6.5. The drill plans show continuity of dykes to depth of 150 metres and widths in excess of 10 metres.

Canadian Superior Exploration Limited staked the BIG 1 – 13 claims in July 1975; these were later reduced and converted to the BIG lease (Lease number NT-3197) in 1986. Canadian Superior Exploration Limited conducted a mapping and trench sampling program of the pegmatites on the property in 1975. Trench samples were collected from dykes of the BIG East, BIG West, and Big North dyke systems. In 1979, Canadian Superior Exploration Limited's crew returned to the BIG claims and had an additional 13 trenches blasted across parts of the BIG West dyke system (Morrison, 1979). A total of 17 continuous chip samples were collected from the trenches.

All samples from 1975 and 1979 were shipped to Lakefield Research for lithium analysis. Results of the sampling are summarized in Table 4 and illustrated in Figures 6.3; 6.4; and 6.5.

Table 6.2: Summary of 1975 BIG trench sample results

Dyke	No of samples	Total length sampled (m)	Average sample length (m)	Li <sub>2</sub> O%			
system				Minimum	Maximum	Weighted average	SD <sup>1</sup>
BIG East	38	279.2	7.35	0.88	2.37	1.45	0.31898
BIG North	7	46.3	6.61	0.73	1.70	1.19	0.30812
BIG West	54	237.5	4.40	0.01	3.23	1.17	0.78418

SD = Standard deviation

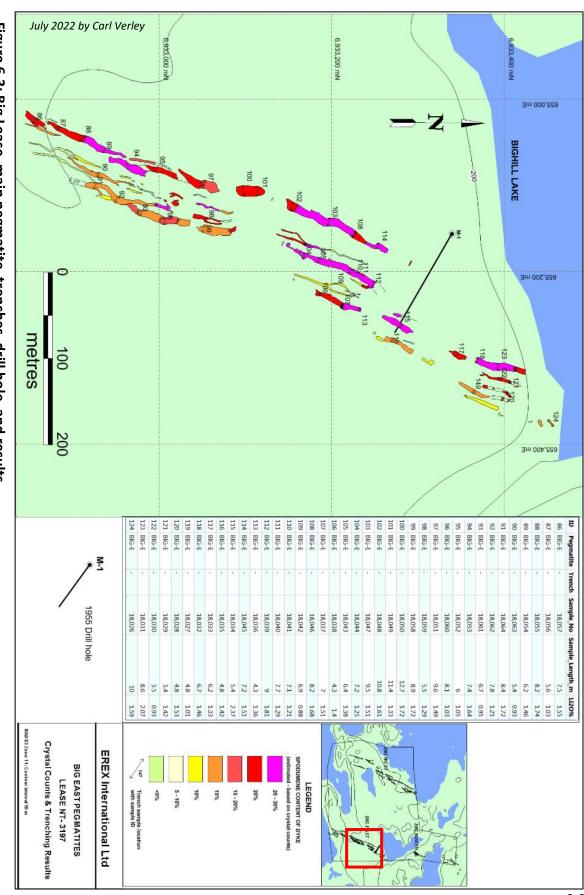


Figure 6.3: Big Lease, main pegmatite, trenches, drill hole, and results

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SPODUMENE CONTENT OF DYKE
(estimated - based on crystal counts) 20 - 30% Trench sample location with sample ID Sample\_Length\_m Li20% 0.62 1.27 0.39 0.8 1.08 1.08 0.06

Figure 6.4: Big Lease, 'eastern' pegmatite, trenches, drill hole, and results

6-7

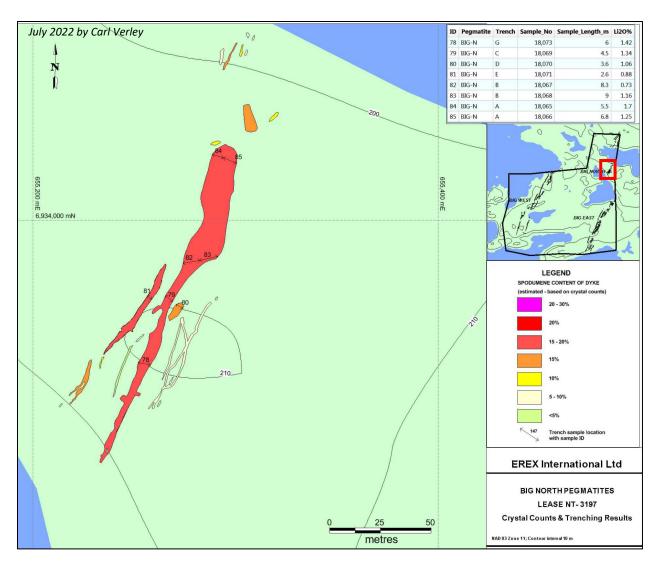


Figure 6.5: Big 'north' pegmatite, trenches, drill hole, and results

#### 6.1.3 The Hi Lease

The Hi leases were first staked as part of the Lit group of claims by Noranium Minerals Limited in 1955. Those claims were then transferred to Affiliated Lithium Mines who conducted stripping, trenching, and sampling across the pegmatite. However, reports of this work were not filed with the Mining Recorder. The claims subsequently lapsed.

The BEN 1 to BEN 4 and JIM 1 to JIM 4 claims were staked by Harry Rogers and Ben Hogg in 1974 to cover the pegmatite previously held under the Lit claims. The BEN and JIM claims lapsed in the late 1970's. In 1975 Canadian Superior Exploration Limited resampled trenches on the main pegmatite that they called "Greg" (Ahlborn, 2009). While the Canadian Superior Exploration Limited trench data was never filed, EREX acquired the data when it purchased the claims from Canadian Superior Exploration Limited; the results are summarized in Table 6.3 and illustrated in Figure 6.6. The BEN and JIM claims were restaked as the Shorty 1 claim in December 1983 by Navillus Holdings Ltd.

The claim was transferred to Continental Pacific Resources Inc. in November 1986. Continental Pacific undertook a trench sampling program on Shorty 1 under the management of Lou Covello Consulting Geologist Ltd. and their geologist Mark Senkiw, P. Geo. (Senkiw, 1986). Continental Pacific's work in 1986 consisted of detailed mapping of the pegmatite exposures and resampling seven old trenches purported to be excavated by Canadian Superior Exploration Limited. A total of 116 chip samples were collected from the seven trenches (labelled as A to G – Figure 6.6) and surface grab samples across the pegmatite dyke. The trenches were sampled from west to east by taking continuous chip samples from trench walls. Samples lengths varied from 1.5 to 2.8 m. Metasediment inclusions in three of the trenches were not sampled. Of the 116 samples taken, five were surface grab samples and 111 were trench samples of which one was lost. The samples were shipped to Maurette Resources and Services Ltd in Calgary who crushed and pulverized the samples. Splits of the sample pulps were then forwarded to Midland Earth Science Associates, Nottingham, England for tin and tantalum analysis and to Loring Laboratories Ltd. for lithium and beryllium analysis. Details of the sample preparation by Maurette and analytical procedures at Midland and Loring were not disclosed.

In 1987 Continental Pacific resumed exploration of the property, establishing a mapping grid, sampling five additional trenches (K, and BB to DD; refer to Figure 6.6), and drilling a total of 1,261.2 m of 11 NQ core holes (Bryan, 1987). The 1986 and 1987 trench results are tabulated below (Table 6.3) and are aligned with comparable samples from Canadian Superior Exploration Limited's 1975 trench sampling results (Table 6.3).

The drilling tested the pegmatite dyke over a strike length of 400 m to depth of 130 m. Detailed drill hole plan map is shown in Figure 10.4. Drilling was conducted by Connors Drilling Ltd. All drill core was logged and split on site. Core samples were shipped to Barringer Magenta Laboratories (Alberta) Ltd. in Calgary. Diamond drill results (Table 6.4, below) indicate the pegmatite plunges to the north. The southern end of the dyke tapers to very narrow widths at a vertical depth of 80 m, with the north end of the dyke open below 160 m vertical." (Bryan, 1987).

The Shorty 1 claim lapsed and was restaked as the Hi 1 and Hi 2 claims on April 24, 2008, for Boye Ahlborn. Work conducted on the claims consisted of trench resampling, geochemistry and alteration studies. The claims were surveyed in 2008 and converted to leases; the leases were later transferred to Erex International Ltd.

Figure 6.6: Hi Lease, main pegmatite, trenches, drill hole, and results 6,938,200 mN 6,937,700 mN 6,937,800 mN 6,937,900 mN 6,938,000 mN 6,938,100 mN 372,600 mE 372,700 mE 372,800 mE metres 372,900 mE 100 373,000 mE July 2022 by Carl Verley 125 H; 125 H; 127 H; 12 Trench Sample\_No Sample\_Length\_m 1975 Trench results 1.4 1.21 0.75 0.82 1.49 1.04 145 1.42 0.87 138 1986/87 Trenches Trenching Results & Drill Holes LEASES NT-5103 & NT-5104 **EREX International Ltd** 1975 Trenches & sample ID HIPEGMATITE LEGEND 1987 Drill Holes

6-10

Table 6.3: Hi Lease, 1975 and 1986/87 Trench Results

Trench	Length (m)	Weighted Average Li2O%				
1986-1987 Trench Results						
FF	15.6	1.61				
DD	15.4	1.93				
CC	17.8	1.67				
ВВ	17.6	1.31				
А	31.5	0.73				
В	23.8	1.50				
С	25.5	0.84				
D	28.5	0.65				
E	19.5	0.81				
F	21.0	0.88				
G	16.5	0.76				
К	19.8	0.53				
	1975 Trench Results					
9	31.60	1.09				
8	30.50	1.14				
6	24.30	1.54				
7	25.70	1.20				
5	27.80	1.18				
4	18.00	1.11				
3	20.80	1.42				
2	15.70	1.64				
1	12.20	0.02				

Table 6.4: Hi Lease, 1987 Drilling Results

Drill hole	From (m)	Interval (m)	Li <sub>2</sub> O%
S-1-87	41	10	0.76
S-2-87	76.45	15.8	0.88
including	84.55	6.05	1.21
S-3-87			"background"
S-4-87			"background"
S-5-87	55.5	6.9	0.73
including	70.2	7.2	1.14
S-6-87	115.8	5.8	0.65
S-7-87	74.5	26.55	0.68
including	87.9	7.1	1.03
S-8-87	112.07	27.03	0.73
including	128.85	10.25	1.12
S-9-87	67.7	25.85	1.15
including	71.8	19.7	1.42
S-10-87			"background"
S-11-87			"background"

## 6.1.4 Fi Lease

The Fi lease covers a pegmatite dyke complex (Figure 6.7) that in 1956 were held by two companies in two blocks of claims. The southernmost dykes were covered by the Lit group of claims acquired by Affiliated Lithium Mines Limited, while the northern dykes were covered by the J.M. group of claims held by Lithium Corporation. Trenching and 258.5 metres of diamond drilling were conducted on the claims. The details of the work done by these two companies were not filed with the mining recorder and therefore are not available.

In 1975 Canadian Superior Exploration Limited re-staked the ground covered by the Lit and JM claims and initiated a mapping and trench re-sampling program on the Fi (Morrison, 1975c). The work done by Canadian Superior Exploration Limited consisted of detailed geological mapping of the dykes: Fi Main and Fi Southwest. Mapping was undertaking using nylon chain and Sylva compass. In addition, trench resampling was undertaken. A total of 37 samples were collected from 12 trenches on the Fi Southwest Dyke and 7 samples from 4 trenches on the Fi Main Dyke. Samples were considered to be representative chips samples and were taken by chipping one inch (2.54 cm) chips from the trench walls at regular

intervals until approximately 4.5 kg/sample had been collected. Samples were shipped to Lakefield Research of Canada Limited in Lakefield, Ontario for lithium oxide analysis.

In 1979, Canadian Superior Exploration Limited resumed trenching on the Fi dykes, completed blasting and sampling of 6 new trenches (AA to FF series) in the Fi Main Dyke (Morrison, 1979).

Results of the 1975 and 1979 trenching are tabulated below (Table 6.5) and illustrated on Figures 6.8 and 6.9. In 1985. Equinox Resources Ltd. entered into an agreement with EREX to earn a 49% interest in the claims that could be increased to 88%.

Table 6.5: Results of trench samples from Fi Main and SW dykes

Dyke	Trench	Length (m)	Li <sub>2</sub> O% <sup>1</sup>
Fi Main	D	21.9	1.34
Fi Main	С	16.6	1.54
Fi Main	В	12.1	2.03
Fi Main	Α	7.5	1.49
Fi Main	ВВ	12.5	1.53
Fi Main	СС	15.1	1.29
Fi Main	DD	16.8	1.43
Fi Main	EE	17.4	1.69
Fi Main	FF	21.7	1.36
Fi Main	AA	7.0	0.14
Fi Main	Cumulative length	148.6	
Fi SW	А	7.1	0.65
Fi SW	В	15.4	1.19
Fi SW	С	17.2	1.33
Fi SW	D	20.3	1.17
Fi SW	Е	27.7	1.65
Fi SW	F	26.9	1.48
Fi SW	G	25.1	1.75
Fi SW	Н	20.2	1.32
Fi SW	I	19	1.65
Fi SW	J	23.1	1.48

Dyke	Trench	Length (m)	Li <sub>2</sub> O% <sup>1</sup>
Fi SW	К	35.1	1.40
Fi SW	L	26.4	1.30
Fi SW	М	34.1	1.41
Fi SW	N	25.6	0.55
Fi SW	Cumulative length	323.2	

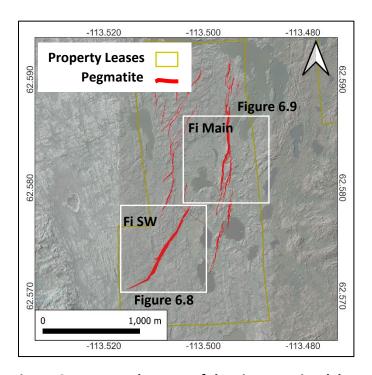


Figure 6.7: Mapped extent of the Fi pegmatite dykes

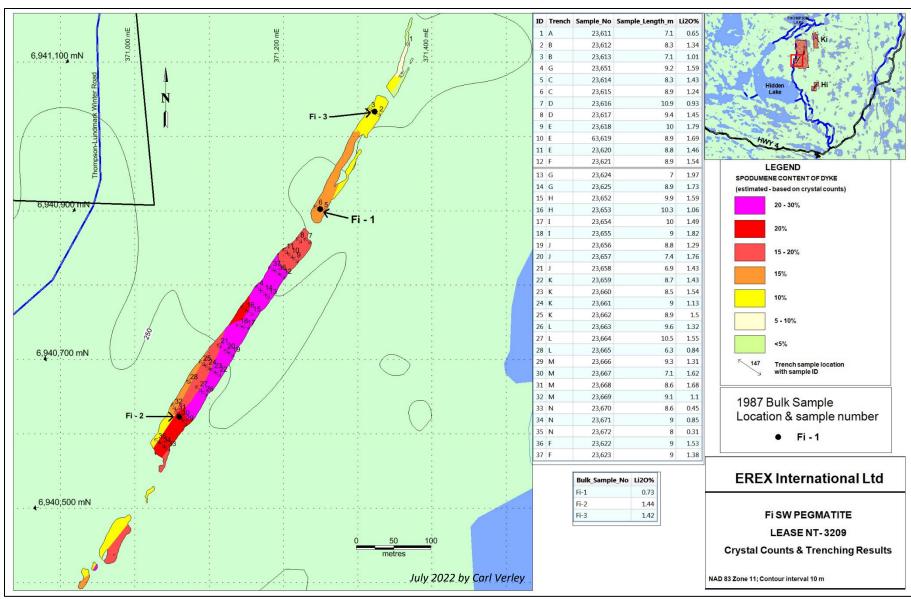


Figure 6-8: Fi Southwest Pegmatite - sample locations and results

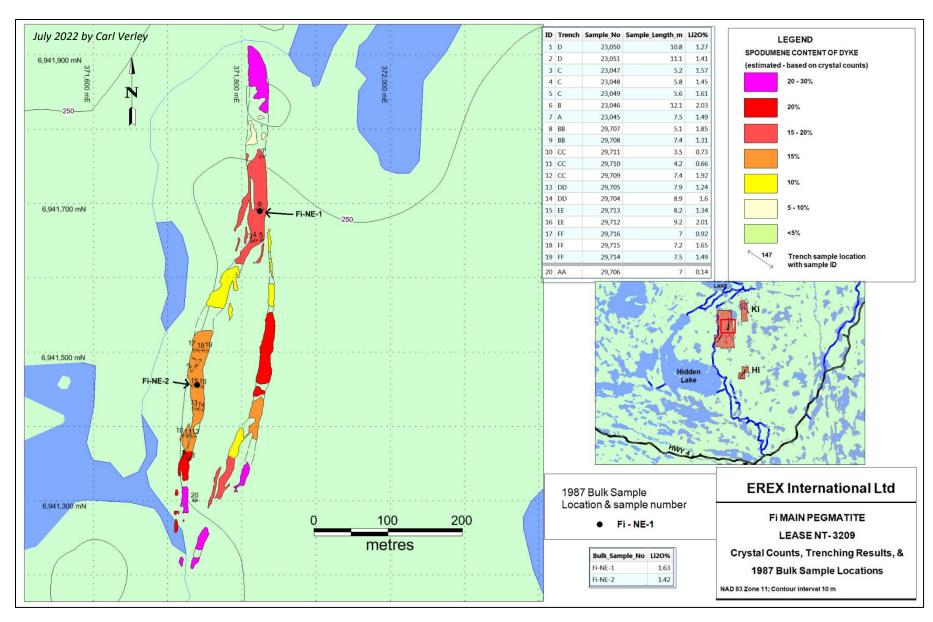


Figure 6-9: Fi main (north) Pegmatite

Equinox retained the services of Beaty Geological Ltd to conduct a small-scale bulk sampling program over parts of the Fi and Ki dykes (J.W. Page, 1987). A total of six, 230 kg samples were collected: 5 from the Fi dykes. The samples were shipped to Vancouver, B.C. for analysis and metallurgical test work at the facilities of Bacon, Donaldson and Associates Ltd. Lithium analytical results for the five samples ranged from 0.73% to 1.63% Li<sub>2</sub>O (Table 6.6). A sample consisting of spodumene crystals separated from the Fi-NE-1 sample was analysed and found to have a lithium content of 6.94% Li<sub>2</sub>O.

Table 6.6: Lithium results for 1987 bulk samples

Sample No	Li₂O%
Fi-1	0.73
Fi-2	1.44
Fi-3	1.42
Fi-NE-1	1.63
Fi-NE-2	1.42

The metallurgical testing indicated that a process combining an initial gravity separation followed by flotation of spodumene could produce a spodumene concentrate grading 5% to 6% Li<sub>2</sub>O at an overall recovery of 80%. Bacon Donaldson indicated that optimization of the process could increase the spodumene recovery. By-products of mica and feldspar were also achievable. In addition, production of lithium carbonate from the spodumene concentrate was achieved using a standard roast and acid leach process. The lithium carbonate product was found to be low in impurities and no potential problems were identified in the conversion process. Appended to the report and written for Equinox is a report by John S. Vincent, P.Eng. titled: A Preliminary Economic Valuation of the Lithium Resources Held by Equinox Resources Ltd., Yellowknife, NWT.

There is no information on the nature of the samples and if they are representative of overall mineralization in the dykes. There is the potential risk of sampling bias that may affect the reliability of the results. Current metallurgical process technology and mineral identification has advanced significantly from the period when the test work was conducted.

### 6.1.5 Ki Lease

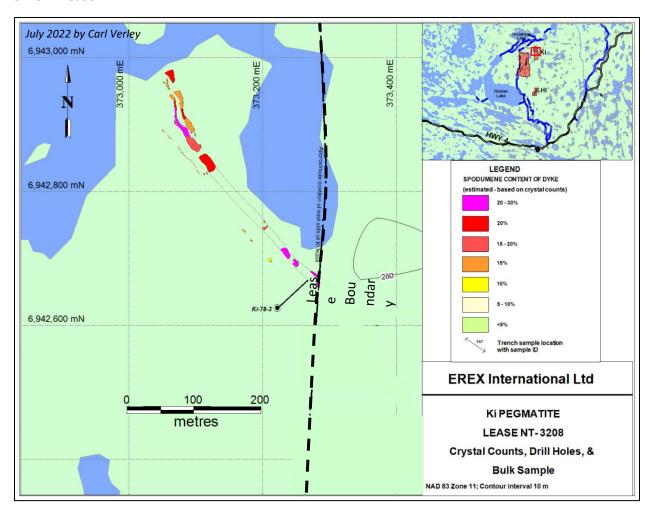


Figure 6-10: Ki Pegmatite – location of trenches

In September 1975 a geological mapping program of the dykes on the Ki Lease was undertaken by Canadian Superior Exploration Limited in the Ki Claims. A surface mapping program in 1975 estimated the modal content of spodumene in the pegmatites and the surface extent of the mineralisation. Results of the mapping and crystal counts are illustrated in Figure 6.10. No old trenches were located on the dykes.

In 1978, Canadian Superior Exploration Limited returned to the Ki claims and drilled 1 BQ diamond drill hole (Morrison, 1978b) that intersected intervals of pegmatite consistent with what was mapped on surface. Results of the drilling are compiled on Figure 6.10 and summarized in Table 6.7 below.

Table 6.7: Summary of 1978 drill Results, Ki Claims

Samples	From (m)	To (m)	Interval (m)	Estimated True Width	Weighted average Li2O%			
Hole: Ki-78-3; Inclination: -45°; Azimuth:045°; Total depth: 86.87 m.								
29680-29684	65.68	80.47	14.78	13.41	1.81			

### 6.1.2 6.1.6 VO Lease

The **VO** lease was covered by the Cota group of 21 claims staked in 1955 by Frank N. Nasso and subsequently optioned to General Lithium Corporation. Two diamond drill holes totalling 375.82 m were drilled by General Lithium. No further work was reported, and the claims lapsed.

In 1975, Canadian Superior Exploration Limited staked the VO 1-9 claims to cover the pegmatite dyke complex (Morrison, 1975c). Mapping of the dykes and re-sampling of existing trenches was undertaken. A total of 18 samples were collected from 17 trenches in 4 of the 7 main dykes on the claims. Samples were shipped to Lakefield Research of Canada Limited for Li<sub>2</sub>O analysis. Trench sample results are summarized in Table 6.8 below and illustrated on Figure 6.11

Table 6.8: Summary of 1975 trench results on VO Lease

	_		C	
Pegmatite	Trench	Sample #	Sample Length m	Li <sub>2</sub> O%
VO Dyke #5	G	4058	3.60	0.51
VO Dyke #5	Н	4053	6.90	1.91
VO Dyke #5	I	4060	4.70	2.14
VO Dyke #5	J	4061	3.00	1.46
VO Dyke #5	К	4062	7.40	1.76
VO Dyke #5	L	4063	2.80	1.42
VO Dyke #5	М	4064	4.10	1.61
VO Dyke #5	N	4065	6.00	1.31
VO Dyke #4	С	23044	4.40	0.03
VO Dyke #4	В	23043	2.50	0.05
VO Dyke #4	Α	23042	4.00	0.40
VO Dyke #2	Α	4051	7.10	1.53
VO Dyke #2	В	4052	11.00	1.63
VO Dyke #2	С	4053	8.00	0.83
VO Dyke #2	D	4054	5.40	2.61
VO Dyke #1	Е	4055	7.60	0.37
VO Dyke #1	F	4056	4.00	1.28
VO Dyke #1	F	4057	8.40	0.72

In 1978, Canadian Superior Exploration Limited completed a helicopter supported diamond drill program on the VO claims (Morrison, 1978c). A total of two BQ holes totalling 184.40 m were drilled 122 m apart. The holes were designed to test VO Dyke #5. Drill hole locations are illustrated on Figure 6.11, results are summarized in Table 6.9 below.

Table 6.9: Summary of 1978 drill Results, VO Claims

Samples	From (m)	To (m)	Interval (m)	Li20%					
Hole: VO-78-1; inc	Hole: VO-78-1; inclination: -45°; Azimuth: 152°; total depth: 95.10 m								
29667	55.93	58.83	2.9	0.073					
29668	58.83	61.57	2.74	0.082					
29669	64.25	66.75	2.5	0.79					
Hole: VO-78-2; Inc	clination: -45 <sup>o</sup> ; A	zimuth:154°; To	otal depth: 89.31 m.						
29670	76.51	79.55	3.05	0.28					
29671	79.55	82.60	3.05	0.79					
29672	82.60	85.28	2.68	0.36					

Results of the drilling did not match the results of the trenching.

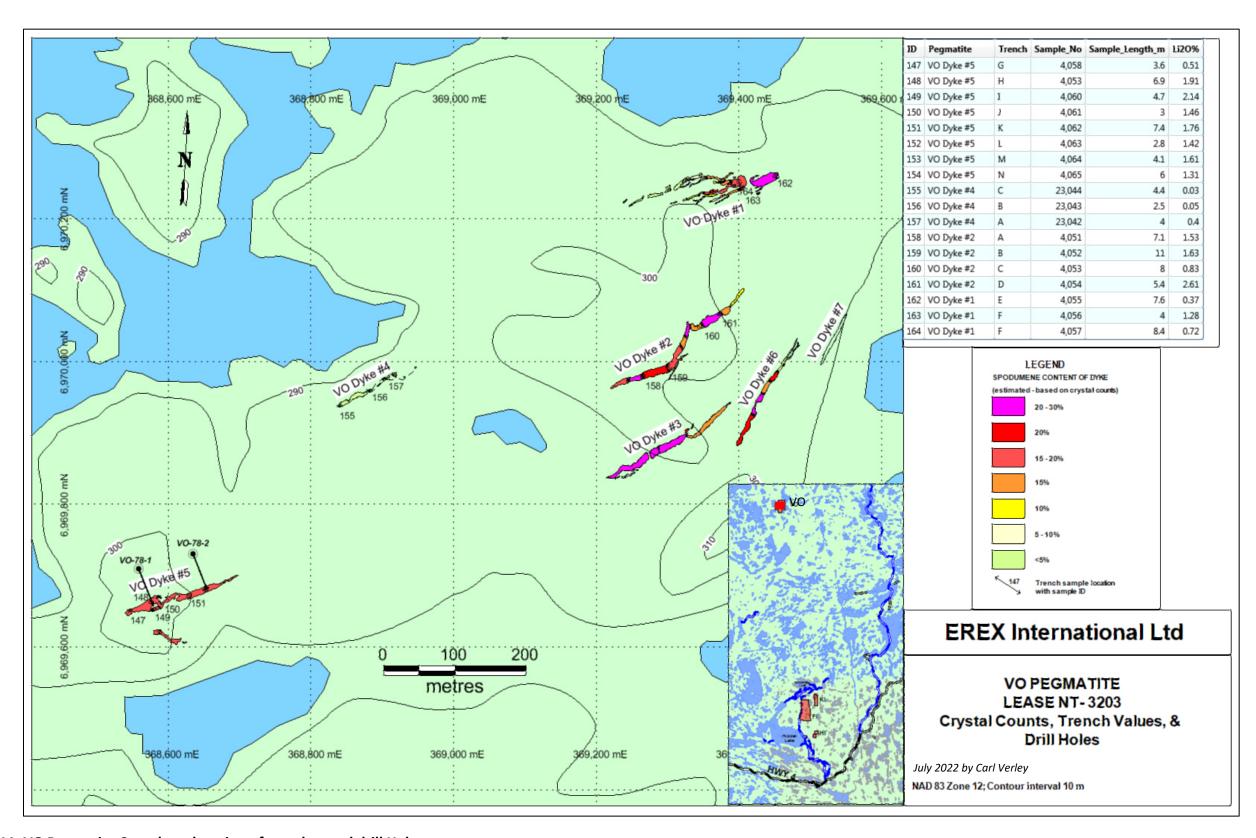


Figure 6.11: VO Pegmatite Complex – location of trenches and drill Holes

### 6.1.3 THOR Lease

The Thor lease was staked as the Echo 1-9 claims and subsequently optioned to North American Lithium Ltd ("NAL") in 1955 (Allen, 1955). During the 1955 field season North American Lithium Ltd personnel mapped and described the pegmatite dykes making up the Thor pegmatite complex in detail. In addition, 74 samples of pegmatitic rock were collected by various parties and shipped to G. S. Eldridge & Co. Ltd. in Vancouver who forwarded the samples to American Spectrographic Laboratories Inc. in San Francisco, California for  $\text{Li}_2\text{O}$  analysis. The exact sample lengths and locations of chip samples taken from trenches excavated by NAL are uncertain. Results of the sample analyses are listed in Table 6.10 below.

**Table 6.10: 1955 Trench sample results** 

		Number		Li <sub>2</sub> O%	6
Sampler	Dyke, Trench #	of samples	Min	Max	Average
Brown August 1955	N/A	12	1.12	3.40	1.96
Allen Sept 1955	N/A	3	1.20	2.30	1.63
Dawson Oct 1955	N/A	7	1.00	4.60	1.83
NAL Oct 1955	Central, Pit-1	7	0.28	2.10	1.42
NAL Oct 1955	Central, Trench#2	7	1.45	2.45	1.83
NAL Oct 1955	Central, Trench#3	9	0.65	1.95	1.34
NAL Oct 1955	Central, Trench#4	15	0.32	2.50	1.79
NAL Oct 1955	Central, Trench#5	7	1.55	2.30	1.79
NAL Oct 1955	Central, Trench#6	7	1.60	2.40	1.94

In 1958, J.R. Woolgar and K.J. McDonald supervised a bulk sampling and a two hole drill program on the Echo claims on behalf of Down North Minerals Ltd. The bulk sample consisted of 2000 pounds (907 kg) of pegmatite taken from trenches in the Main or Central dyke. The sample was shipped to Chapman, Wood and Griswold in Albuquerque, New Mexico for metallurgical and mineral processing test work.

The drilling consisted of two narrow drill holes (2.3 cm diameter) collared just east of the Central dyke and drilled into it at azimuths of  $200^{\circ}$  and  $210^{\circ}$  for a total length of 44.81 m and 39.62 m, respectively. Both holes were drilled at an inclination of  $-45^{\circ}$ . In the first hole, pegmatite was intersected from 9.75 m for a length of 17.37 m with weighted average  $\text{Li}_2\text{O}$  of 1.55% over an estimated true width of 13.41 m; in the second hole pegmatite was intersected from 19.51 m for a length of 12.80 m with a weighted average  $\text{Li}_2\text{O}$  of 1.17% over an estimated true width of 7.62 m.

The metallurgical work determined: "Preliminary flotation tests on the sample from the Echo claims indicate that it is possible to recover 80% of the contained lithium at a grade of 6% Li<sub>2</sub>O. A selected spodumene crystal from the sample contained 8.25% Li<sub>2</sub>O. (Chapman, 1959). There is very little

information on the details of the test work completed and a single crystal cannot be considered to be representative of the mineralisation of the entire pegmatite.

In 1975, Canadian Superior Exploration Canada Ltd staked the Thor mineral claims (Morrison, 1975d). Mapping and re-sampling of the pegmatites was undertaken. A total of 34 chip samples were collected from the trenches and shipped to Lakefield Research of Canada Limited for analysis (Table 15, below). On the results of the trench sampling Morrison commented: *The only dyke on the THOR property with extensive trenching is the Central Dyke, where 17 samples averaged 1.70% Li<sub>2</sub>O. Of the other 17 samples taken from the property several were from trenches blasted in areas of abnormally rich spodumene concentrations and are not indicative of the property as whole.* 

Table 6.11: 1975 Trench results THOR Claims

Pegmatite	Trench	Length (m)	Li20%
THOR-S Island dyke	В	1.0	2.28
THOR -S Island dyke	С	5.7	2.41
THOR -S Island dyke	D	3.0	2.07
THOR -S Island dyke	Α	1.6	0.90
THOR Central dyke	Α	7.4	1.37
THOR Central dyke	В	7.4	2.10
THOR Central dyke	С	10.6	1.51
THOR Central dyke	D	14.8	1.80
THOR Central dyke	E	7.5	1.65
THOR Central dyke	F	12.3	1.15
THOR Central dyke	G	8.8	1.88
THOR -West dyke	Pit A	n/a	2.65
THOR -West dyke	Pit B	n/a	1.72
THOR - Tanco dyke	Pit A	3.2	3.70
THOR – Sidehill		7.9	0.89
THOR East dyke		11.9	0.72
THOR East dyke		18.6	1.31
THOR East dyke		10.1	1.14
THOR Central dyke		3.9	1.98
THOR #4		3.0	1.97
THOR #4		5.0	2.95

In 1978, Canadian Superior Exploration Canada Ltd resumed work on the THOR with a six, BQ hole diamond drilling program totalling 380.10 m. The holes were drilled from four set-ups, inclined to intersect both the Central and East No. 1 dykes. "All spodumene-bearing core was split with a core splitter. Half of the core was sent out for analysis, while the other half was stored with core on the property. In some cases the second half of split core was also sent out for analysis as a check. In the case of drill hole THOR-78-6

total core of the pegmatite intersection was sent out for analysis" (Morrison, 1978d). Titan Drilling Limited of Yellowknife was the drill contractor. The drill ran from April 28 to May 11, 1978, while ice was still on Echo Lake and ski equipped aircraft could be used to service the operation. Summary for the drill hole results is found in Table 6.12 and on Figure 6.12.

Table 6.12: Summary of 1978 drill Results, THOR Claims

Hole/Samples	From (m)	To (m)	Interval (m)	Estimated True Dyke Width	Weighted average Li20%					
1958 Thor-1: inclination: -45°; Azimuth: 210°; Total length: 44.81 m; vertical: 31.68 m										
n/a	9.75	27.43	17.37	13.41	1.55					
<b>1958 Thor-2:</b> inclin	<b>1958 Thor-2:</b> inclination: -45°; Azimuth: 200°; Total length: 39.62 m; vertical: 28.02 m									
n/a	19.51	32.31	12.80	7.62	1.17					
including	23.16	30.78	7.62	5.39	1.79					
Thor-78-1; inclinat	tion: -45 <sup>o</sup> ; Azimı	uth: 205 <sup>o</sup> ; Tota	l length: 79.86 m; ve	ertical: 56.47m						
29626-29629	52.58	64.62	12.04	11.58	1.29					
Thor-78-2; Inclinate	tion: -45°; Azim	uth: 200°; Tota	l length: 74.07 m; ve	ertical: 52.37 m						
29630-29635	50.60	64.92	21.22	13.41	0.92					
including	51.21	63.40	13.72	9.70	1.41					
Thor-78-3; Inclinat	tion: -45 <sup>o</sup> ; Azim	uth: 020°; Tota	l length: 58.83 m; ve	ertical: 41.60 m						
29636-29639	43.74	54.41	10.67	9.14	0.31					
Thor-78-4; Inclinate	tion: -48 <sup>o</sup> ; Azim	uth: 203 <sup>o</sup> ; Tota	l length: 58.83 m; ve	ertical: 42.00 m						
29640-29647	29.26	50.29	21.03	20.42	1.42					
including	30.48	47.85	17.37	18.00	1.69					
<b>Thor-78-5</b> ; Inclination: -90°; Total length: 64.92 m; vertical: 64.92 m										
29648-29654	46.63	62.33	15.70	10.67	1.02					
including	47.55	61.72	14.17	10.67	1.12					
Thor-78-6; Inclinate	<b>Thor-78-6</b> ; Inclination: -45°; Azimuth: 020°; Total length: 43.59 m; vertical: 30.82 m									
29655-29660	30.39	38.10	7.71	7.32	0.83					
including	31.09	37.49	6.40	4.53	0.99					

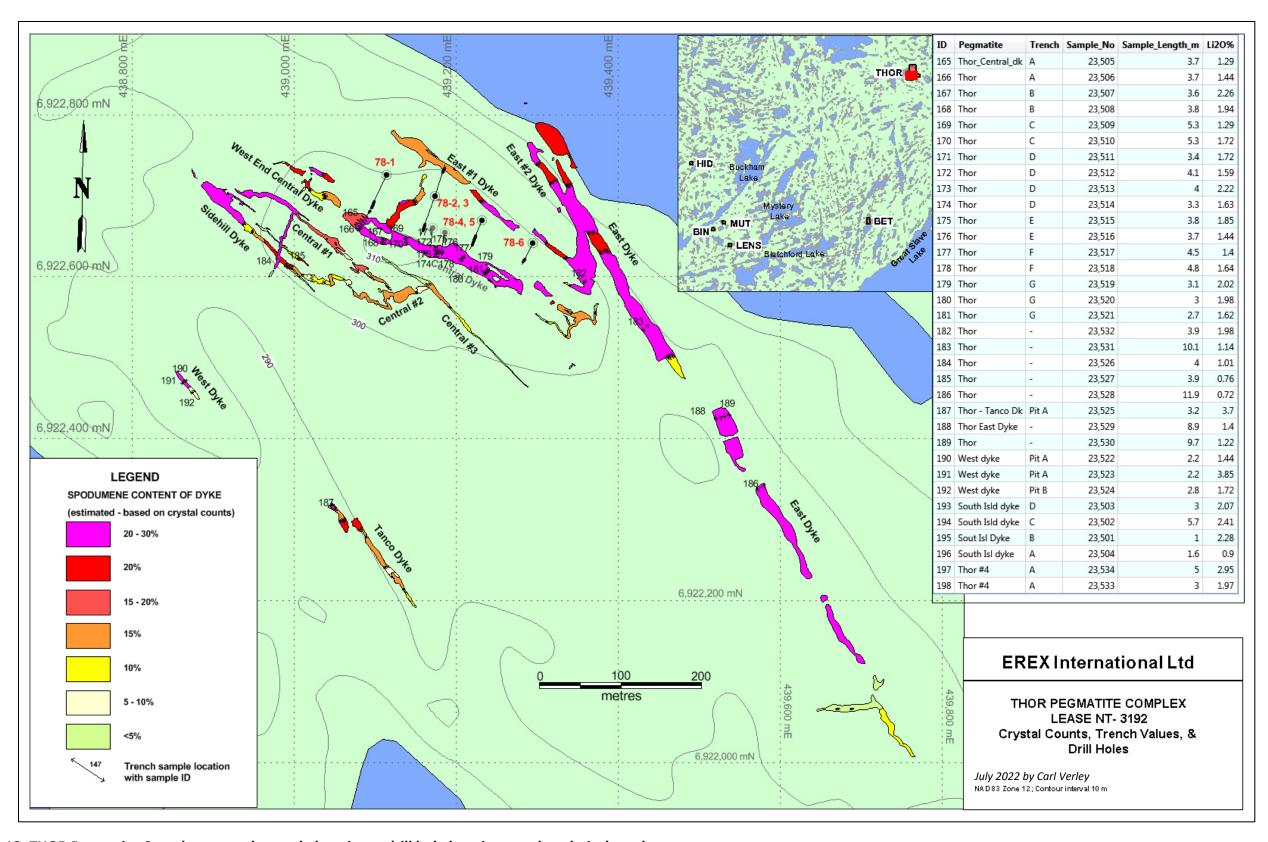


Figure 6.12: THOR Pegmatite Complex - trench sample locations, drill hole locations, and analytical results

### 6.1.4 BET Lease

The Bet lease was originally held under the Best Bet 1 and 2 claims, staked in 1944. The property was later acquired by De Staffany Tantalum Beryllium Mines Limited.. In 1948, 1,400 pounds of columbite-tantalite mineralization concentrate was produced from ore mined from the Best Bet pegmatite. Ownership of the claims was acquired by Boreal Rare Metals Limited in 1952 with mining operations managed by Dominion Management Limited. Mining continued on an intermittent basis until August 1954. An open cut along the pegmatite was excavated for a length of 75 m, width of 4.25 m, and depth varying from the south end of 1.5 m to 12 m at the north end. According to Mosher (1969) the Best Bet pegmatite was found to contain appreciable amounts of lithium as well as containing columbite and tantalite. In 1954, diamond drilling tested the pegmatite for a strike length of 91 m. In 1955 drilling resumed over the 91 m length, but to depths of 91 m.

In 1969, David Mosher mapped and re-sampled the pegmatite. According to his report: "a large open cut section has been removed from the Best Bet pegmatite and has caused the greater strike length of the pegmatite to be covered with blast debris and rubble. Mapping and sampling was therefore limited to remnants of the walls of the open cut and exposed blast faces at either end of the pegmatite." Consequently, Mosher's sample results ranged from trace to 0.07% Ta<sub>2</sub>O<sub>5</sub>; no columbite analyses were reported. The Best Bet claims subsequently lapsed.

In 1975, Canadian Superior Exploration Canada Ltd restaked the Best Bet claims as the Bet 1 and 2 claims and subsequently mapped and sampled the pegmatite (Morrison, 1975e). Morrison's map is illustrated in Figure 6.13. In terms of sampling the pegmatite, Morrison commented: because of the very large size of the spodumene crystals within the pegmatite, small samples were not thought to be representative. Rather, 50 ft (15 m) distances were measured off and the length of spodumene crystals along a 50 ft line were totalled up to give a percentage figure for spodumene within the pegmatite. Spodumene samples were then taken from along the 50 ft lines and samples of 100% spodumene were analysed for lithium content. Amblygonite samples were not taken during the visit to the sill, so the overall lithium content of the body cannot be calculated. Three 10 pound (4.5 kg) samples of 100% spodumene were sent to Lakefield Research of Canada Limited for analysis." "The lithium contents of the three samples of 100% spodumene ranged from 5.98% to 7.19% Li<sub>2</sub>O. The average was 6.49% Li<sub>2</sub>O."

In 1979 a geochemical survey was undertaken by COMINCO Ltd on the BET claims on behalf of EREX (LeCouteur, 1979). A number of samples were taken from the Bet pegmatite itself. In addition, rock samples were collected from the schist host rocks enclosing the pegmatite from lines perpendicular to the strike of the pegmatite. The results of this work indicate that there is a halo of anomalous values in lithium, cesium, and rubidium.

In 1985, EREX conducted additional trenching on the BET, BIN, HID, and MUT pegmatites. Trenching on the BET was undertaken in order to investigate the base of the previously mined zone where pegmatite was situated under rubble that had fallen into the excavation (Ahlborn, 1985a). The sheared foot wall contact of the dyke was located and the orientation of the dyke at this point was determined to be striking at 048° and dipping at 62° to the northwest.

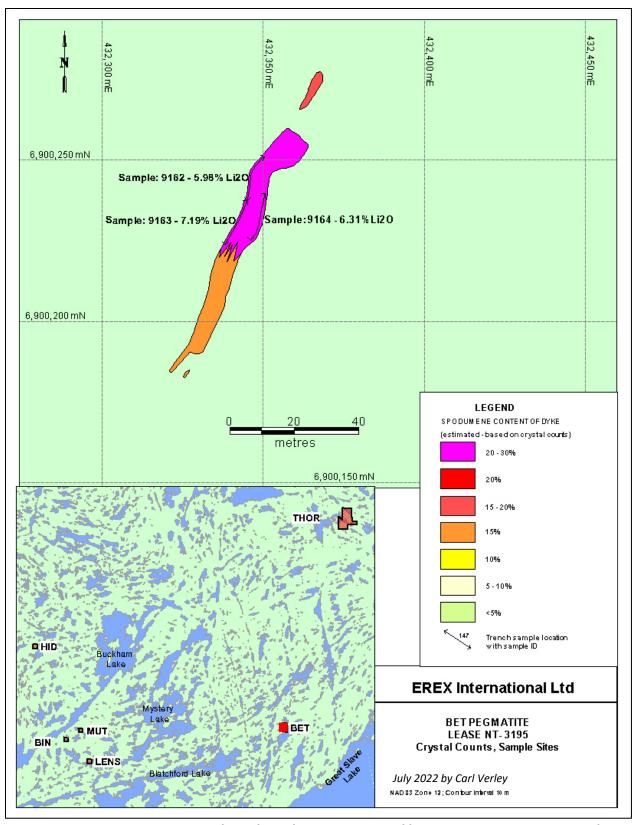


Figure 6.13: Bet Pegmatite – Analytical results, mapping, and location LENS, MUT, BIN, and HID leases

# Campbell Lake 62.31 N Mystery Lake 62.22 N 62.22 N 63.31 N 63.32 N 64.88 Kilometres Buckham Lake Mystery Lake Mystery Lake Mystery Lake Mystery Lake Mystery Lake

## 6.1.5 LENS, MUT, HID, and BEN Leases

Figure 6.14: Location of the HID, MUT, BIN, and LENS pegmatites.

The LENS lease was staked as Lens 1 claim by Canadian Superior Exploration Canada Ltd in 1975 (Morrison, 1975f). There are no records of prior ownership. However, trenches on the property indicate that previous exploration had been undertaken there. Mapping by Morrison in 1975 demonstrates that the pegmatite exposed on the claim is 90 metres long and up to 18 m wide; it strikes approximately 162° to 175°; northern part of the pegmatite dips 72° to the east. Three samples collected from the old trenches were sent to Lakefield Research of Canada Limited for lithium analysis; results of this work are listed in Table 6.13 below.

Table 6.13: LENS lease trench sample lithium results

Sample No	Trench	Li <sub>2</sub> O%
9151	Α	2.03
9152	В	1.80
9153	С	2.07
	average	1.97

The MUT lease was staked by Canadian Superior Exploration Canada Ltd in 1975 as the MUT 1 claim (Morrison, 1975g). There are no records of prior ownership. However, trenches on the property are indicative of previous exploration work. Geological mapping and sampling by Canadian Superior

Exploration Canada Ltd was undertaken on a small lenticular pegmatite dyke, measuring 91 m long by 4.5 m wide, striking 130° and estimated to dip 90°. Three samples collected from the old trenches were analysed for Li<sub>2</sub>O by Lakefield Research; these results are tabulated below (Table 6.13). Results of the sampling suggested to Morrison that the southeast side of the dyke may be higher in lithium than other parts of the dyke.

Table 6.14: MUT lease trench sample lithium results

Sample No	Trench	Li <sub>2</sub> O%
9154	Α	2.29
9155	В	2.37
9156	В	1.96
	average	2.21

The BIN lease was staked as the BIN 1 claim by Canadian Superior Exploration Canada Ltd in 1975 (Morrison, 1975h). There are no records of prior ownership. However, one trench in the pegmatite exposed on the property is indicative of previous exploration work. Morrison mapped the pegmatite and sampled the trench. The sample was analysed for lithium by Lakefield Research and found to contain  $3.19\%\ Li_2O$ .

The HID lease was staked as the HID 1 claim by Canadian Superior Exploration Canada Ltd in 1975 (Morrison, 1975i). There are no records of prior ownership. However, one trench in the pegmatite exposed on the property is indicative of previous exploration work. Morrison mapped the pegmatite and collected two samples from the one trench. The samples were analysed for lithium by Lakefield Research and found to contain 1.35% and 1.76%  $\text{Li}_2\text{O}$ . Pegmatite on the lease consists of three main dykes that are closely grouped and aligned to strike on average 55° over a length of approximately 240 m. The dykes range in width from 3 m to 6 m at surface; the dip has not been ascertained.

## 7 GEOLOGICAL SETTING AND MINERALIZATION

In Canada Lithium-Cesium-Tantalum (LCT) pegmatites that are found to contain substantial amounts of spodumene are largely found in in the Yellowknife Pegmatite province, as well as in Superior Province of Manitoba, Ontario, and Quebec. They are commonly intruded into Archean cratonic metasedimentary-metavolcanic sequences or in Paleoproterozoic to Paleozoic formations are found along the margins of the Archean cratons (Mulligan, 1965). In the Northwest Territories there are two main areas that contain of lithium enriched-pegmatites; the Yellowknife Pegmatite Province, and the Little Nahanni Pegmatite Group, situated in the Logan Mountains along the border with Yukon.

## 7.1 Regional Geology

The spodumene rich pegmatitic dykes of the Yellowknife Pegmatite Province are situated in the southern part of the Slave craton (Figure 7.1). The Slave Craton is an Archaean age craton in the north-western Canadian Shield, exposed over 190 000 km² in the Northwest Territories and Nunavut. The craton preserved the remnants of steeply dipping metavolcanic rocks that strike north to northeast and are separated by tracts of metamorphosed greywacke-mudstone turbidites and plutonic rocks. All supracrustal rocks of the Slave craton have been metamorphosed at greenschist to amphibolite facies. The plutonic suites, linear greenstone belts and a variety of sedimentary successions were formed between ca. 2580-4030 Ma.

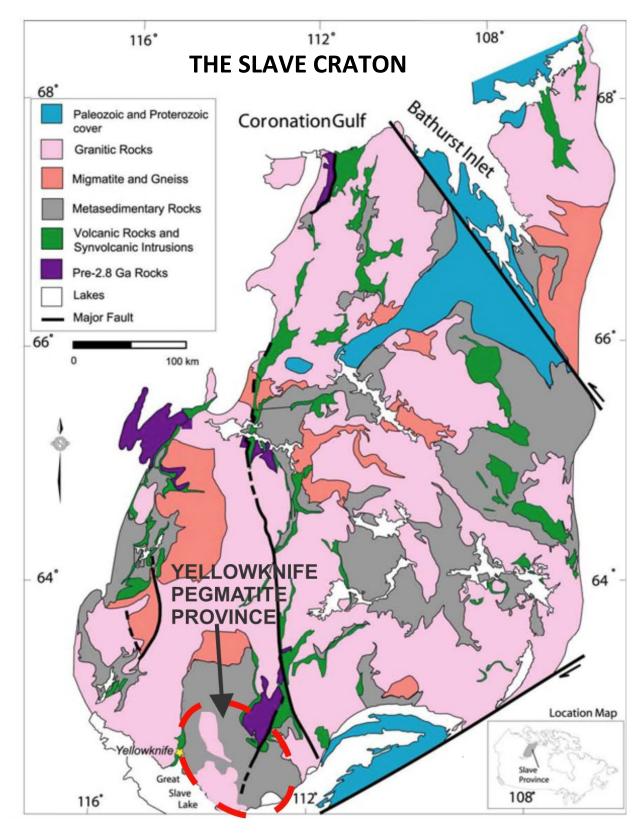


Figure 7.1: Regional Geological Setting of the Yellowhead Lithium Property Leases (Adapted from Stubley, 1997)

### 7.2 Local Geology

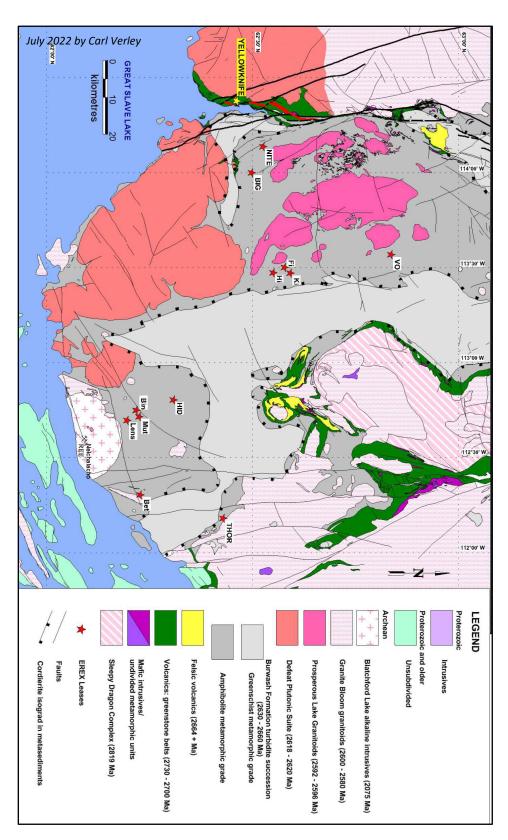
The pegmatitic dykes of the Yellowknife Pegmatite Province and are hosted within metasedimentary rocks of Archean aged Burwash Formation (ca. 2650-2661 Ma, Haugaard et al., 2017). The rocks of the Burwash formation are a greenschist to amphibolite-facies metamorphosed turbidite succession interpreted to have infilled a rifted arc basin (Ferguson et al., 2005)deposited on top of a basement formed of the Sleepy Dragon complex (ca 2819 Ma, Henderson et al., 1987), the Kam Lake mafic volcanics (2722 – 2700 Ma, Isachsen et al., 1991), the Banting Group felsic and mafic volcanic rocks (2660 Ma, Isachsen et al., 1991), and alluvial fan deposits of the Raquette Lake Formation (Mueller and Corcoran, 2001). Exposures of the coeval Clan Lake and Russell Lake felsic volcanic rocks (2656 – 2660 Ma, Mortensen et al., 1992) crop out on west and east exposed edges of the Burwash formation respectively.

The Burwash formation has been subjected to at least four generations of deformation (Martel et al., 2006) resulting in an isoclinally folded and sheared package of rocks. Metamorphism has taken the folded turbidite succession up through amphibolite grade in places, as marked by the cordierite isograd (Henderson, 1985). A number of granitoid bodies intrude the Burwash: these are the 2620-2635 Ma I-type granitoids of the Defeat plutonic suite; predominantly S-type granites of the 2592-2596 Ma Prosperous Lake plutonic suite, and later 2600-2580 Ma granitoids (Ootes, et al., 2011).

The age of emplacement of the pegmatitic intrusions is poorly constrained by limited data. Palmer (2018) has dated apatite from intra- and inter-pluton pegmatites in the Prestige pluton by U-Pb methods and concluded that their age is 2593±6 Ma; virtually identical to that of the Prestige pluton, which is a member of the Prosperous plutonic suite. However the distinct differences in fractionation trends, crystallization ages, and muscovite geochemistry, in addition to a lack of field evidence of gradation, suggests that the Prestige granite is not parental to the spatially associated pegmatites (Palmer, 2018).

# 7.3 **Property Geology**

Figure 7.2: Geological
Map of the
Yellowknife Lithium
Property Lease area



Pegmatites within the Property are resistant features that crop out above the surrounding bedrock, in some cases by 10 to 12 metres, as glacially polished white ribbons, clearly visible from the air, except where lichens have covered them completely. Dykes range in width up to 40 metres and are hosted exclusively in psammites and pelites of the Burwash Formation that have been metamorphosed to amphibolite facies and now consist of fine-grained quartz-feldspar-mica-cordierite schists (Figure 7.2). A summary of basic geological parameter of the dykes is compiled in Table 7.1.

The pegmatites typically cross-cut foliation in the metasediments as at, for example, the BIG and NITE pegmatites. However, in some cases as on the Hi leases the pegmatites appear to make use of fan cleavage in tight folds; on the Fi and THOR leases, pegmatite dykes appear to be emplaced in dilatational openings related to right lateral shear. The pegmatites are not foliated, i.e. clearly emplaced post deformation. Mafic dykes of the 1,790 Ma Contyoto and/or Lac De Gras series cross-cut some of the pegmatites. The 2,200 Ma Indin series may also intrude some pegmatites, thereby putting a lower limit on the pegmatite's emplacement age.

Dyke contacts with wall rock typically exhibit narrow (less than 15 cm) hornfels envelopes in the schists; the pegmatites frequently have aplitic borders that may represent chill zones. The pegmatites consist of coarse bluish-grey albite, salmon-coloured potassium feldspar, watery quartz, pale greenish spodumene, and muscovite with minor dark accessory minerals (magnetite ± columbite-tantalite or cassiterite). Spodumene crystals are commonly found aligned perpendicular to dyke walls. Alteration of the minerals is not obvious in hand specimen, but petrographic studies have indicated a complex history of pegmatite emplacement, cooling, and deuteric alteration that in some cases affected lithium content in spodumene (Ahlborn, 2009).

Table 7.1: Descriptions of lithium enriched pegmatites

Lease	Lease	Exposed Pegmat	ite						
Name	Number	Langth Width		Strike	dip	Host Rock	Strike	dip	
NITE	3196	Length of main dyke. Narrow subsidiary dykes extend to the south for a total length of 1,400 m. Some sections of the main dyke have been offset several 10's of metres by faults parallel foliation in the host schist. A 170 m long pegmatite, with the same orientation as the main dyke, also crops out in the southern part of the lease		035°	70° SE	qtz-biot schist	145°	steep	
		BIG East, up to 5 parallel dykes in a zone 60 to 90 m in width. BIG pegmatites have aplitic border phase ranging from 0.15 to 0.45 m in thickness.	970	6-8	025°	steeply NW	qtz-biot schist	070°	steep
BIG	3197	BIG North, up to 3 dykes in a zone up to 30 wide. May be a northwesterly offset extension of the BIG East	210	4-14	025°	steeply NW	qtz-biot schist	070°	steep
	BIG West, up to 4 parallel dykes in a zone varying from 50 to 150 m in width. Spodumene crystals, < 30 cm, are evenly distributed throughout the dykes, constituting 15% to 30% of the rock.		1200	6-7	025°	steeply NW	qtz-biot schist	070°	steep
Hi	5103, 5104	Pinches out to the south but thicken to the north.  Dyke appears to have intruded a fan cleavage of an antiform. Extensions of the Hi dyke occur to the north of the lease. A narrow (~1m) NW striking diabase dyke cross-cuts the pegmatite near its		up to 33, averag e 23	030°	modera tely to NW	qtz-biot schist	030°	NW

Fi	3209	Fi Main dyke Segmented and non continuous over at total 1.8km, strike to the north. The longest segment of 900 meters is up to 27 meters wide.	940	18-25	0°	90°?	qtz-biot schist	0°	90°?
		Fi SW dyke A single body forming a 5 meter high ridge up to 36 meters wide. Strikes 30 degrees. Composed of aplictic and pegmatitic phases	900	18-40	030°	90°	4-2-3-3-3-3-3-3	0°	90°?
Ki	3208	Ki Dyke is segmented by northeasterly striking faults. 425 m of dyke are exposed along a 615 m northwesterly trend. The northern section of the dyke is split by a hornfels screen; hornfels inclusions are common in the southern section of the dyke.	615	up to 20, average 12	145°	60°-80° SW qtz-biot schist		145°	60°-80° SW
VO	3203	Comprised of 7 dykes	72 to 232	4-12	046°- 065°	vertical	qtz-biot schist	070°- 150°	90°?
BET	3195	Tantalum-bearing pegmatite	105	8	020°	Steep to WNW	qtz-biot schist		
BIN	3199	segmented dyke	120	12	080°	Steep?	qtz-biot schist		
HID	3200	segmented dyke	200	3-6	080°	Steep?	qtz-biot schist		
LENS	3194		91	up to 18	170°	Steep?	qtz-biot schist	170°	Steep?
MUT	3198		91	5	050°	Steep?	qtz-biot schist	050°	Steep?
THOR	3192	Complex of interconnected dykes; the East dyke is segmented, but continuous for 900 m, striking at 140°, and is at its north end linked to the Central dyke that trends westward at 290° toward the "Sidehill" dyke, which strikes at 135°. The northern part of the complex spans a width of 380 m. Widths of dykes vary, but main parts of east and central dykes range from 10 to 20 m.					qtz-biot schist		

### 7.3.1 Property Mineralization

Lithium mineralization in the pegmatites occurs as spodumene which forms a significant amount of the rock by volume (Figures 7.3 and 7.4) with lessor amblygonite. Most of the Li-pegmatites consist of quartz, feldspar, spodumene, amblygonite and mica. Textural zonation is limited to aplitic phases of quartz and feldspar confined mainly along the margins of dykes. Spodumene is a significant rock forming constituent of the pegmatites, locally ranging from 15% to more than 30% of the rock by volume. There appears to be a regional scale mineralogical zoning with simple pegmatites clustering in the northwest, and complex, LCT (Lithium, Cesium, Tantalum enriched) pegmatites hosting Be-Cs-Li-Nb-Ta, as demonstrated by the BET pegmatite, clustering in the southeast proximal to the Blatchford Lake alkaline intrusive complex (Mosher, 1969 and Morrison, 1975).



Figure 7.3: Spodumene in pegmatite, In situ, THOR Central Dyke

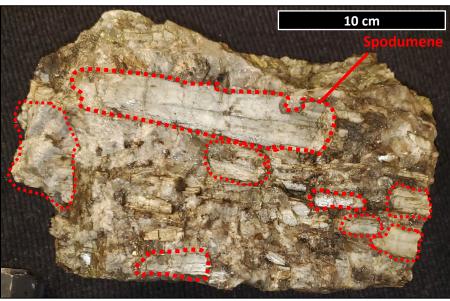


Figure 7.4: Sample collected by author from Trench located on the Nite lease. Sample 35% spodumene from the Nite pegmatite. Some coarse grained spodumene crystal are outlined in red illustrate for crystal habit morphology.

Li rich Pegmatite (Name)	Length (m)	Ave. Width (m)	Channel Sample Ave. Grade (Li <sub>2</sub> O %)	Notes
Fi Main	1800	15	1.1	Linear dyke which branches into multiple sections for approximately 900m. Southern half not systemically channel sampled
Fi Southwest	900	20	1.3	Linear dyke which varies in width from 5 to 37m
Ki	600	12		*spodumene crystal counts averaging 20- 25%
Hi (Shorty)	400	25	1.07	Linear dyke that is up to 40m wide
Big East	900	20	1.45	Pegmatite dyke swarm over 150m width; 20m average width of dykes within 150m corridor
Big West	1000	20	1.53	Pegmatite dyke swarm over 150m width; 20m average width of dykes within 150m corridor
Nite	900	7	1.46	Linear dyke ranging from 4 to 10m in width; average of 9m
Thor	600	300	1.59	Complex dyke swarm
vo			1.48	Dyke swarm of seven individual dykes over an area of a 1,300m x 500m area
Bet	100	6	2	Historic tantalum mine, spodumene crystals up to 2m in length
Bin	125	12		*spodumene crystal counts averaging >25%
Hid	200	6	1.56	Discontinuous dyke: two 5 kg channel samples averaged 1.56% Li2O
Lens	100	12	1.97	Sub-vertically dipping dyke, spodumene crystals up to 50cm long
Mut	80	5	2.2	Spodumene crystals up to 30cm long; crystal counts between 25-35% spodumene

Table 7.2:Showing database (<a href="https://app.nwtgeoscience.ca/Searching/ShowingsSearch.aspx">https://app.nwtgeoscience.ca/Searching/ShowingsSearch.aspx</a>), as well has historic geologic maps produced by Canadian Superior Exploration during the 1970's exploration campaign which are available in NWT assessment reports.

# **8 DEPOSIT TYPES**

### **Lithium Pegmatites**

Pegmatites and associated host rocks throughout the world range in age from early Precambrian to Tertiary. In Canada, most of the lithium bearing pegmatites are Late Archean (Kenoran) or Late Proterozoic (Grenvillian) in age; some pegmatites are associated with Phanerozoic intrusive rocks but are of only minor commercial significance. Most pegmatites occur in orogenic belts, although the type of pegmatite formed differs according to the nature of its geological setting. Abyssal class pegmatites may be associated with migmatitic granite typically occur in migmatitic rocks of upper amphibolite to granulite facies metamorphism. Muscovite class pegmatites occur in slightly lower grade Barrovian-type metamorphic terranes, mainly amphibolite facies. For both abyssal and muscovite class pegmatites, the host rocks represent deeply eroded root zones of orogenic belts (Eckstrand, 1996).

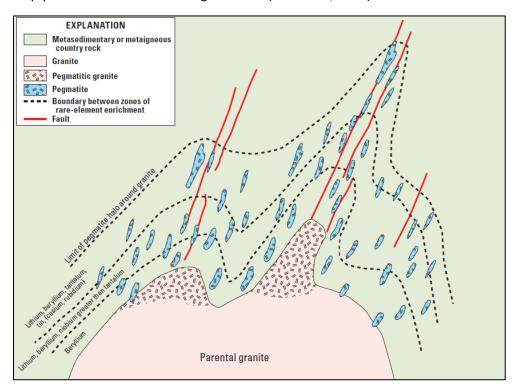


Figure 8.1: Idealized concentric regional zoning pattern in a pegmatite field, taken from Bradley et al. 2010 adapted from Galeschuk and Vanstone (2005) after Trueman and C'erný (1982)

Most Lithium (Cesium-Tantalum) pegmatites are the differentiated end members of peraluminous, S-type granitic melts. Some are related to metaluminous granites and some to I-type granites (Martin and De Vito, 2005). They are highly enriched in the incompatible elements Li, Cs, and Ta, and are distinguished from other rare- element pegmatites by this diagnostic suite of elements.

Many pegmatites occur as dyke-like or lenticular bodies but they range considerably in both shape and size. Pegmatites in high grade metamorphic rocks form irregular, tabular to ellipsoidal bodies that are

typically conformable to the foliation of the host rocks. Some pegmatites in lower grade metamorphic rocks are conformable with the host rocks, but others occupy discordant, crosscutting structures such as tension faults. Pegmatites formed within larger granitic bodies have bulbous to highly irregular shapes. Most pegmatites range in size from a few 'metres to hundreds of metres long and from 1cm to several hundred metres wide, although a few pegmatites are much larger.

In some cases, an LCT pegmatites can be spatially and genetically linked to an exposed parental granite; in other cases, no such parent can be observed at present levels of exposure. Most LCT pegmatites are hosted in metasedimentary or metavolcanic (supracrustal) country rocks, which are typically metamorphosed to low-pressure upper greenschist to amphibolite facies (Černý, 1992). Less commonly, LCT bodies intrude granitic or gabbroic rock. In some districts, pegmatites show a regional mineralogical and geochemical zoning pattern surrounding an exposed or inferred granitic pluton, with the greatest enrichment in incompatible elements in the more distal pegmatites (Trueman and Černý, 1982).

## 9 EXPLORATION

### 9.1 LiDAR

In 2022 KBL Resources Group of Thunder Bay, Ontario was commissioned by EREX to conduct a LiDAR and digital imagery survey of five areas (Bighill Lake, Harald Lake, Buckham Lake, Faulkner Lake, and Tanco Lake) covering its mineral leases in the Yellowknife area (*Figure 9.1*)

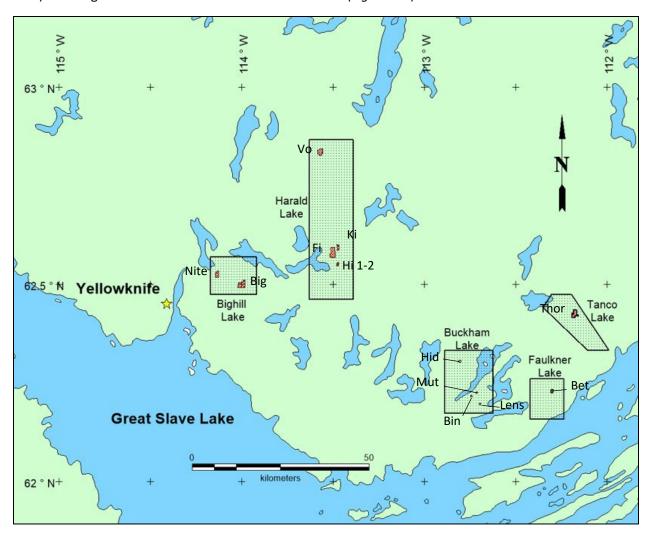


Figure 9.1: Map illustrating 5 blocks covered by LiDAR survey

The areas surveyed total 1,185 square kilometres in area; work was undertaken on September 17<sup>th</sup> and 18<sup>th</sup>, 2022.

LiDAR survey was optimized to capture 8 points per square metre using a Riegl VQ-780ii LiDAR sensor, with 1,800 kHz laser pulse repetition rate and scan frequency up to 600 Hz. Deliverables included LAZ files of point cloud data with ground correctly classified; bare-earth digital elevation and hill-shade digital terrain models of each block; LiDAR tile index; intensity image of each block, and contours at 1 metre intervals. Survey was flown from a fixed wing aircraft and an airspeed of 130 knots.

Imagery was captured using a Phase One iXU-1000 RS Digital Mapping Camera. Imaging was optimized for a ground sample distance of 15 to 20 centimetres. Images were orthorectified, RBG colour-balanced, and provided in 1 km<sup>2</sup> mosaic tiles in both GeoTiff and ECW formats.

# 9.2 Mapping

In September 2022, Erex commissioned a visual assessment of the exposed mineralisation on the Yellowknife Pegmatite property and to complete geological and structural mapping of the dykes. The work was carried out from September 8 to October 1<sup>st</sup>, 2022, and was divided into two phases.

The initial phase of the work took place from the 8<sup>th</sup> to 11<sup>th</sup> of September and consisted of helicopter-supported initial overview visits of all of the helicopter-accessible leases within the land package. This resulted in short (typically 2-6 hour) visits of the Big, Fi, Hi, Ki, VO, Thor and Bet leases by geologists F. Berniolles, M. Senkiw and L. Potter, and served to validate, the accessibility, land cover, extents and visible mineralization of select showings on each of the leases listed above. This overview campaign was carried out using helicopter access from Yellowknife. Flight services were provided by Great Slave Helicopters Ltd. (using an Aérospatiale/Airbus AS350B3)

Second phase work took place from September 12 to October 1, and consisted of detailed structural characterization of pegmatite dyke margins of the western group of leases, in support of future modelling efforts. Historical mapping proved reliable in terms of general outcrop shape, but except for leases where drilling had already occurred, little information on dyke orientation was available. This second-phase work was carried out by geologists F. Berniolles and M. Senkiw for the Nite and Big leases, and then by F. Berniolles for the Fi, Hi, Ki, and VO leases.

Approximately 400 structural measurements and 475 linear dyke-margin determinations were collected during the structural mapping phase of the program. These data were used to determine the attitudes of the dykes, and positioning of the dykes respectively. The latter was of particular importance in areas of heavier regrowth, where aerial/satellite photography is insufficient to reliably place contacts. Furthermore, a collection of geospatially located photographs was developed, including a range of relevant images of physiography, dyke geometries, mineralization, and previous workings (trenching and blasting).

The following maps (figure 9.2, 9.3 and 9.4) illustrate the scope of the work that was completed on the property.

The following maps show the extent of the pegmatite dykes on the Big, Thor Hi, Fi and Ki properties. These were determined using 2022 lidar data, 2022 aerial photographs, and structural measurements from outcrops and boundary mapping.

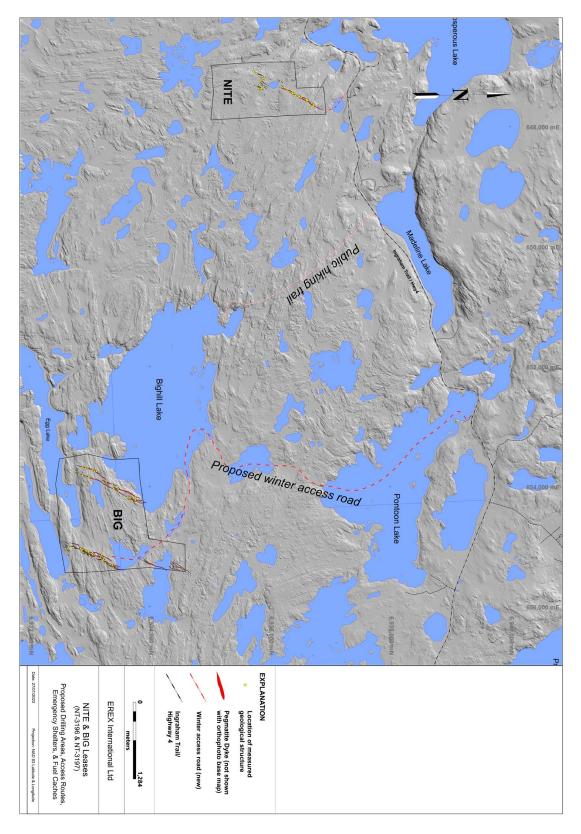


Figure 9.2: Map illustrating locations of the structural measurements collected during mapping of the pegmatites on the Big and Nite leases

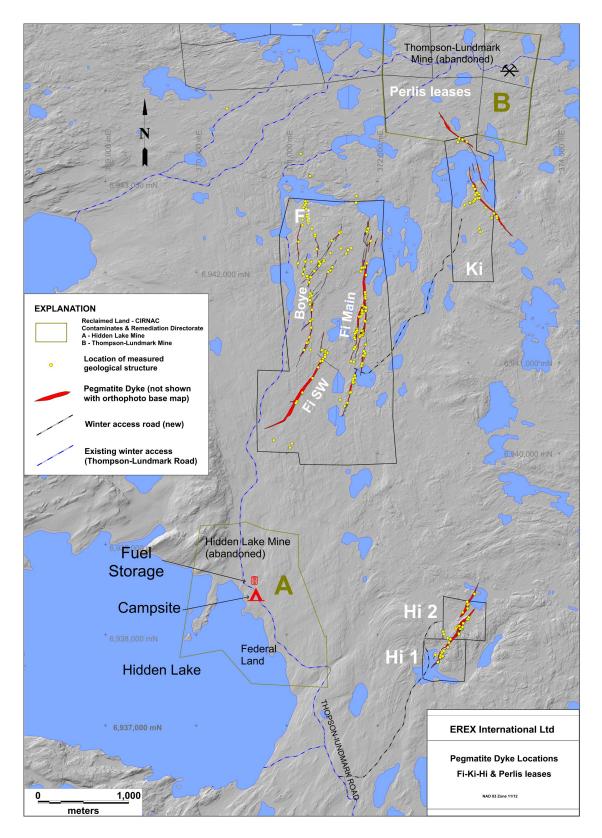


Figure 9.3: Map illustrating locations of the structural measurements collected during mapping of the pegmatites on the Hi, Fi, and Ki leases

This second phase of work was carried out in part from Yellowknife, and partially from temporary flycamps. All helicopter services were provided by Acasta Helicopters Ltd, using a Bell 206LR.

Data collection was carried out using a Trimble Juno 5 SBAS-enabled GNSS receiver running ESRI ArcPad. Data was transferred nightly to a laptop running ESRI ArcMap, for integration into the geodatabase.

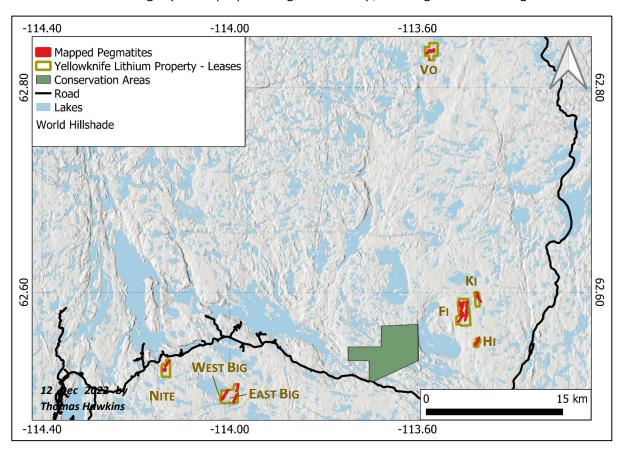


Figure 9.4: Map showing the pegmatites on Yellowknife Lithium Property leases that were mapped during the 2022 exploration program

### 9.2.1 Results

Where such measurements were possible, a dyke-margin determination was made on either side of the dyke proximal to its termination, or on main dyke margins and adjacent apophyses or tributary dykes: this data was used to calculate the intersections of dyke tips, which was then subsequently used during 3D modelling as a proxy for the attitude of the tear-line, i.e., the tip of each dyke. Ultimately this interpreted product yielded the plunges for each dyke or group of dykes used in the 3d modelling. While some variation in dyke dips is noted, in most cases the dips of dykes was rather strikingly constant and reliable within each lease.

### 9.2.2 Interpretation and Synopsis

Field data was used, in conjunction with historical data and aerial imagery, to generate an interpreted map product. Interpretation work was carried out by F. Berniolles from October 4-7 and October 24-26, 2022.

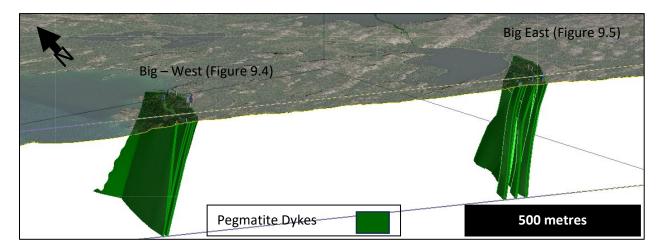


Figure 9.5: Sliced view through a 3D model constructed using mapping data collected in 2022.

Dykes are for the most part moderately to steeply raking within (generally) steep planes, in most of the leases. Based on mapped field relationships it is thought that the pegmatitic dykes are believably contemporaneous with that of the Prosperous Suite S-type granitoids; while the main body of each dyke is not notably deformed, early, apparently precursor, quartz-rich pegmatitic dykes and dykelets are abundantly folded, and small pegmatite and allied granitoid dykes, dykelets and apophyses are significantly shortened. Mullioning is present on the margins of most dykes, and local evidence of small-scale re-orientation (perhaps via a drag-folding mechanism) of pre-existing fabrics along dyke margins occurs. The dykes are therefore interpreted to be late syn-deformational.

Aside from very narrow, <50cm and generally <10cm black, hornfels-like features in dyke-marginal sediments, no wider scale alteration or distinctive proximity-dependent visible features were noted around the intrusive bodies.

The author is aware that LiFT Power has commenced the program recommended in the report and has disclosed results from 27 holes in press releases dated the 14<sup>th</sup> of June, 25<sup>th</sup> of July, 21<sup>st</sup> of August, and 6<sup>th</sup> of September 2023. A description of this work is outside the scope of the report given that the property has no current resource estimates.

# 10 DRILLING

As referenced above, the author is aware that LiFT Power has commenced the program recommended in the report and has disclosed results from 27 holes in press releases dated the 14<sup>th</sup> of June, 25<sup>th</sup> of July, 21<sup>st</sup> of August, and 6<sup>th</sup> of September 2023. A description of this work is outside the scope of the report given that the property has no current resource estimates.

Historical drilling was completed by previous explorers, including Canadian Superior Exploration Canada Ltd in the 1970's, who initiated an evaluation of some of the pegmatites. More than 3,800 metres of drilling has been conducted on the Leases. This work was described under Item 6: History. In addition, a summary of the drilling conducted on the Leases along with plans and sections is compiled below.

# **Drill Hole Summary**

Table 10.1: Summary - Historical drilling collar location, orientation, and significant intercepts of pegmatitic rock.

	NAD83						Significant Pegmatite Intercepts				
Lease	Hole ID	Easting	Northing	Elev.	Azimuth	Dip	From	То	Length	Li2O	
				(m ASL)	(°)	(°)	(m)	(m)	(m)	(%)	
NITE	28491	338849	6937113	205	305	-45	61.97	73.76	9.05	1.83	
BIG-W	6	344858	6933338	211	130	-45	22.07	154.23	6.58	n/a3	
BIG-W	6						73.85		4.33	n/a	
BIG-W	6						80.92		4.72	n/a	
BIG-W	7	344665	6933141	205	133	-45	61.57	77.27	14.02	n/a	
BIG-W	8	344624	6933060	208	112	-45	76.2	114	5.33	n/a	
BIG-W	9	344618	6933002	210	113	-45	70.93	77.42	5.27	n/a	
BIG-W	10	344593	6933068	208	112	-70		222.81			
BIG-W	11	344710	6933016	209	120	-45	190.81	205.44	11.89	n/a	
BIG-W	12	344775	6933168	204	120	-45	208.03	216.41	6.25	n/a	
BIG-W	13	344737	6933098	206	120	-55		227.69			
BIG-W	14	344661	6933252	202	120	-45	139.45	150.88	7.77	n/a	
BIG-E	M-1	346121	6933280	201	120	-45	88.24	184.71	1.16	n/a	
BIG-E	M-1						134.42		6.28	n/a	
BIG-E	M-1						142.28		14.51	n/a	
BIG-E	M-1						170.6		7.89	n/a	
Hi	S-1-87	372776	6937946	256	130	-45	41	58	10	0.76	
Hi	S-2-87	372806	6938012	258	130	-45	76.45	95	15.8	0.88	
Hi	S-2-87						84.55		6.05	1.21	
Hi	S-3-87	372806	6938012	258	130	-85		166		n/a	
Hi	S-4-87	372759	6937959	255	130	-60		106		n/a	
Hi	S-5-87	372857	6938064	255	130	-50	55.5	84.5	6.9	0.73	
Hi	S-5-87						70.2		7.2	1.14	
Hi	S-6-87	372843	6938076	250	130	-65	115.8	149.75	5.8	0.65	
Hi	S-7-87	372862	6938144	248	130	-55	74.5	118	26.55	0.68	
Hi	S-7-87						87.9		7.1	1.03	
Hi	S-8-87	372862	6938144	248	130	-80	112.07	173.4	27.03	0.73	
Hi	S-8-87						128.85		10.25	1.12	
Hi	S-9-87	372913	6938183	248	92	-55	67.7	124.2	25.85	1.15	
Hi	S-9-87						71.8		19.7	1.42	
Hi	S-10-87	372666	6937857	248	130	-45		70.1		n/a	
Hi	S-11-87	372666	6937857	248	130	-70		115.9		n/a	
Ki	Ki-78-1	373307	6942557	257	47	-55		52.91			
Ki	Ki-78-2	373307	6942557	257	0	-90		94.79			
Ki	Ki-78-3	373222	6942625	257	45	-45		86.87			

	•	NAD83					Significant Pegmatite Intercepts			
Lease	Hole ID	Easting	Northing	Elev.	Azimuth	Dip	From	То	Length	Li2O
				(m ASL)	(°)	(°)	(m)	(m)	(m)	(%)
THOR	Thor-1	439170	6922660	307	210	-45		44.81		
THOR	Thor-2	439185	6922654	307	200	-45		39.62		
THOR	Thor-2									
THOR	Thor-78-1	439114	6922726	300	205	-45		79.86		
THOR	Thor-78-2	439173	6922699	304	0	-45		74.01		
THOR	Thor-78-3	439173	6922699	304	20	-45	43.74	58.83	10.67	
THOR	Thor-78-4	439231	6922669	303	203	-48	29.26	58.83	21.03	
THOR	Thor-78-4						30.48		17.37	
THOR	Thor-78-5	439231	6922669	303	0	-90	46.63	64.92	15.7	
THOR	Thor-78-5						47.55		14.17	
THOR	Thor-78-6	439294	6922642	301	20	-45	30.39	43.59	7.71	
THOR	Thor-78-6						31.09		4.53	
VO	VO-78-1	368558	6969710	298	152	-45	55.93	95.1	2.9	
VO	VO-78-1						58.83		2.74	
VO	VO-78-1						66.75		2.5	
VO	VO-78-2	368635	6969731	304	154	-45	76.51	89.31	3.05	
VO	VO-78-2						79.55		3.05	
VO	VO-78-2			-			82.6	-	2.68	

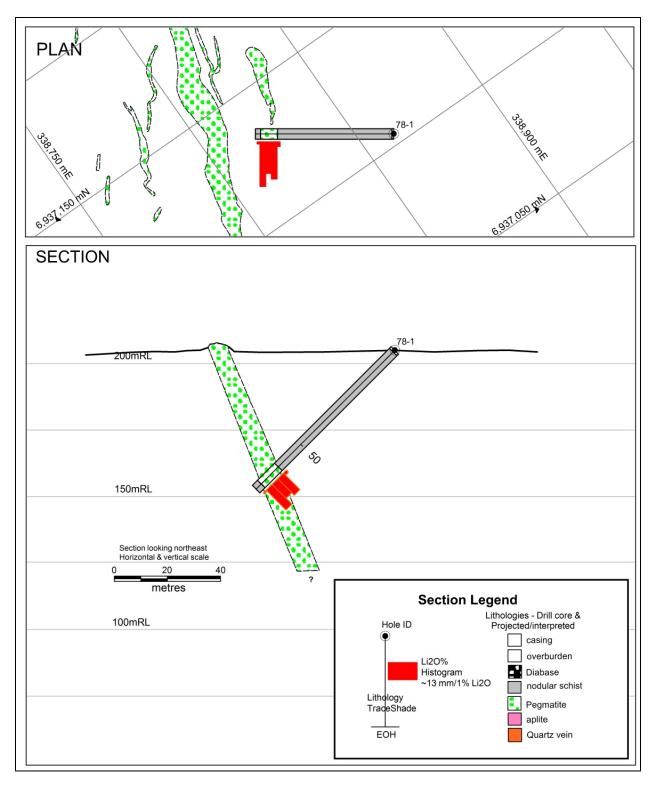


Figure 10.1: NITE lease Drill Hole 78-1, Plan and Section

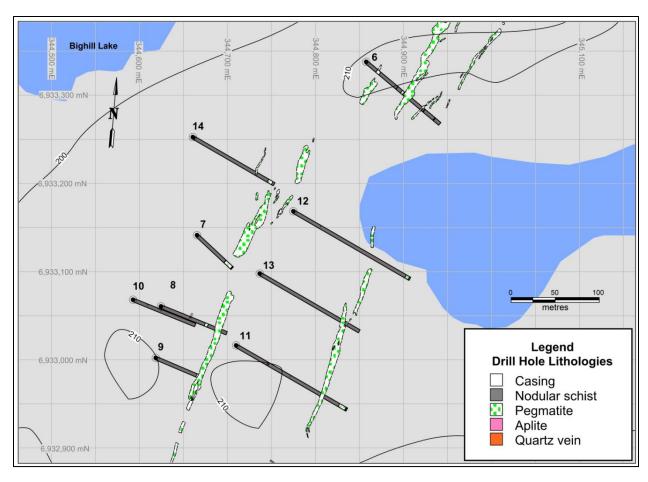


Figure 10.2: Plan of the drilled portion of BIG West Pegmatite complex



Figure 10.3: BIG East, plan map drill hole M-1

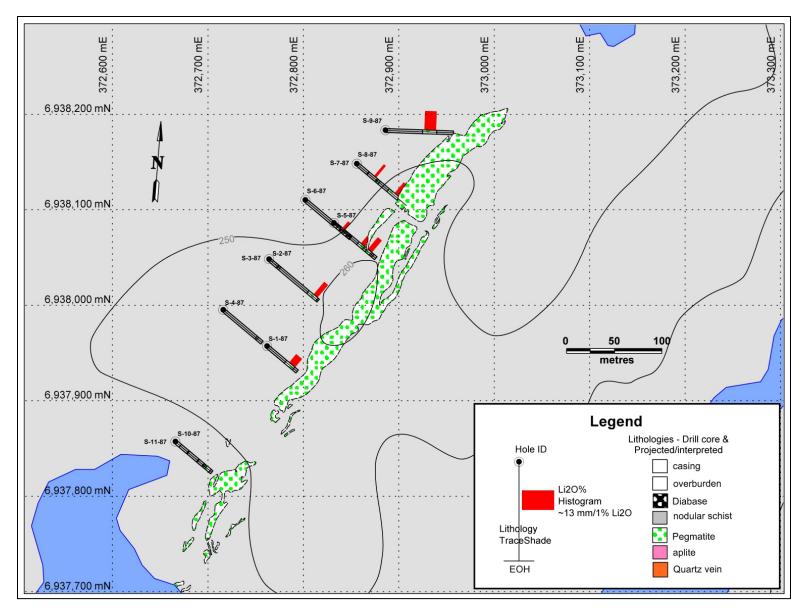


Figure 10.4: Hi lease drill hole plan map

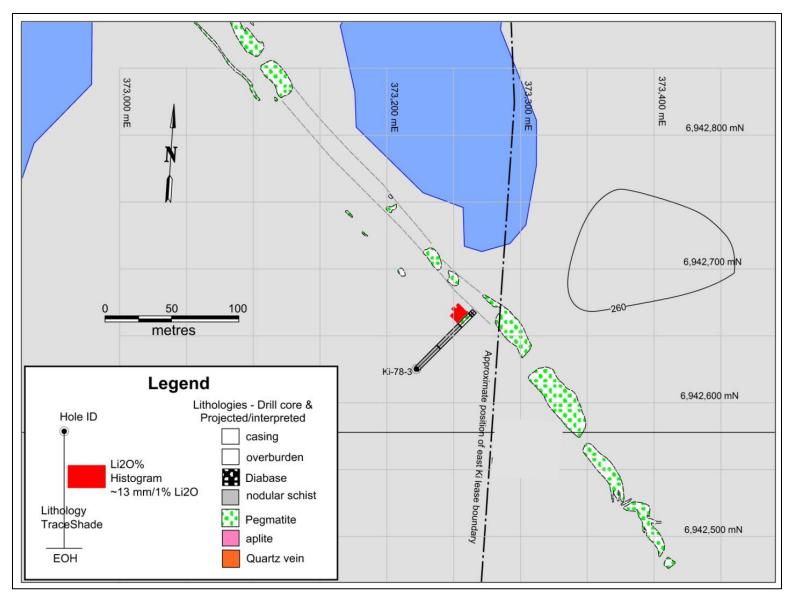


Figure 10.5: Plan map of drill holes on Ki lease

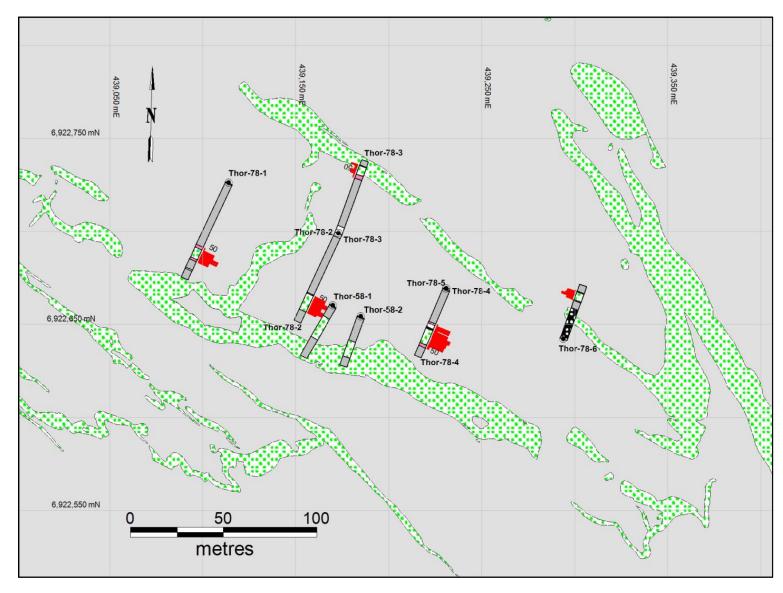


Figure 10.6: Plan map of drilled area on THOR pegmatite complex

## 11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

To date, Li-FT has not collected any rocks for analysis.

#### 11.1 Drilling and Trenching 1975-1979

Drilling completed between the 1975 and 1978 was completed by Canadian Superior Exploration Ltd., drill core was split with a core splitter, half the sample was place in sample bags and sent to Lakefield Research of Canada Limited of Lakefield Ontario for analysis.

Trench sampling was completed across freshly blasted rock. Rock chips were collected continuously across sample intervals then placed in bags and sent to Lakefield Research of Canada Limited for analysis.

Lakefield Research determined lithium content by sodium peroxide fusion: the rock was crushed and mixed with sodium peroxide and sodium carbonate mixture, the solution is diluted with water and hydrochloric acid. The resulting mixture was analysed by Atomic Adsorption Spectroscopy. Lakefield Research currently operates under the name SGS Lakefield Research Ltd. It is currently ISO accredited to ISO/IEC 17025

#### 11.2 1986-1987 Trench sampling and Drilling

Samples collected during the 1986 trenching program by Continental Pacific Resources Inc. on the Shorty Claims were sent to Loring Laboratories located in Alberta for analysis. Samples were taken by continuous chip sampling across 1.5 m or, infrequently, 2.0 m widths. Metasedimentary inclusions were not sampled. No information is included about analytical methods within the assessment report (Senkiw, 1986).

Core drilled during the 1987 drilling campaign was split on site, half the sample was sent to Barringer Magenta Laboratories in Yellowknife, Northwest Territories for analysis. Although certificates are presented in assessment report no analytical methodology is listed. No analytical results from external blank, standard, or duplicate samples were reported in the available data.

Bulk sampling by Beaty Geological Ltd. in 1987 was carried out on the Fi lease. An estimated 1.15 tonnes of material was blasted from within the pegmatites on the property. Material was representative of the spodumene rich mineralisation within the pegmatite zones on the lease. Samples were sent in burlap sacks to Bacon Donaldson and Associates Ltd. located in Vancouver, BC, Canada. This study was considered an initial metallurgical test of the mineralogy.

The author is of the opinion that the historical work presented in this report of good quality and was conducted under best practices at the time. Analysis by sodium fusion is an analytical technique still in use today. No analytical results from external blank, standard, or duplicate samples were reported in the data tables as required by modern QAQC standards.

## 12 DATA VERIFICATION

The author has reviewed the data in the historical assessment reports that cover work done on the areas now held by the Leases, as well as data acquired by Li-FT.

The data presented in this report have been compiled from assessment reports retrieved from publicly available reports, various publications, news releases and from technical reports presented to the author by Li-FT. The historical data obtained from previous assessment reports, Northwest Territories governmental reports was reviewed, and the information therein was extracted was generated with proper procedures; relevant data was tabulated or georeferenced and plotted to confirm the information was relevant to the property. The information and data were compiled in a project GIS and further reviewed by the author for general validity. Based on these reviews it is the authors opinion that the information has been accurately transcribed from the original source and is suitable to be used. The author is of the opinion that the datasets are adequate and reliable for the purposes of this technical report. The leases and title information were provided by the company the location and details of the leases were checked using the NWT Mining Recorder's website and the Canada Lands Survey Records website,

The Yellowknife Lithium property is at an early stage of exploration and the samples collected are not intended to be used for a mineral resource or mineral reserve estimate. The data presented in this report are adequately reliable and accurate for the purpose of the report.

The author visited the property on two occasions: the first was on the 25<sup>th</sup> of November, 2022 to the Nite lease and the second visit, on the 16<sup>th</sup> of September 2023, was to the Big, Hi and Fi leases.

The aim of both visits was to verify the historical work conducted on the leases which have been the focus of previous exploration campaigns and have some of the highest percent content of spodumene recorded. Access to the leases was by helicopter from the city of Yellowknife, once on the ground the author traversed along the mapped spodumene-rich pegmatitic dykes towards the location of trenches where previous workers have the reported the highest % abundance of spodumene within each of the leases. The author used a GPS, compass and tape-measure to verify the location, orientation, and extent of the historical workings. The author examined and photographed mineralization and alteration around the historical workings to verify statements made by previous workers about the geology of the showing.

The author found evidence of the trenching carried out during historical exploration campaigns. The access, location and extent were found to be as described by previous workers. The author collected several samples from trenches and surrounding rock. The author verifies that the crystal morphology, mineralogy, alteration, and style of spodumene of mineralization is consistent with that described by previous workers. The author also independently confirmed GPS readings at the Big, Hi, Fi, Nite and Big showings as a check on the location accuracy being recorded by field personnel. The author was able to use aerial photographs, satellite imagery and LiDAR to confirm the location, extent and orientation of pegmatite outcrops and trenches. These were found to be consistent with historical data and records.

The author collected 3 samples from Nite lease: two from within a trench of the pegmatite dykes that reported the highest content of spodumene. Samples were representative of the rocks visible in the trench. Visual assessment of the samples suggested that the estimated content of spodumene, lithology,

and mineralogy was consistent with the historical reported values. The 3<sup>rd</sup> sample was collected from the host rock surrounding the pegmatite dykes, the lithology of the sample was consistent with that described in the reports. Both mineralised samples were transported and kept secure by the author, they were broken to expose a fresh surface photographed in bright white light and examined under ultraviolet.

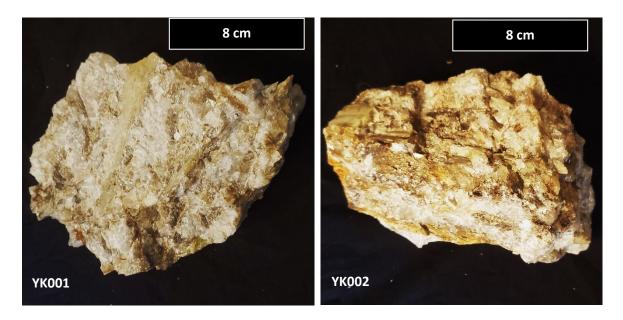


Figure 12.1: Photographs of samples YK001 and YK002 collected by the author from the spodumene rich pegmatite dykes on the Nite lease.

Samples YK001 and YK002 were taken from different locations 5 metres apart from the main trench on the Nite showing. Sample YK006 was a field duplicate of sample YK001 taken in order to determine local variability of lithium in the rock. Lithium value of the rocks that are reported in parts per million by the lab have been multiplied by a factor of 2.153 to convert them to a Li<sub>2</sub>O value.

Table 12.1: Results of assays from samples taken on the Nite showing in 2022

		LOCATION			
Sample				Li	Li <sub>2</sub> O
number	Description	NAD83 11N	NAD38 11N	(ppm)	(%)
	An estimated 25% spodumene				
YK001	rich grab sample collected	647505			
	from trench in Nite pegmatite		6936516	8160	1.76
	An estimated 35% spodumene				
YK002	rich grab sample collected	647510			
	from trench in Nite pegmatite		6936513	14100	3.04
BLANK	Quartz blank			59	0.01
STANDARD	OREAS 506			51	0.01
DUPLICATE	Duplicate of sample YK001			8810	1.90

The author personally delivered 3 samples to ALS labs in North Vancouver with the purpose of determining the content of lithium in the mineralized rock. ALS Canada Ltd is ISO/IEC 17025:2005 Accredited by the Standards Council of Canada. LiFT and the author are independent of ALS Canada Ltd.

Samples were crushed and analysed at ALS labs in North Vancouver utilizing a sodium peroxide fusion (method code ME-MS89) to give a complete lithium analysis of the sample. Results from standard and blank were within acceptable limits considering the size and lithium content of the mineralized rock samples. The field duplicate that was collected differed in lithium content by 7.3% from sample YK001, this is well within what was expected given the coarse nature of mineralization on the property.

In the author's opinion, all mapping and measurement data collected during the 2022 exploration were collected in a manner consistent with industry standards.

## 13 MINERAL PROCESSING AND METALLURGICAL TESTING

There are no current studies on the mineral processing and metallurgical testing on the project to date.

13-1

# 14 MINERAL RESOURCE ESTIMATES

There are no mineral resource estimates on the project.

## 15 MINERAL RESERVE ESTIMATES

Item 15 Mineral Reserve Estimates of Form 43-101F1 do not apply to the Property that is the subject of this technical report as this is not an advanced property.

# 16 MINING METHODS

Item 16 Mining Methods of Form 43-101F1 do not apply to the Property that is the subject of this technical report as this is not an advanced property.

# 17 RECOVERY METHODS

Item 17 Recovery Methods of Form 43-101F1 do not apply to the Property that is the subject of this technical report as this is not an advanced property.

# **18 PROJECT INFRASTRUCTURE**

Item 18 Project Infrastructure of Form 43-101F1 do not apply to the Property that is the subject of this technical report as this is not an advanced property.

## 19 MARKET STUDIES AND CONTRACTS

Item 19 Market Studies and Contracts of Form 43-101F1 do not apply to the Property that is the subject of this technical report as this is not an advanced property.

# 20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

Item 20 Environmental Studies, Permitting and Social or Community Impact of Form 43-101F1 do not apply to the Property that is the subject of this technical report as this is not an advanced property.

## 21 CAPITAL AND OPERATING COSTS

Item 21 Capital and Operating Costs of Form 43-101F1 do not apply to the Property that is the subject of this technical report as this is not an advanced property.

## **22 ECONOMIC ANALYSIS**

Item 22 Economic Analysis of Form 43-101F1 do not apply to the Property that is the subject of this technical report as this is not an advanced property.

## 23 ADJACENT PROPERTIES

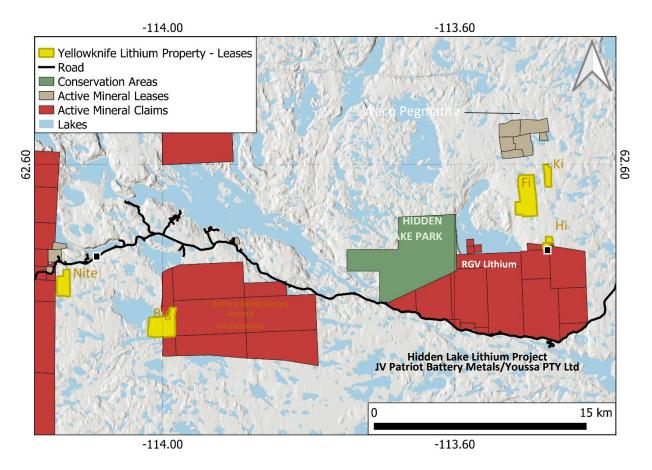


Figure 23.1: Lithium showings in the area of the Yellowknife Lithium Property, data taken from the NWT geoscience showing database.

There are several pegmatite properties adjacent to the leases in the Yellowknife Lithium Property identified on Figure 23.1 that were explored for spodumene. The limited data from these showings indicate that they were considered subeconomic at the time of investigation in the 1950s to 1970s. Adjacent properties include: the Waco pegmatite located north of the Fi and Ki showings currently on leases registered under the 100% ownership of Perlis Enterprise Inc; and the Hidden Lake Lithium project located south of the Hi 1-2 claims (NT5103 and NT5104) currently on mineral tenures owned under a joint venture between Patriot Battery Metals and Youssa PTY Ltf, and the GEO5 and Pancho showings located on mineral tenures owned by RGV Lithium Exploration.

A qualified person has been unable to verify the information and that the information is not necessarily indicative of the mineralization on the property that is the subject of the technical report.

#### The Waco Pegmatite

The following account of the Waco Pegmatite is taken from the NWT geoscience showing database.

The Waco pegmatite is a member of the Yellowknife pegmatite field, a series of pegmatite bodies located east of Yellowknife that are probably related to Late Archean Age granitoid intrusions of the Prosperous Granite suite. These pegmatites tend to occur in Burwash Formation turbidites that have been metamorphosed to lower amphibolite facies. The Yellowknife pegmatite field exhibits a broadly zoned distribution around larger plutons in the area, progressing outward from an inner zone dominated by Berich pegmatite to a medial zone that is Cs-Ta-rich to a distal zone that is Li-rich. The Waco pegmatite is a steeply dipping, tabular or sill-like body that strikes Az 125 degrees. It intrudes Burwash Formation nodular biotite schists roughly parallel to bedding. Where it is exposed, it is a simple unzoned pegmatite that is 415 feet long and up to 25 feet wide. It is composed of coarse-grained K-feldspar, cleavlandite, quartz and muscovite, along with significant columbite-tantalite, and lesser amounts of beryl, spodumene and amblygonite. Thompson-Lundmark Gold Mines examined the dyke in 1961 but the results of this work are not available. According to Lord (1951), it holds promise as a Ta-Nb resource, and according to NMI, grade was below that required for economic development. It appears that very little exploration was directed at this pegmatite in the Yellowknife pegmatite field.

# 24 OTHER RELEVANT DATA AND INFORMATION

The author is not aware of any other relevant information that is not included in this report.

#### 25 INTERPRETATION AND CONCLUSIONS

Spodumene-rich pegmatites in the Yellowknife Pegmatite Province have that have been reported since the 1940s. Since the late 1970s numerous discreet spodumene bearing pegmatites have been mapped and tested within 120km of the city of Yellowknife. Mapping, trenching, and drilling that began in the 1970s by the mineral exploration company Canadian Superior Exploration Ltd showed that spodumene locally ranges in these pegmatic dykes from 15% to more than 30% of the rock by volume, is often found across significant widths, and extends over considerable strike lengths at surface (up to 100s of metres).13 individual leases that comprise the Yellowknife Lithium Property that are the subject of this report cover a significant number of the discreet spodumene rich pegmatitic bodies that were identified by mapping and prospecting in the 1950s.

Historical surface trenching and selective diamond drilling has given very good indication of the near surface spodumene content and extent of the spodumene rich in pegmatites within the leases of the Yellowknife pegmatite property.

Mapping in 2022 by EREX has confirmed the location and geometry of the spodumene pegmatites within the Yellowknife Lithium Project. A significant study based on 422 structural mapping points collected from the dykes has allowed a 3D interpretation of the dykes to depth. The dykes in general dip steeply to the west. Due to the competence and prominence of the dykes above the surrounding Burwash formation rocks LiDAR and aerial imagery were effective in providing very accurate location data for the dykes. The location of historical trenches was also clear in the LiDAR data and aerial imagery.

Historical metallurgical work on the of the lithium content of the spodumene returned 6.94% and 8.25% from two different studies. Though the values are consistent for known values of lithium in spodumene the difference between the two is significant, a detailed study should be done to assess the lithium content of the spodumene across all of the pegmatites on all of the leases.

The leases are all located within 120 km of the regional capital of Yellowknife t. The Nite, Fi, Ki, BIG, and Hi minerals leases are located within 60 kilometers of the city of Yellowknife and are within 8km from the asphalt-surfaced Ingraham Trail. The other leases are all considered remote and can only be accessed by floatplane or helicopter, remote access to these leases will add significant expense to any exploration work.

Risks include sampling bias that selectively sampled spodumene mineralization during trench sampling may be a factor that could adversely affect the reliability of the historic exploration data. The extent and affect of internal deuteric alteration on the spodumene content of the dykes is unknown and could significantly impact spodumene content and recovery potential. The presence of other undesirable lithium-bearing minerals have been reported in the dykes, these mineral phases complicate bulk assessment of the dykes by assay.

The extent mineralisation at surface is well documented however little is known about continuity, width and lithium content of mineralisation of these dykes at depth.

A further comprehensive exploration program of drilling, mineralogical studies, and surficial mapping is strongly recommended.

## **26 RECOMMENDATIONS**

Further work is warranted on the Leases.

A comprehensive exploration drilling program is recommended to determine the three dimensional geometry and content of spodumene within dyke that are within the Property . The author recommends that further work be done to confirm the historical spodumene content or the widths reported.

Further work should be done to ascertain the lithium content of the spodumene for each of the pegmatitic bodies as well as the amount of lithium that is present in the pegmatites as amblygonite and other lithium bearing minerals. This may be completed with visual assessment under both visible and ultraviolet light, X-ray diffractometry, analysis using a portable Laser Induced Breakdown Spectroscometer (Portable LIBS) and others.

## **26.1** Exploration Program

A success-contingent, staged approach is recommended for further exploration of the Leases.

#### STAGE 1:

Summer program to include archeological studies, baseline environmental work, and saw-cut channel sampling of pegmatite surface exposures, as well as regional prospecting and geochemical surveys designed to locate buried targets. Diamond drilling utilizing at least two rigs fitted for HQ coring to test the NITE, BIG, Fi, Ki, and Hi pegmatites, requiring approximately 12,000 m of drilling in 57 drill holes. Estimated to cost \$8 186 870 (see tables 26.1 and 26.2 below).

#### STAGE 2:

Contingent upon positive results from the First Stage should consist of a winter drilling program designed to in-fill areas on the dykes that warrant additional testing. Cost estimate for this program to be determined once results are known from the summer program.

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Table 26.1: Proposed Exploration Budget – Stage 1

Item	Quantity	Units	Rate	Cost
WAGES & SALARIES	-			
Project Geologist	90	days	\$750	\$67,500
Geologist	90	days	\$500	\$45,000
Geotechnicians, 4	360	days	\$300	\$108,000
Cook	90	days	\$500	\$45,000
FIELD EXPENSE:				
Camp				\$18,000
Communications – Satellite phone	3	months	\$1,000	\$3,000
Equipment				
Cut-off saw				\$1,800
Saw Blades	20		\$150	\$3,000
Field supplies				\$750
Freight				
Fuel - regular gas	420	ltrs	\$1.8	\$756
diesel	630	ltrs	\$1.7	\$1,071
Meals	90	days	\$245	\$22,050
Hotel	6	days	\$300	\$1,800
Truck lease/rental	2	weeks	\$1,000	\$2,000
TECHNICAL SERVICES/SUBCONTRACTORS				
Assay & analysis	1,500	samples	\$65	\$97,500
Certified Reference Material				\$1,000
First Nations Engagement				
Achealogical Study				\$10,000
Baseline Environmental work				\$15,000
Aircraft support				
Helicopter				\$50,000
Fixed-wing				\$3,000
LiDAR survey				\$50,000
LiDAR survey				\$50,000
Permitting				\$20,000
SUBTOTAL				\$566,227
Contingency				\$84,934
TOTAL				\$651,161

Table 26.2: Proposed Exploration Budget -Stage 1 Drilling

Item	Quantity	Units	Rate	Cost
WAGES & SALARIES	Qualitity	Offics	Nate	COST
Project Manager	150	days	\$ 750.00	\$112,500
Geologists, 2	300	days	\$ 500.00	\$150,000
Geotechnicians, 4	600	days	\$ 300.00	\$180,000
FIELD EXPENSE:	000	uays	Ş 300.00	\$180,000
Camp	5	Months	\$ 40,000.00	\$200,000
Camp Wages (Cooks + Staff)	5	months	\$ 70,000.00	\$350,000
Communications – Satellite		IIIOIILIIS		
phone + Wifi	5	months	\$ 3,000.00	\$15,000
Equipment				
Core saw	150	days	\$ 50.00	\$7,500
Cut-off saw	130	days	φ 30.00	\$1,800
Saw Blades	20		\$ 150.00	\$3,000
Core logging facility rental	5	months	\$ 3,600.00	\$18,000
Field supplies	7	Hondis	7 3,000.00	\$750
Freight				7/30
Fuel - regular gas	630	ltrs	\$ 1.80	\$1,134
diesel	21,000	Itrs	\$ 2.46	\$51,660
propane	14,000	lb	\$ 1.20	\$16,800
Meals, Driller + geos, etc	150	days	\$ 900.00	\$135,000
Truck lease/rental x2 @ 5 Mo	5	months	\$ 7,200.00	\$36,000
TECHNICAL SERVICES/SUBCON	1		γ //=00.00	700,000
Assay & analysis	1,900	samples	\$ 65.00	\$123,500
Certified Reference	310	·		
Material	210	samples	\$ 10.00	\$2,100
Drilling				
Mob/Demob	2	Days	\$ 25,000.00	\$50,000
NQ-core drilling all in at drill	12,000	M	\$ 250.00	\$3,000,000
Survey Tooling	5	month	\$ 7,500.00	\$37,500
Aircraft support				
Helicopter (4hr min @\$2500	150	days	\$ 11,000.00	\$1,650,000
wet)			i i	
Jet A Fuel (180L/hr)	108,000	L	\$ 2.30	\$248,400
Permitting	1		\$ 20,000.00	\$20,000
Resource Estimation				
Consultant	1		\$ 20,000.00	\$20,000
Reporting - NI43-101	1		\$ 20,000.00	\$20,000
Winter road	20	km	\$ 16,000.00	\$320,000
Road maintenance	16	week	\$ 5,000.00	\$80,000
SUBTOTAL				\$6,850,644
Contingency				\$685,065
TOTAL				\$7,535,709

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## 28 DATE AND SIGNATURE PAGE

This report titled, "NI 43-101 Technical Report on the Yellowhead Lithium Property, Northwest Territories, Canada" with the effective date of September 16<sup>th</sup>, 2023, was prepared by the following author:

## Original Signed and Sealed) "Thomas Hawkins"

Thomas Hawkins, P.Geo Consulting Geologist

Registration number 39892 Permit Number 1003732

Dated this 18<sup>th</sup> day of September 2023.

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#### **CERTIFICATE OF QUALIFIED PERSON**

I Thomas Hawkins do hereby certify that:

- 1. I am a consulting geologist living at 102 Deep Dene Road, Vancouver, B. C V7S 1A2.
- 2. This certificate applies to the technical report titled NI 43-101 Technical Report on the Yellowknife Lithium Property, Northwest Territories, Canada with an effective date of the 30<sup>th</sup> of December, 2022
- 3. I graduated with a MSci degree in Geology and Geophysics from the Imperial College, London in 2006, and a PhD in Geology from the University of Brighton in 2011. My PhD thesis on the skarns of the Turgai Belt in Kazakstan examined the genetic history of a granitoid intrusive rocks that were intruded into sedimentary rocks of Northwestern Kazakhstan, the subsequent hydrothermal events, and related mineral deposits.
- 4. I am a Professional Geoscientist registered in good standing with The Association of Professional Engineers and Geoscientists of British Columbia, licence no. 39892, Permit Number 1003732, and with the NAPEG (Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists Registration number L5282)
- 5. I have been practicing my profession for the past 12 years and have been active in the mineral exploration industry for the past 22 years. My technical expertise includes management of exploration programs, assessment of early-stage mineral projects, field mapping, and production of genetic models for deposits.
- 6. I have been exploring for tin, lithium and REE-bearing granitic rocks for over 17 years. I was a field geologist working for the Centre for Russian and Central Eurasian Mineral Studies on the Altaids project, a 4 year project that aimed to characterise granitoid and granitoid-related deposits across Central Asia, this included spodumene-bearing pegmatites. I was an active member of the field team that collected samples and characterised lithium-enriched pegmatites from Kazakhstan, China and Russia. As a geological consultant I have completed regional studies examining the prospectivity for spodumene and lithium minerals in pegmatite belts in Idaho(USA), Alaska (USA), Nigeria, Ghana, and Kazakhstan. I have personally collected samples from spodumene bearing pegmatites in Northern Nigeria and North-Western Kazakhstan.
- 7. I have read the definition of "qualified person" set out in the National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association and past relevant work experience, I fulfil the requirements to be a qualified person for the purposes of NI 43-101.
- 8. I am responsible for the preparation of all sections of the technical report titled NI 43-101 Technical Report on the Yellowknife Lithium Property, Northwest Territories, Canada dated 30<sup>th</sup> of December, 2022 (the "Technical Report") relating to the Yellowknife Lithium Property. I was personally onsite on the 25<sup>th</sup> of November 2022.
- 9. To the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
- 10.I have had no prior involvement with the property that is the subject of this report prior to being the author of this report.
- 11.I am independent of the issuer and the Property as described by applying the test set forth in Section 1.5 of NI 43-101. I am not, nor have been, an officer, director, or employee of the issuer or any related party to the issuer. For greater clarity, I do not hold, nor do I expect to receive, any securities or any other interest in any corporate entity, private or public, with interests in the Property or to receive any other consideration besides fair remuneration for the preparation of this Technical Report. I have not earned the majority of my income during the preceding three years from any corporate entity, private or public,

with interests in the Property. In addition, I do not hold, nor do I expect to receive, directly or indirectly, any ownership, royalty or other interest in the Property or any property adjacent to the Property.

12.I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Dated this 18th Day of September, 2023.

(Original Signed and Sealed) "Thomas Hawkins"

Thomas Hawkins, P.Geo, PhD.