E3 LITHIUM

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NI43-101 Technical Report for the

Garrington District Lithium Resource Estimate

Prepared for: E3 Lithium Ltd.

Prepared by: Meghan Klein, P.Eng., Sproule International Limited

Alexey Romanov, Ph.D., P.Geo., Sproule International Limited

Effective date: 25 June 2025

Sproule ERCE

CERTIFICATE OF QUALIFIED PERSON

I, Meghan Klein, P. Eng., am employed as Head of Reservoir Engineering, Americas with Sproule International Limited (Sproule ERCE) at 900, 140 - 4 Avenue SW, Calgary, Alberta T2P 3N3. Sproule International Limited is registered with The Association of Professional Engineers and Geoscientists of Alberta, holding Permit to Practice #06151.

This certificate applies to the technical report titled "NI 43-101 Technical Report for the Garrington District Lithium Resource Estimate", which has an effective date of June 25, 2025 (the "Technical Report").

I am a licenced Professional Engineer of Alberta Association of Professional Engineers and Geoscientists of Alberta, #84981. I graduated from University of Waterloo in 2005 with a Bachelor of Applied Science (Geological Engineering).

I have practiced my profession for 20 years. I have been directly involved in subsurface petroleum, brine and gas reserve and resource evaluations for 20 years, with 2.5 years of experience in lithium from brine resource evaluations.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 *Standards of Disclosure for Mineral Projects* (NI 43–101) for those sections of the Technical Report that I am responsible for preparing.

I completed a field site visit to the Garrington District on June 19, 2025.

I am responsible for Sections or portions of, 1 to 6, 8-27 of the Technical Report.

I am independent of E3 Lithium Ltd. as independence is described by Section 1.5 of NI 43–101.

I have had no previous involvement with the Garrington District Project.

I have read NI 43–101 and the sections of the Technical Report for which I am responsible have been prepared in compliance with that Instrument.

As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the sections of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make those sections of the Technical Report not misleading.

Dated: July 18, 2025

"Signed and Sealed"

Meghan Klein, P. Eng.

CERTIFICATE OF QUALIFIED PERSON

I, Alexey Romanov, P. Geo., am employed as a Principal Geoscientist with Sproule International Limited (Sproule ERCE) at 900, 140 - 4 Avenue SW, Calgary, Alberta T2P 3N3. Sproule International Limited is registered with The Association of Professional Engineers and Geoscientists of Alberta, holding Permit to Practice #06151.

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I am a licenced Professional Geoscientist of Alberta Association of Professional Engineers and Geoscientists of Alberta, #112313. I graduated from Kazan State University in 2003 with a Master of Science degree in Petroleum Geology and graduated from Kazan State Technological University in 2007 with a Ph.D. in Chemical Engineering.

I have practiced my profession for 23 years. I have been directly involved in subsurface petroleum, brine and gas reserve and resource evaluations for 20 years, with 2.5 years of experience in lithium from brine resource evaluations.

As a result of my experience and qualifications, I am a Qualified Person as defined in National Instrument 43–101 *Standards of Disclosure for Mineral Projects* (NI 43–101) for those sections of the Technical Report that I am responsible for preparing.

I have not visited the Garrington District.

I am responsible for Sections 1.7, 7, 12.4 and portions of Sections 1.12, 1.14, 2.4, 8, 14, 25, 26 of the Technical Report.

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Alexey Romanov, P. Geo.

Cautionary Note Regarding Forward-Looking Information

This Technical Report contains forward-looking information or forward-looking statements within the meaning of applicable Canadian securities legislation relating to E3 Lithium Ltd. ("E3"). All statements, other than statements of historical fact, that address activities, developments or events that are expected or anticipated will or may occur in the future constitute forward-looking information including, but not limited to statements preceded by, followed by or that include words such as "forecast", "expected", "anticipates", "potential", "projected", "estimates", "may", "will", "would", "could", "should", "goal", "evaluate", "designed to", "aims to", "believes", or the negative of such words or other similar or comparable words. Forward-looking information in this Technical Report includes, but is not limited to, E3's objectives, strategies, intentions and expectations; the necessity of leasing surface locations in the future; prospects and potential timing for economic and/or mineral extraction; price, demand and growth forecasts for lithium; the definition of a conceptual development area; and the anticipated processes for treatment, transportation and processing of reservoir water and produced brine.

Forward-looking information and statements are not, and cannot be, a guarantee of future results or events. Forward-looking information and statements are based on, among other things, opinions, assumptions, estimates and analyses that, while considered reasonable at the date the forward-looking information statements are provided, inherently are subject to significant risks, uncertainties, contingencies, and other factors that may cause actual results and events to be materially different from those expressed or implied by the forward-looking information statements. The material factors or assumptions that the Technical Report authors identified and applied in developing the forward-looking information herein include, but are not limited to the assumptions set out in Section 2.3 (Report Terms), Section 4.4 (Surface Rights), Section 4.7 (Significant Risk Factors), Section 14 (Mineral Resource Estimates) and Section 25 (Interpretation and Conclusions).

The risks, uncertainties, contingencies and other factors that may cause actual results to differ materially from those expressed or implied by the forward-looking information include, but are not limited to: risks generally associated with mining operations, including problems related to weather and climate; economic factors, including fluctuations in commodity prices, currency, energy prices, interest rates and inflation; as well as the risks described in Section 1.4 (Property Description and Location), Section 4.4 (Surface Rights), Section 4.7 (Significant Risk Factors), Section 9.1 (Field Sampling – Existing Oil and Gas Infrastructure), Section 14 (Mineral Resource Estimates) and Section 25 (Interpretation and Conclusions).

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1. Summary

1.1. Introduction

E3 Lithium Ltd. ("E3") is a publicly traded resource development company located in Alberta, dedicated to establishing a new benchmark lithium production in North America (E3 Lithium Ltd., 2025). Qualified Persons (QP) Ms. Meghan Klein, P. Eng., and Mr. Alexey Romanov, Ph.D., P. Geo., of Sproule International Limited ("Sproule ERCE") were retained by E3 to prepare a technical report on the Lithium Resource Estimation of the Garrington District in compliance with National Instrument 43-101 (NI 43-101) standards (the "Technical Report" or "Report") with an effective date of June 25, 2025. The Garrington District encompasses the Conceptual Development Area, where the highest confidence resource estimate category of Measured Resources is located.

1.2. Terms of Reference

The Report was prepared to support disclosures in E3's news releases dated June 25, 2025, entitled "E3 Lithium Outlines an Inaugural Measured and Indicated Mineral Resource Estimate of 5.0 Mt LCE for the Garrington District".

The Report provides an updated and expanded Brine Resource estimate in the Garrington District, previously reported in the North Rocky Property Lithium Resource Estimate NI 43-101 Technical Report (E3 Lithium Ltd., 2017).

The Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards for Mineral Resources and Mineral Reserves (CIM Standing Committee on Reserve Definitions, 2014), incorporated by reference into National Instrument (NI) 43-101 (Canadian Securities Administrators, 2011) does not currently include brines as part of the "mineral" or "mineral project" definitions. However, there is a general acceptance within the industry that reporting brine projects as mineral projects is appropriate, and a brine-specific guideline exists (CIM Estimation Best Practice Committee, 2012). For the purposes of this Report, the estimates are referred to as Brine Resources, with the exception of statutory Item headings.

The Report uses Canadian English. Monetary units are reported in CAD dollars ($) unless otherwise noted. Units are metric units unless otherwise noted.

1.3. Report Terms

The Report uses the following terms:

- Garrington District Mineral Property: referred to as the Garrington District;
- Conceptual Development Area: also referred to as the CDA; a rectangular area within the Garrington District, which includes the area dynamically modeled to assess Reasonable Prospect of Eventual Economic Extraction in support of a Measured resource estimate category.

The Report uses reservoir engineering terminology for most parameters rather than hydrogeological terminology to align with the proposed recovery method via existing oilfield technologies (wells, pumps, and pipelines) to extract the lithium-rich brine from the reservoir and supply it to a process facility that will use a direct lithium extraction technology. In some cases, however, hydrogeological terms can be used. A summary of key terminology is provided in Table 2.

E3 adapted the standard oilfield approach for evaluating data distribution and variance which involves calculating “P10,” “P50,” and “P90” values. These metrics represent the 10th, 50th, and 90th percentile values in a given data distribution. The 50th percentile value (P50) represents a median and is not a mean value but these terms are equal for normal data distributions. Average (mean) values are presented in some sections of the Report where appropriate and are described as such.

1.4. Property Description and Location

The Garrington District, located in south-central Alberta, spans from southwest of Edmonton to Sundre. E3, through its subsidiary 1975293 Alberta Ltd., has secured exclusive rights via Crown issued brine-hosted minerals licences across 155,236 hectares within a broader 273,449-hectare area, with the remaining area covered by unleased Freehold mineral licenses. The Crown licences were obtained following regulatory changes in 2023 that separated brine-hosted mineral rights from traditional rock-hosted permits. E3 successfully converted its former metallic and industrial mineral permits into brine-hosted minerals licences in January 2024, granting it a five-year non-renewable term to explore and develop lithium resources, with the intention to later secure longer-term mineral leases. E3 plans on negotiating for Freehold mineral licenses over portions of it’s permit areas and is confident these can be negotiated for similar terms to the Crown licenses.

Surface access in the area is predominantly privately owned, requiring E3 to negotiate leases for well pads and facilities, a standard practice given the region's agricultural and oil and gas history. While no environmental liabilities or non-government royalties are currently known, there are risks tied to overlapping hydrocarbon production and a small overlap of 8-sections with a carbon sequestration evaluation permit held by Altagas. These factors may influence project timing but do not presently impede E3's resource development plans. E3 is confident in its ability to manage land access and regulatory requirements in order to advance its lithium project.

1.5. Accessibility, Climate, Local Resources, Infrastructure and Physiography

The Garrington District accessibility and infrastructure supports year-round lithium brine extraction operations. The region is accessible via major highways, all-weather roads, and two nearby international airports (Calgary and Edmonton), with additional access through the regional Red Deer Airport. The area is also served by Canadian Pacific and Canadian National railways, connecting it to major cities and North American markets. The climate is continental with cold winters and warm summers and poses no constraints to extraction.

Local towns such as Red Deer, Devon, Leduc, Rimbey, and Sundre provide ample resources, including accommodations, skilled labor, and services historically tied to the oil and gas sector. Extensive infrastructure from over 70 years of oil and gas development—including pipelines, roads, and power lines—exists throughout the Garrington District. The physiography includes glacial till plains and riparian systems, with land use dominated by agriculture, wetlands, and forested areas. These factors collectively support efficient resource development, with ample space and utilities for processing and expansion.

1.6. History

The exploration of lithium in Alberta's brine formations has evolved from coincidental findings during oil and gas operations to targeted assessments of mineral potential. Historical testing initially focused on routine chemical analysis of produced water, with early compilations by the Government of Alberta highlighting lithium's presence in formation waters, particularly in the Devonian carbonate reservoirs. Later studies by researchers like Eccles and Huff built on this foundation, confirming elevated lithium levels in Devonian formations such as the Leduc, Swan Hills, and Nisku. The formation waters (brines), long considered a waste product in hydrocarbon extraction, are now being re-evaluated for their lithium content, with increasing interest due to lithium's role in battery technology.

In the Garrington District, extensive hydrocarbon drilling has occurred since the 1940s, particularly targeting the Leduc Formation. Over 10,800 wells have been drilled, with more than 2,200 intersecting the Leduc Formation. Though no wells were specifically drilled for lithium brine, the historical production data—including over 2.5 billion m^3 of oil and condensate and significant volumes of water—demonstrates the formation's capacity for fluid movement. This suggests that direct lithium extraction (DLE) technologies could feasibly be applied. As of early 2025, 70 production wells are still active in the Leduc Formation in the Garrington District, and cumulative data supports its potential for sustainable lithium extraction.

1.7. Geologic Setting and Mineralization

Within the Garrington District, lithium brines are localized to reefs deposited during the Devonian. The Leduc Formation, a subset of the Woodbend Group, is the primary target for brines containing elevated lithium. The Leduc reefs are characterized by multiple cycles of reef growth including backstepping reef complexes and isolated reefs (Mossop & Sheston, 1994). In the Garrington District these reefs are pervasively dolomitized, and they are overlain by the Ireton shales, which act as a seal for the reservoir, and underlain by the carbonates of the Cooking Lake Formation, which acted as the platform for the reef complexes to form.

The Duvernay Formation is composed of dark bituminous shale and limestone which contain and preserve a large accumulation of organic carbon thought to be the source for most of the conventional hydrocarbons in the upper Devonian in Alberta. The Duvernay Formation is the time equivalent formation to the Leduc Formation and is interpreted to be basinal sediments that were deposited at the same time as the Leduc reef complexes were forming. These shales sit adjacent to the Leduc reefs and also act as a seal for the reservoir as they onlap at the reef edges, adjacent to the reef buildups, along with the Ireton formation which acts as a seal or "cap" at the top.

The Woodbend group is underlain by earlier deposits of other Devonian carbonates, evaporites and shales. These Devonian sediments sit unconformably on the mixed carbonates, sandstones, and shales of the Cambrian group.

Overlying the Devonian carbonate strata are Mississippian carbonates, and on top of the Mississippian Group is an unconformity, and the alternating sandstones, shales, and coals of the Cretaceous group sit on top of these sediments.

1.8. Deposit Types

E3 Lithium's resource is a sedimentary basin brine, one of three types of brine-hosted lithium deposits. The other two brine-hosted lithium deposit types are high-temperature geothermal basin brines and closed basin brines, which include salars, playas, and hydrothermally altered clay deposits.

Globally, lithium is mainly extracted from hard rock ores such as spodumene.

1.9. Exploration

E3 Lithium has leveraged existing oil and gas infrastructure within its permit area to collect formation brine samples for lithium exploration, significantly reducing costs by avoiding the need to drill new wells. Since the 1940s, substantial hydrocarbon and co-produced brine volumes have been extracted from the Leduc Formation, creating a valuable historical dataset. As water production has increased relative to hydrocarbons—often exceeding 98% of total volume—E3 has accessed this infrastructure to sample lithium-rich brines directly from active wells producing solely from the Leduc Formation.

Brine samples were collected either directly from wellheads or through 2-phase and 3-phase test separators, with precautions taken due to the presence of hydrogen sulfide (H_2S) gas. At each site, technicians used protective equipment, including SCBA gear when necessary. The sampling process involved separating the water phase from oil emulsions. A total of 33 samples were collected from 24 unique locations in the Garrington District between 2017 and 2024, including repeat samples for consistency analysis. All additives used at the well sites were reviewed for lithium content, and none were found to interfere with the lithium data.

1.10. Drilling

To date, all of E3's reservoir and sampling data in the Garrington District have been sourced from third-party hydrocarbon wells, with no dedicated brine-hosted mineral exploration drilling conducted.

1.11. Sample Preparation, Analyses and Security

E3 Lithium has implemented a rigorous sampling, preparation, and analysis protocol for brine collected from existing oil and gas infrastructure in the Garrington District. Samples are secured in 1 litre (L) opaque amber bottles with full labeling and custody seals and transported under strict chain-of-custody protocols to accredited laboratories (BV, SGS, AGAT). In the lab, samples are degassed to remove hydrogen sulfide (H_2S), homogenized, digested, and analyzed for trace metals including lithium using ICP-OES. Certified QA/QC standards and blanks are included in all submissions to ensure analytical reliability. The sampling program to date, consists of 39 collected brine samples from 24 unique well locations, including 15 repeat samples, with 33 samples ultimately deemed valid based on geochemical alignment with known Leduc Formation brine characteristics.

The analytical results showed lithium concentrations in the range of 45 to 61 mg/L, with a median (P50) value of 55 mg/L, and most samples falling within a narrow distribution range (52.3–60.1 mg/L), indicating strong geochemical consistency across the district. Outliers were excluded based on a total dissolved solids (TDS) cut-off of 150,000 mg/L, helping ensure data quality. Repeat sampling over time showed minimal variation in lithium concentrations, confirming the stability of the resource. The Qualified Person (QP) validated the methodology and concluded that the dataset was adequate for use in resource estimation.

1.12. Data Verification

The report draws on a comprehensive dataset compiled from E3, public domain sources, and independent third-party data. Fundamental information was obtained from exploration maps, logs, and reports provided by E3, government oil and gas data (primarily from Alberta), and published literature on regional geology and lithium mineralization. Mapping and formation evaluation relied heavily on historical oil and gas data, including well logs, core samples, drill stem tests, and production records. All data, whether public or private, underwent thorough validation to ensure technical reliability. The authors reference established geological research on the Alberta Basin, especially the Rimbey-Meadowbrook reef trend, which is central to lithium brine potential.

Two Qualified Persons, Ms. Meghan Klein and Mr. Alexey Romanov, verified the data used in the resource estimation. Ms. Klein reviewed E3's sampling programs, brine chemistry, and historical production/injection data and validated the sampling protocols and QA/QC procedures. Mr. Romanov confirmed the geological and petrophysical parameters using public well logs and core data. Both deemed the data reliable for estimating brine resource volumes. Ms. Klein also confirmed that E3's field and laboratory procedures ensured accurate lithium grade sampling.

1.13. Mineral Processing and Metallurgical Testing

E3 Lithium has conducted extensive metallurgical testing to selectively recover lithium from brine in the Garrington District using its proprietary Direct Lithium Extraction (DLE) technology. Initial performance testing of the DLE process on Garrington brine was completed in late 2024 and early 2025, with brine composition verified by Bureau Veritas and E3's internal lab. E3's DLE system has already been thoroughly tested with Bashaw District brine since 2022, demonstrating a well-understood end-to-end process from raw brine to lithium carbonate. In 2025, E3 successfully produced battery-grade lithium carbonate (>99.5% purity) from Bashaw brine using its optimized process and anticipates similar results from Garrington brine based on early DLE performance. These outcomes have been independently validated by SGS Canada Geochemistry Lab, in Lakefield, Ontario.

In parallel, E3 has advanced its sorbent development program, aimed at improving lithium recovery, selectivity, and process efficiency. The program has supported identifying and optimizing the most promising sorbent forms through lab-scale testing in the Manual Single Column (MSC), followed by larger-scale, multi-cycle testing in the Automated Single Column (ASC), which has run over 1,000 adsorption/desorption cycles. These tests have been instrumental in refining the design and operating parameters of E3's field pilot unit, which operated throughout 2023. The successful pilot not only validated the scalability of E3's DLE technology but also provided feedstock for downstream lithium conversion testing.

1.14. Mineral Resource Estimates

E3 Lithium's resource estimate for the Garrington District is based on a detailed 3D geological and reservoir model developed in Petrel™ software (Schlumberger, 2024), incorporating parameters such as area geometry, thickness, porosity, permeability, and lithium grade. This model uses geostatistical simulations to evaluate connected porosity volumes and was validated through existing geological maps, cross-sections, and thorough review by Qualified Persons (QPs).

The resource estimation incorporates several key parameters:

- **Porosity and Permeability:** Derived from 24 well logs and 104 core analyses.
- **Lithium Grade:** Derived from 24 wells across three subareas (North, Middle, and South) and inferred in the Harmattan subarea based on water chemistry proxies.
- **Reservoir Geometry and Pressure:** Defined using well tops, hydrocarbon-water contacts, and pressure data from 846 wells across four distinct zones.
- **Fluid Saturation and Cutoffs:** A fixed 99% brine saturation was used, with porosity cutoffs at 2% and 6% to differentiate resource confidence levels.

Advanced simulation techniques, including kriging and GRFS (Gaussian Random Function Simulation), generated 50 equiprobable porosity models to quantify "geobodies" or spatially connected volumes that meet porosity and grade criteria. This approach ensures a statistically robust and spatially accurate resource model, with connected lithium-bearing zones validated against physical well data and regional geology.

The Qualified Persons for the Brine Resource estimates are Ms. Meghan Klein, P.Eng., and Alexey Romanov, PhD, P. Geo, both of Sproule International Limited ("Sproule ERCE").

The estimates have an effective date of June 25, 2025. A summary of the Measured, Indicated, and Indicated Brine Resource volumes for the Garrington District is provided in Table 1.

Table 1: Garrington District Measured, Indicated, and Inferred Resource Estimates

Resource Estimate								
			E3 Licences			E3 Licences + Unleased Freehold		
Confidence Category	Area	Lithium Grade (mg/L)	Brine Volume (m^3)	OLIP (t Li)	OLIP (t LCE)	Brine Volume (m^3)	OLIP (t Li)	OLIP (t LCE)
Measured	North	-	-	-	-	-	-	-
	Middle	-	-	-	-	-	-	-
	South	55	315,000,000	17,000	92,000	560,000,000	30,000	163,000
	Harmattan	-	-	-	-	-	-	-
	Total	*55*	*315,000,000*	*17,000*	*92,000*	*560,000,000*	*30,000*	*163,000*
Indicated	North	45	1,455,000,000	65,000	348,000	2,920,000,000	131,000	699,000
	Middle	55	3,360,000,000	184,000	983,000	6,630,000,000	364,000	1,941,000
	South	55	5,550,000,000	305,000	1,624,000	7,455,000,000	410,000	2,182,000
	Harmattan	-	-	-	-	-	-	-
	Total	*54*	*10,365,000,000*	*554,000*	*2,948,000*	*17,005,000,000*	*905,000*	*4,817,000*
Total M&I	**ALL**	**54**	**10,680,000,000**	**571,000**	**3,040,000**	**17,565,000,000**	**935,000**	**5,000,000,000**
Inferred	North	45	275,000,000	12,000	65,000	380,000,000	17,000	91,000
	Middle	55	-	-		20,000,000	1,000	5,000
	South	55	-	-	-	85,000,000	4,000	24,000
	Harmattan	38	495,000,000	18,000	100,000	1,000,000,000	38,000	202,000
	Total	*42*	*770,000,000*	*30,000*	*159,000*	*1,485,000,000*	*60,000*	*319,000*

Notes to Accompany Brine Resource Estimate Table:

1. Brine Resources are reported using the 2014 CIM Definition Standards.
2. Brine Resources are not brine reserves and do not have demonstrated economic viability.
3. E3 Licenses include leased Mineral licenses from the Crown. These have been summed with the unleased Freehold mineral rights for the Total Brine Resource Estimate.
4. Numbers have been rounded. Totals may not add due to rounding.

1.15. Interpretation and Conclusions

The Garrington District is a reasonable prospect for eventual economic extraction on the basis of realistically assumed and justifiable technical and economic conditions. The reservoir is regionally contiguous with lithium grade and reservoir properties consistent with producibility.

The Indicated and Measured mineral resource estimate for the Garrington District is 935,000 tonnes of elemental lithium (5,000,000 LCE tonnes), with 61% from leased Crown land and the remainder from unleased Freehold land. The inferred mineral resource estimate for the Garrington District is 60,000 tonnes of elemental lithium (319,000 LCE tonnes), with 50% from leased Crown land and the remainder from unleased Freehold land. The mineral resource estimates are inclusive of both leased Crown and unleased Freehold lands.

Assumptions and risks that may affect the estimated resources include re-injection in the reservoir to maintain voidage and pressure, existing geological data is concentrated in the upper portion of the reservoir, delays in communication between matrix and fracture porosity impacting ability to recover resources, pore space competition with other industries, and Freehold mineral licenses are currently unleased.

1.16. Recommendations

The following activities are recommended to refine the resource estimate and support upgrading the resource estimate to higher confidence categories, including mineral reserves.

- Additional drilling and testing across the reservoir to further characterize geological parameters such as porosity and permeability, commerciality (flow rates), and grade (lithium concentration)
- Reservoir simulation to model flow characteristics for the development of the resource.
- Special core analysis to support single phase flow characteristics.
- Further lithium processing testing for sorbent performance, contaminant removal, and processing of Garrington District brines.
- Complete a Pre-Feasibility Study.

2. Introduction

2.1. Introduction

Ms. Meghan Klein, P. Eng, and Mr. Alexey Romanov, PhD, P. Geo, of Sproule International Limited ("Sproule ERCE") prepared a technical report on the Lithium Resource Estimation of the Garrington District in compliance with National Instrument 43-101 (NI 43-101) standards (the "Technical Report" or "Report") with an effective date of June 25, 2025. The Garrington District encompasses the Conceptual Development Area, where the highest confidence resource estimate category of Measured is located. The location is shown in Figure 1.

2.2. Terms of Reference

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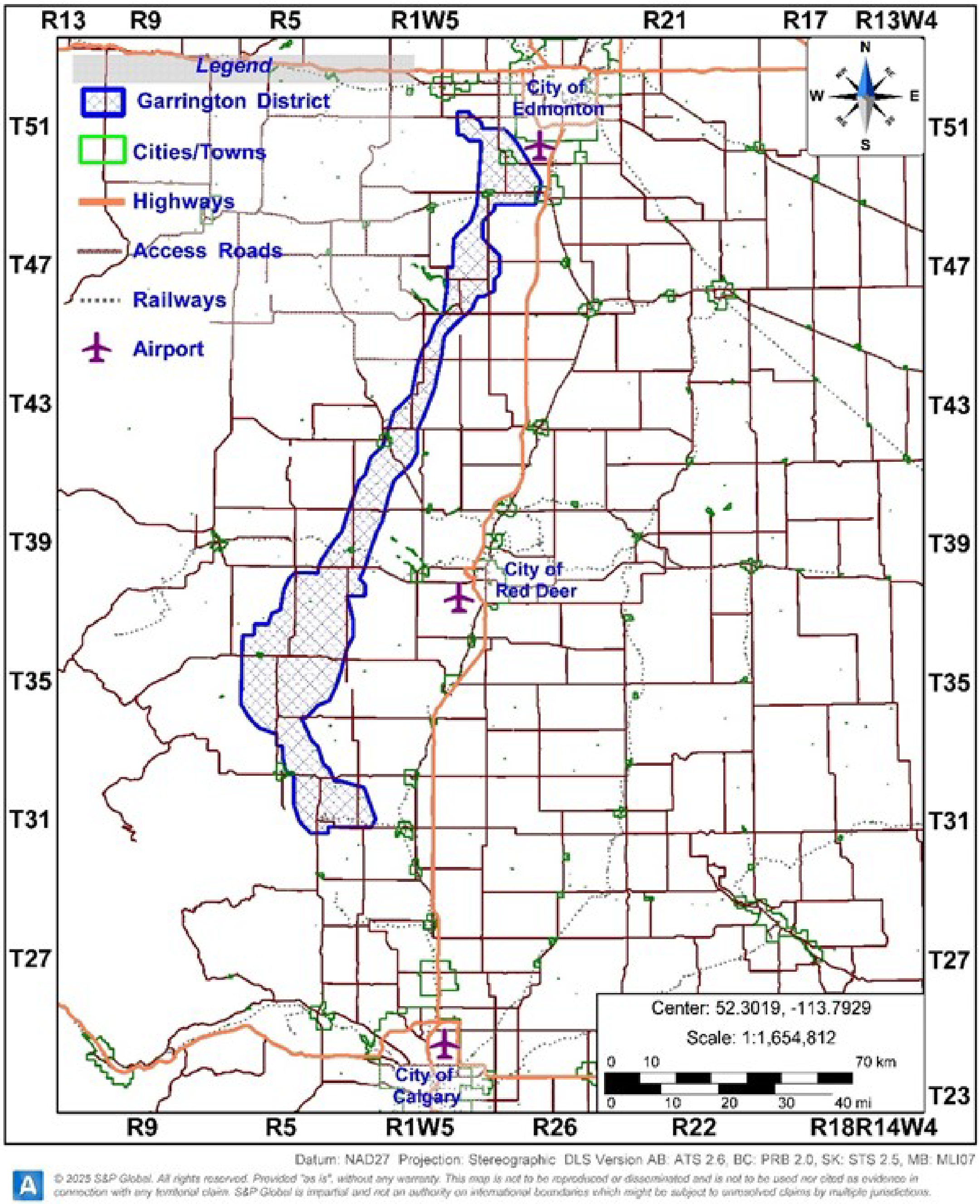

Figure 1: District Location Plan

The Report uses reservoir engineering terminology for most parameters rather than hydrogeological terminology to align with the proposed recovery method via existing oilfield technologies (wells, pumps, and pipelines) to extract the lithium-rich brine from the reservoir and supply it to a process facility that will use a direct lithium extraction technology. In some cases, however, hydrogeological terms can be used. A summary of key terminology is provided in Table 2.

E3 adapted the standard oilfield approach for evaluating data distribution and variance which involves calculating "P10," "P50," and "P90" values. These metrics represent the 10th, 50th, and 90th percentile values in a given data distribution. The 50th percentile value (P50) represents a median and is not a mean value, but these terms are equal for normal data distributions. Average (mean) values are presented in some sections of the Report where appropriate and are described as such.

Table 2: Reservoir Engineering and Hydrogeological Terminology

Reservoir Term(s)	Equivalent Hydrogeological Term	
Reservoir; net pay	Aquifer	Hydrostratigraphic units
Seal	Aquitard	
Original Lithium in Place (OLIP)	n/a	
Producible volume*	Specific yield*	
Recoverable Lithium in Place (RLIP)	n/a	
Total system compressibility product	Specific storage	
Irreducible water saturation	Specific retention	
Fluid mobility	Hydraulic conductivity	
Producibility	Transmissivity	
Flow test	Pumping test	
Build-up; shut-in period	Pumping test recovery period	
Fall-off	Injection test recovery period	

*Producible volume relies on reservoir drive mechanisms whereas specific yield assumes gravity drainage

2.4. Qualified Persons

The following serve as the qualified persons (QPs) for this Technical Report as defined in National Instrument 43-101, Standards of Disclosure for Mineral Projects, and in compliance with Form 43-101F1:

- Ms. Meghan Klein, P. Eng., Head of Reservoir Engineering, Americas, of Sproule International Limited.
- Mr. Alexey Romanov, Ph.D., P.Geol., Principal Geoscientist, of Sproule International Limited.

2.5. Site Visits and Scope of Personal Inspection

A site visit was conducted by Ms. Meghan Klein on June 19, 2025. Guided by E3 representatives, Ms. Klein visited three existing wellbores located on the 01-35 surface site in township 38 range 4 west fifth meridian. The surface lease, wellhead, equipment and surrounding area (Figure 2) were reviewed. Surface infrastructure was validated with government approved survey and wellbore license documentation and public data, regulated by the AER, was reviewed to confirm site operations.

Figure 2: 01-35-038-04W5 Surface Location

2.6. Information Sources and References

Reports and documents listed in Section 27 of this Report were used to support preparation of the Report. Additional information was provided by E3 personnel as required.

2.7. Previous Technical Reports

E3 has previously filed the following technical report on the District:

- Spangers, Raymond P., MacMillan, G., and Monnery, W., 2017: NI 43-101 Technical Report Lithium Resource Estimate for the North Rocky Property, South-Central Alberta, Canada, prepared for E3 Metals Corp., effective date October 27, 2017.

3. Reliance on Other Experts

The QP's did not rely on any other experts other than those detailed herein in the preparation of the Technical Report.

4. Property Description and Location

4.1. Introduction

E3's Garrington District is located in south-central Alberta to the west of E3's Bashaw District, and directly southwest of the city of Edmonton at the north end, and it extends southwest of Edmonton to the town of Sundre (Figure 1). The Garrington District overlies the carbonate reef complex deposits of the Leduc Formation, a hydrocarbon producer, and reservoir for Lithium brines.

The Garrington District location is centered at approximately N 52°34' 57.0", W 114°12'56.5".

4.2. Project Ownership

The Garington District is made up brine-hosted minerals licences held by 1975293 Alberta Ltd., a wholly owned subsidiary of E3.

4.3. Mineral Tenure

The Garrington District covers an area of 273,449 ha, and it contains 22 brine hosted minerals licences: 9924010219-9924010220 inclusive, 9924010226-9924010230 inclusive, 9924010248-9924010254 inclusive, 9924010256, 9924010264-9924010267 inclusive, and 9924010274-9924010276 inclusive (Figure 3). These permits cover an area of 155,236 ha.

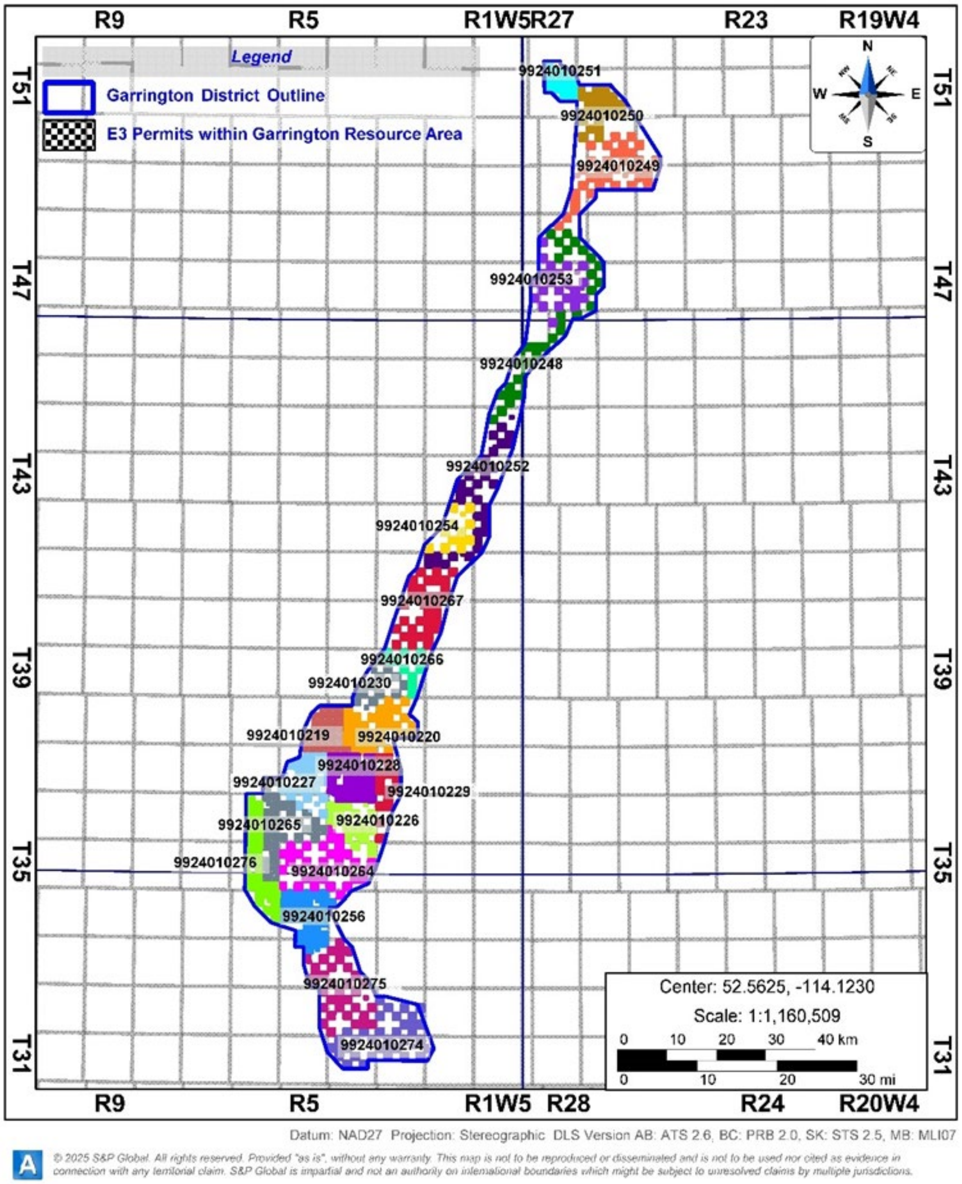

Figure 3: E3's Brine Hosted Mineral Licences, Garrington District, Alberta, Canada

E3 first staked some of its permit tenure for Alberta Metallic and Industrial Mineral Permits in 2016, and continued with staking for permits until 2022. The Alberta Metallic and Industrial Mineral Permits granted the explorer the exclusive right to explore for metallic and industrial minerals for seven consecutive two year+ terms (total of 14 years), subject to traditional biannual assessment work on Crown Land.

Amendments to the Metallic Industrial Minerals Tenure legislation came into force on January 1, 2023 (Alberta Energy, Energy Operations Division, 2022), which split the Metallic and Industrial Minerals permits into rock-hosted metallic and industrials minerals permits, and brine-hosted minerals leases and brine hosted minerals licences. From January 1, 2023, all metallic and industrial minerals permits were converted to rock-hosted minerals permits.

Active permit holders had the exclusive right to apply to convert the new rock-hosted minerals permits into brine-hosted minerals licences by December 31, 2023, (Alberta Energy, Energy Operations Division, 2022). Brine-hosted minerals licences are in place to aid the transition of brine-hosted mineral rights into a separate tenure regime and were only issued to eligible rock hosted minerals permit holders. No other brine-hosted minerals licences will be issued; as future brine-hosted minerals will be leased, rather than licenced, from the Crown.

As an eligible rock-hosted minerals permit holder, on November 17, 2023, E3 applied to convert the rock hosted permits to brine-hosted minerals licences. E3 received 100% of the permits converted to brine hosted licences on January 26, 2024. These licences have a non-renewable term of five years with an annual rental fee, after which E3 intends to convert the licences to brine-hosted mineral leases.

The mineral licences are interspersed with privately-owned (freehold) land, where the subsurface and/or minerals rights are owned by private individuals and/or companies and not the Crown. The freehold mineral rights do not pose an obstacle to brine assay and mineral processing test work within the mineral licences owned by E3, as E3 can take assays and perform testing over areas for which they own the brine-hosted licences and extrapolate the data to cover the areas that are not covered by E3's licences. The reservoir itself is not confined to the E3 licences but spans the bulk of the Garrington District. E3 is confident that when necessary, appropriate agreements with off-setting freehold mineral owners can be arranged, per Alberta Energy Regulator D56 7.7.12(e) (Alberta Energy Regulator, 2025).

4.4. Surface Rights

Surface rights are owned mainly by private landowners over the Garrington District, and for future drill sites, E3 would need to lease surface locations from private landowners for their future well pads.

Land in the area is mainly used for agricultural purposes, and historically surface access has been granted throughout the area for the purposes of oil and gas drilling. It is also possible to acquire surface leases for the purposes of drilling brine production wells and injection wells, and for the construction of a central processing facility.

Drill pad locations will be leased from individual property owners for an annual fee and must be reclaimed when the terms of the surface lease have been fulfilled or terminated. For facilities, surface locations can either be purchased or leased under the same conditions, and it is required that they are also reclaimed when the facility is decommissioned or abandoned.

Regulatory requirements that relate to surface leasing and purchasing are found under the Surface Rights Act (Government of Alberta, 2024). Under the Surface Rights Act, the holder to the rights to mines and minerals has a right to access the surface to work those interests. However, the Surface Rights Act requires an operator to obtain the surface owner's consent prior to entering the surface. If consent cannot be negotiated, then to avoid the risk of sterilization, the resource company can apply to the surface rights board for a right of entry order, and the surface rights board/tribunal would decide how to resolve this issue and how the surface owner would be compensated.

The QP has reasonable evidence for the assumption that E3 will obtain surface access as needed to support the project development.

4.5. Agreements, Royalties, and Encumbrances

The Garrington District is subject to Crown royalties of 1% of gross mine-mouth revenue before payout and the greater of 1% of gross mine-mouth revenue and 12% of net revenue after payout.

There are no known existing non-government royalties over E3's permit areas at the report effective date. There are also no known agreements or encumbrances to which the property is subject to.

4.6. Environmental Liabilities

There are no known environmental liabilities associated to the Garrington District at this time.

4.7. Significant Risk Factors

Current hydrocarbon production and injection in the area could pose a risk to the timing of mineral extraction in the areas where there are hydrocarbons producing over top of the lithium enriched brine compiling the mineral resources. Current regulations stipulate that brine-hosted minerals extraction cannot impact oil and gas operations (Province of Alberta, 2023). Should there be oil and gas production operations that are already in progress, it is possible that the timing of extraction will have to be delayed until oil and gas operations cease.

There is a carbon sequestration evaluation agreement that was awarded to Altagas which overlaps with 8 sections of E3's brine hosted mineral licence (Licence 9924010274) in Township

31 Range 3W5, and Township 31 Range 4W5. This agreement allows Altagas to explore and evaluate the reservoir potential in the Woodbend group (including the Leduc Formation) for possible future carbon sequestration. E3 has engaged with Alberta Energy and the Alberta Energy Regulator on this topic. As E3 holds the mineral tenure rights, and the carbon capture and sequestration permits are at an early stage (e.g. evaluation rather than development), the resources estimate is proceeding on the assumption that none of the brine-hosting pore space needs to be excluded to account for carbon capture and sequestration development. Additionally, the sequestration evaluation permits do not overlap with E3's Conceptual Development Area where the estimated Measured Resources are located.

5. Accessibility, Climate, Local Resources, Infrastructure and Physiography

5.1. Accessibility

The Garrington District is readily accessible by air and ground transportation (Figure 1). There are international airports in Calgary (YYC) and Edmonton (YEG). Red Deer hosts a regional airport (YQF).

Major and secondary provincial highways, and all-weather roads developed to support oil and gas infrastructure occur throughout the permit areas. The city of Red Deer (population of 100,844) is located at the junction of Alberta Provincial Highway 2 (Hwy 2) and Highway 11. Hwy 2 is also the main corridor between Edmonton and Calgary and runs North-South directly east of the Garrington district.

Further access to the property is provided by secondary one or two-lane all-weather roads, and numerous all-weather and dry-weather gravel roads. The resource area can be accessed year-round, ensuring mineral test work and extraction is not limited to certain months of the year. Two rail lines (Canadian Pacific and Canadian National Railways) are present throughout the area and connect to the major centers of Calgary and Edmonton which are to the south and north of the project area and then connect to the rest of North America.

5.2. Climate

Red Deer, located just east of the Garrington District, is considered representative of the regional climate in and around the Garrington area. The climate is classified as cold and temperate, falling under the Dfb category according to the Köppen-Geiger climate classification system. The average annual temperature in Red Deer is approximately 3.2 °C. July is typically the warmest month, with an average temperature of 17.1 °C, while December is the coldest, with a mean temperature of –9.9 °C. The region receives an average annual precipitation of approximately 535 mm (Climate-Data.org, 2025).

Extraction operations will be conducted on a year-round basis. As this is a reservoir that will be produced using direct lithium extraction technology to extract lithium from brine. There are no climate related limitations to resource extraction, unlike the situation for salar-type deposits.

5.3. Local Resources and Infrastructure

Accommodation, food, fuel, and supplies are readily obtained in the City of Edmonton (on the northeast border of the Garrington district), the towns of Devon and Leduc (in the north part of the Garrington district), the town of Rimbey (in the central part of the Garrington District), the City of Red Deer (approximately 40 km east of the central Garrington District), and the town of Sundre (south border of the Garrington district). Figure 1 shows the locations of each of the towns.

Internet and phone coverage are available throughout the permit areas.

Many trained workers live in the area and work in the oil and gas sector. These workers have the skills and expertise required to develop lithium from their related experience in oil and gas. Service companies, including those providing wireline services, testing, maintenance work, and drilling, all operate locally and will be capable of meeting the E3's needs relating to drilling, production and construction.

There is a significant amount of infrastructure in the area to support over 80 years of oil and gas development operations. Oil resources are typically produced in the area using pump jacks as the form of artificial lift. Hydrocarbons and water produced from the wells are delivered to separation facilities (either on site or at a satellite location) via underground pipelines. After separation, the various fluids and phases enter a network of pipelines designed for the transportation of gas, oil and water to specific destinations for upgrading, processing, to market, or for disposal. Pipelines specific to water are designed mainly to transport wastewater for subsurface disposal and/or injection purposes. These water pipeline networks are specifically located in areas developed for oil and gas.

Main highways are maintained and upgraded by municipal and provincial governments, and secondary gravel roads are well maintained. Grid electrical distribution and transmission infrastructure is available throughout the Garrington District, and many of the locations sampled for the Brine Resource estimate have power accessible directly at the lease. There is adequate land in the area for process plants and related future infrastructure.

5.4. Physiography

The Garrington District area lies within the Southern Alberta uplands and Western Alberta plains. The dominant landform is undulating glacial till plains, with about 30% as hummocky, rolling, and undulating uplands.

The average elevation is 750 masl, but ranges from 500 masl near the Alberta–Saskatchewan border to 1,250 masl near Calgary and 700 masl near Edmonton (OpenStreetMap, 2025).

The Red Deer River and the North Saskatchewan rivers are the dominant riparian features in the Garrington District. The Red Deer River is in the south portion of the Garrington District flowing north-northeast from Sundre in the south towards the city of Red Deer. In the North portion of the Garrington District, the North Saskatchewan River flows northeast near the town of Devon towards the city of Edmonton.

The region is dominated by farmland with numerous creeks and wetlands occurring throughout the region.

Clusters of forested terrain consist predominantly of aspen, balsam poplar, lodge pole pine and white spruce. Vegetation in the wetland areas is characterized by black spruce, tamarack and mosses. Farmed areas commonly consist of prairie grasses.

6. History

6.1. Exploration

Historical testing of lithium in brine, prior to E3's ownership, was conducted as part of routine chemistry analysis by oil and gas operators in the area from produced water related to oil and gas production. These data were compiled in a comprehensive overview of the mineral potential of formation waters from across Alberta by the Government of Alberta (Hitchon, Underschultz, & Bachu, Industrial Mineral Potential of Alberta Formation Waters, 1993; Hitchon, Bachu, Underschultz, & Yuan, 1995). Subsequent collection of brine water from actively producing oil and gas wells was conducted by the Alberta Geological Survey (AGS) by Eccles and Jean (Lithium Groundwter and Formation Water Geochemical Data, 2010) and later by Huff (Evolution of Li-enriched oilfield brines in Devonian Carbonates of the South Central Alberta Basin Canada, 2016) and was analyzed for lithium (Eccles & Jean, 2010; Huff G. , Evolution of Li-enriched oilfield brines in Devonian Carbonates of the South Central Alberta Basin Canada, 2016).

A summary of the petroleum exploration and production and the lithium brine-related geological data sourced from the petroleum industry are summarized in the following sub-sections.

6.2. Brine and Hydrocarbon Drilling History

The Leduc #1 well, drilled by Imperial Oil, was one of the first oil wells in Alberta drilled into Late Devonian strata in 1947. Some of the highest production rates and volumes historically come from Devonian-aged formations; this includes the Beaverhill Lake Group and the Swan Hills, Leduc, Nisku, and Wabamun formations. The Leduc Formation reefs were a prevalent target for hydrocarbons from the mid to late 20th century due to their size and very high porosity and permeability. Currently there is resurgence in drilling activity in the Devonian with the improvement of technology allowing for the development of lower permeability unconventional oil reservoirs such as the Duvernay Formation. A significant volume of hydrocarbons has been produced from the Devonian as well as from some of the younger zones above in the Mississippian and Cretaceous. It is the Leduc Formation that is of significance with respect to this assessment for mineral brine potential in the Garrington District.

The Garrington District includes several Leduc oil pools of note such as Golden Spike, Woodbend, Glen Park, Wizard Lake, Bonnie Glen, Gilby, Westerose, Pembina, Homeglen-Rimbey, Garrington, and Harmattan (Figure 4). To date there has not been any drilling for brine resources in the Garrington District.

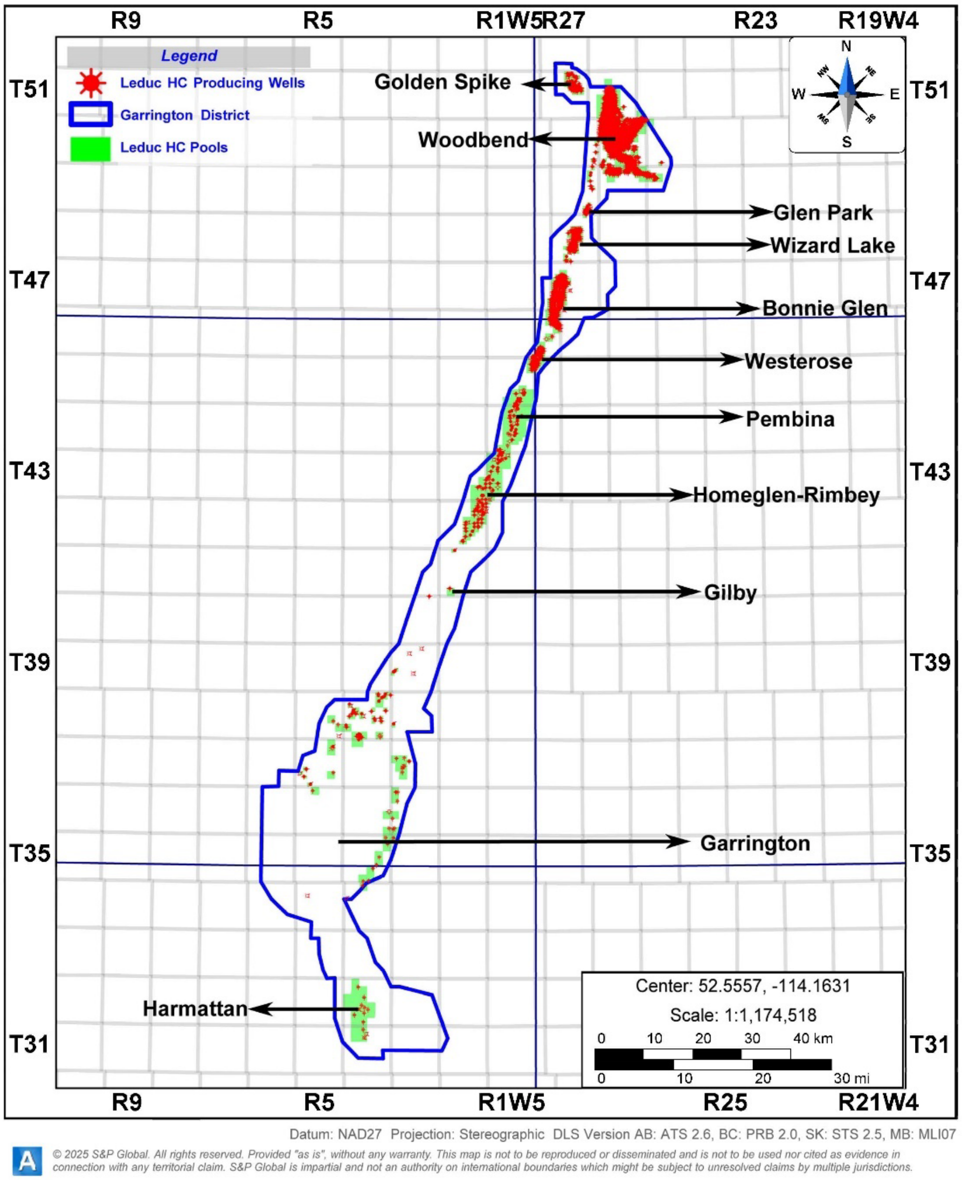

Figure 4: Location of Leduc Wells and Pools in the Garrington District

A query of public data using AccuMap™ software (S & P Global Accumap) shows a total of 10,833 wells drilled within the Garrington district, dating back to 1946 targeting the aforementioned pools delineating the hydrocarbon potential (Table 3). Of these wells, 2240 have intercepted the Leduc Formation.

Table 3: Garrington District Hydrocarbon Pool Discovery History

Pool	Discovery Year	Company
Golden Spike	1946	Imperial Oil Resources
Woodbend	1947	MEC Operating Company; Imperial Oil Resources
Glen Park	1951	Imperial Oil Resources; Chevron
Wizard Lake	1951	Imperial Oil Resources
Bonnie Glen	1952	Imperial Oil Resources; British Petroleum (BP)
Westerose	1952	ConocoPhillips Canada
Pembina	1953	ConocoPhillips Canada
Homeglen-Rimbey	1953	ConocoPhillips Canada
Gilby	1984	Murphy Oil; ConocoPhillips Canada
Garrington	1954	British Petroleum (BP)
Harmattan	1961	Devon Canada

6.3. Drill Stem Tests

A drill stem test is an oilfield test that isolates a particular range of depths in a wellbore to measure the reservoir pressure, permeability and fluid types present at specified depths. Drill stem tests have been run in the vicinity of the resource areas since the 1950s.

6.4. Existing Production, Injection and Disposal

Historical production volumes for the Leduc formations were exported from S&P Global's AccuMap™ software. The reported production was queried for the Garrington District. The Garrington District historical production query included Townships 29 to 52 and Ranges 7W5M to 25W4M. A total of 1321 production wells (Figure 5) and 77 injection wells (Figure 6) in the Garrington District had at least one day of reported rates from the Leduc Formation.

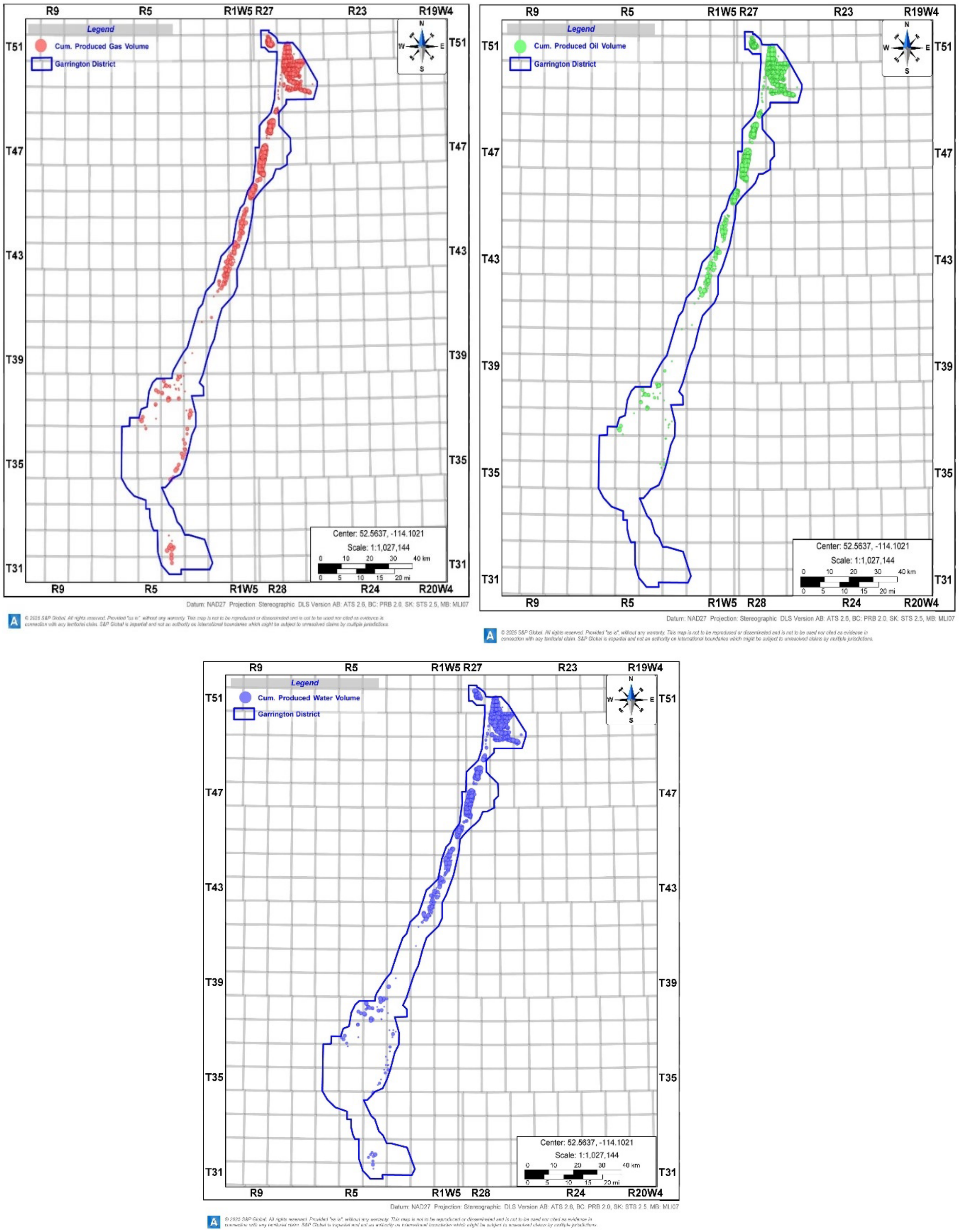

Figure 5: Production by Fluid Type in Garrington District

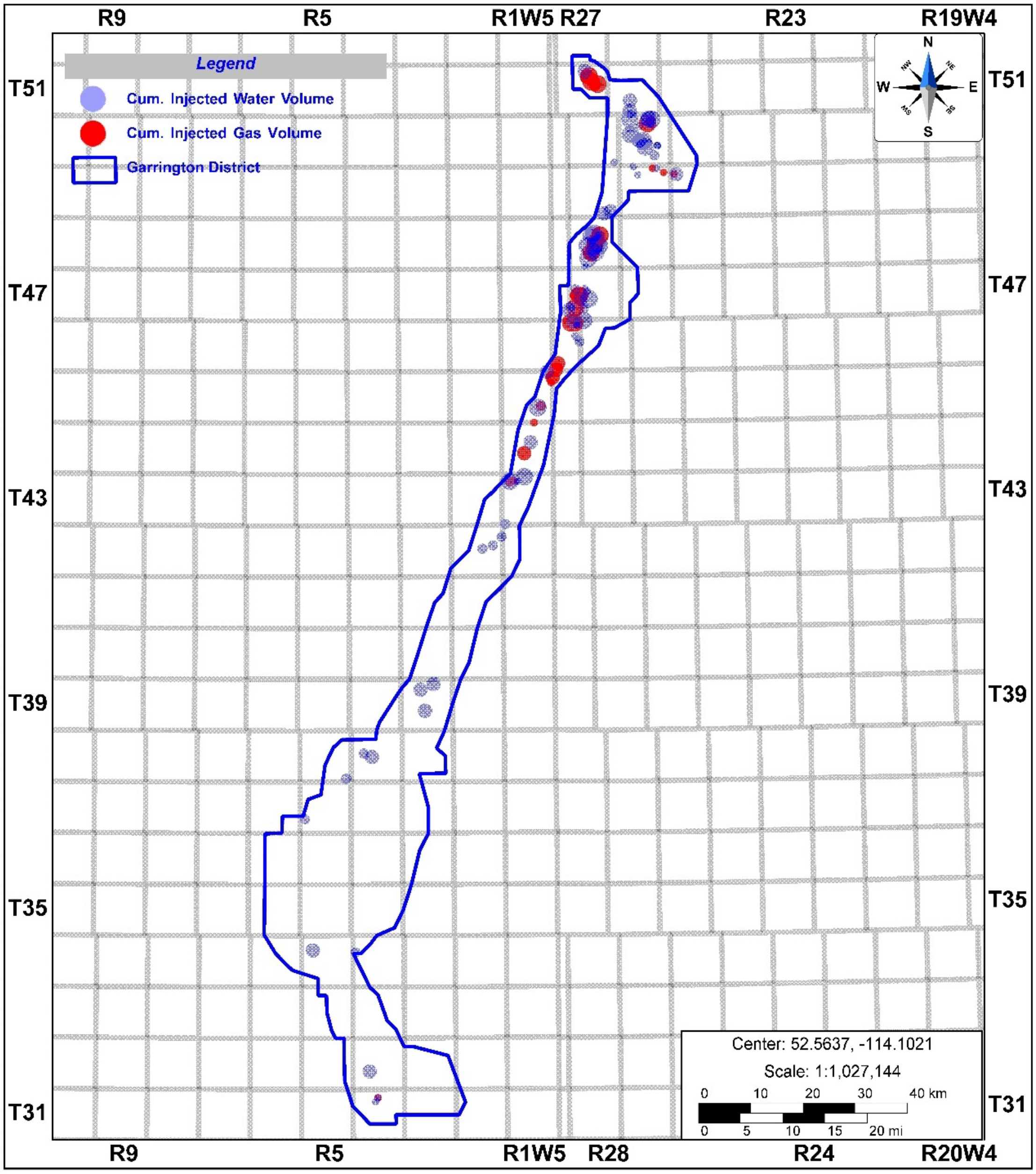

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Figure 6: Cumulative Injection into the Leduc Formation in the Garrington District

Within the Garrington District most of the pools have produced both gas and oil and there have been significant volumes of both fluids produced to date (Figure 7, Table 4). The first year of reported monthly production is 1962, however, many wells were drilled between 1947 and 1962 and, although these wells do not have monthly production reported for those years, the cumulative production from these wells is included in public records.

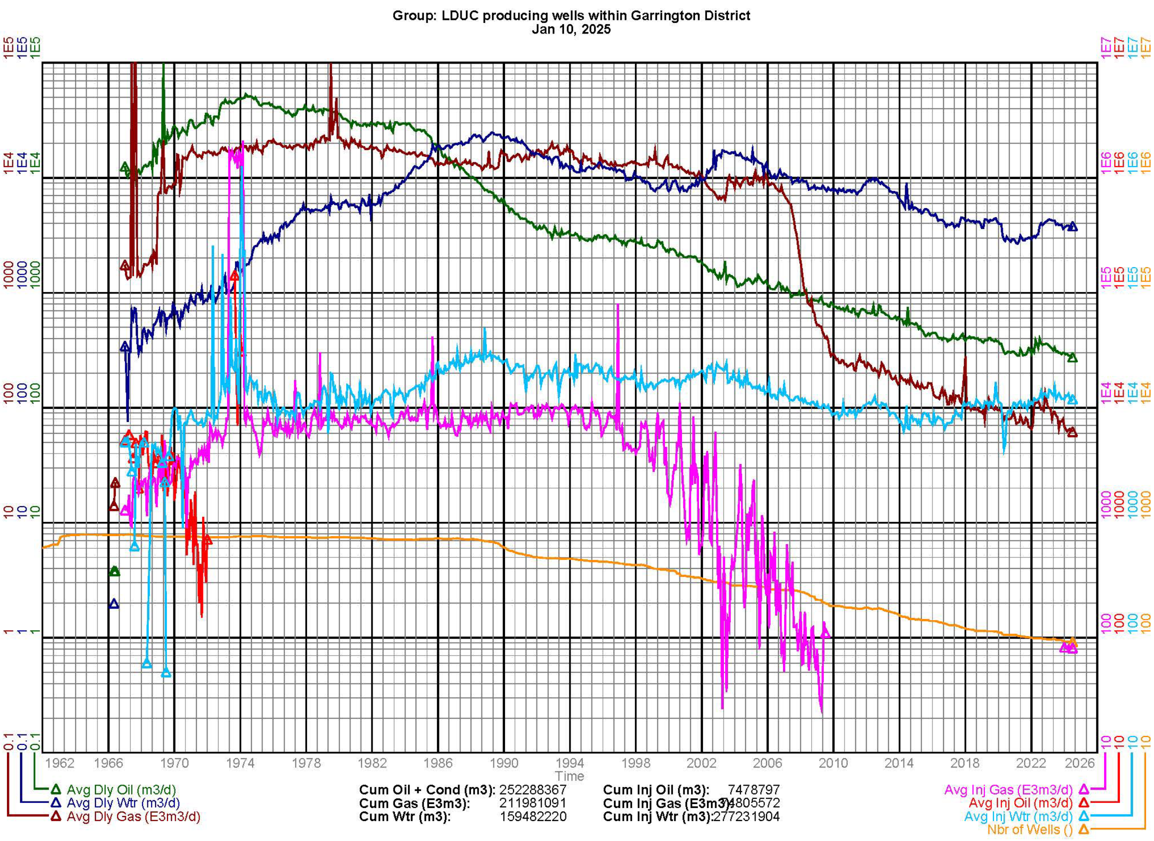

Figure 7: Production/Injection History of the Leduc Reservoir in the Garrington District

Table 4: Cumulative Production Volumes in the Garrington District on Jan 10, 2025

	Production (m^3)	Injection (m^3)
Gas	211,981,091,000	74,805,572,000
Oil + Condensate	252,288,400	7,478,800
Water	159,482,200	277,232,000

Historical volumes of gas and oil produced peaked in the 1970s and has decreased considerably since then as hydrocarbons have been depleted. By contrast, water production as a by-product increased considerably since the 1970s and plateaued in the mid-1990s. It went up slightly in the early 2000's and has been declining for about 20 years from production rates of ~20,000 m^3/d in 2003 to ~4,000 m^3/d in the first part of 2025. Using hydrocarbon production and injection data to show producibility/injectivity of the Leduc reservoir validates that the Leduc reservoir has reasonable prospects for eventual economic extraction of lithium brine using production wells. The long and sustained production history from the hydrocarbon window with a considerable amount of accompanying water shows that water can be pumped to surface for use with direct lithium extraction technology and reinjected back into the formation. As of January 10, 2025, there are 70 wells that are currently producing from the Leduc Formation within the Garrington District (Figure 8).

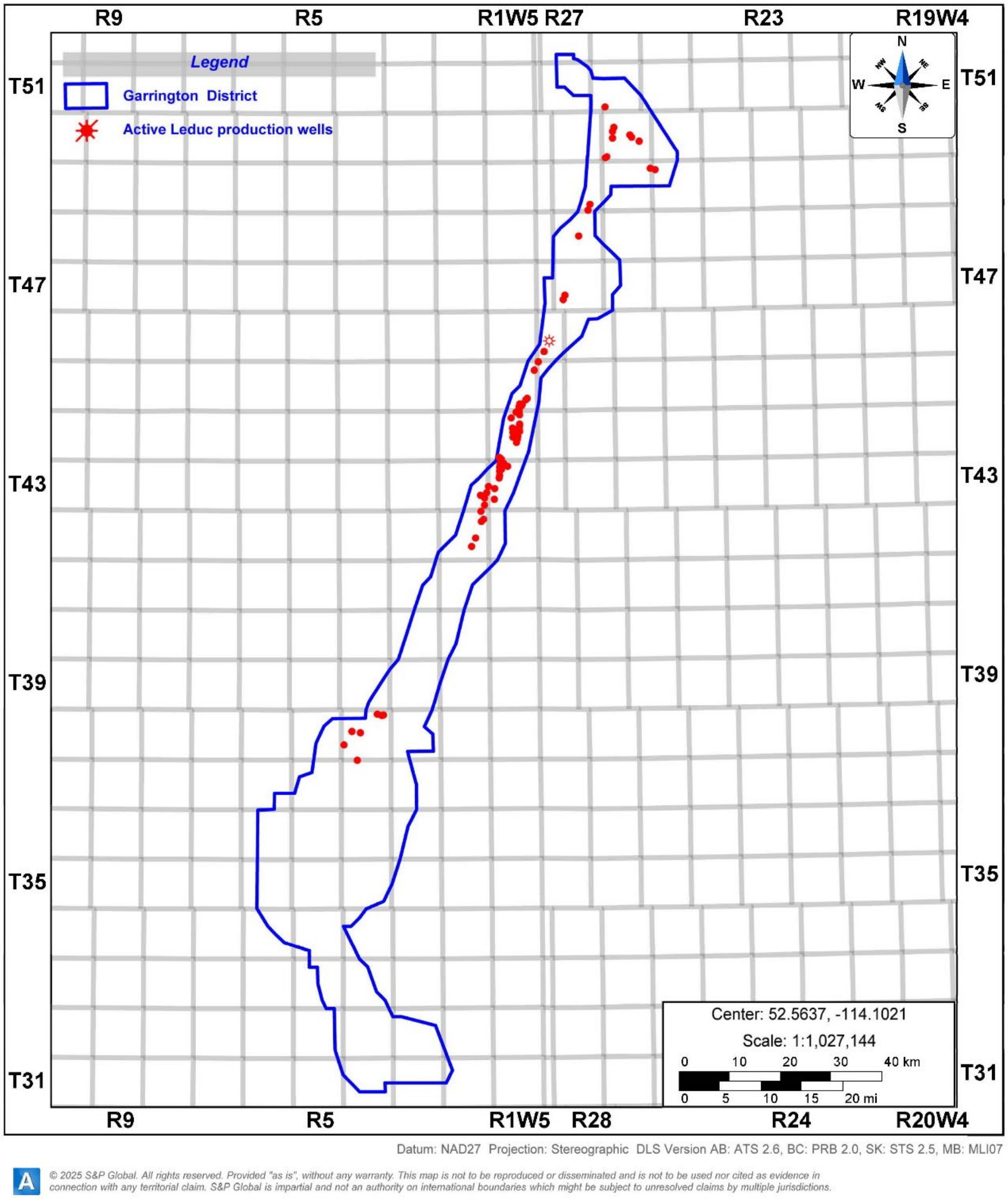

Figure 8: Current Producers in the Leduc Formation in the Garrington District as of Jan 10, 2025

6.5. Historical and Publicly Available Lithium Data

The first comprehensive overview of the mineral potential of formation waters from across Alberta was compiled by the Government of Alberta (Hitchon, Underschultz, & Bachu, 1993; Hitchon, Bachu, Underschultz, & Yuan, 1995).

"Formation water" is used as a generic term to describe all water that naturally occurs in pores of a rock. Formation water is currently being produced as a waste by-product associated with petroleum and natural gas from existing wells. Pressure loss in the reservoir is being mitigated through re-injection of fluid from produced wells and possibly has included waters from other pools and other zones, as well as fresh water.

Hitchon et al. (Industrial Mineral Potential of Alberta Formation Waters, 1993; Industrial Mineral Potential of Alberta Formation Waters, 1995) compiled nearly 130,000 analyses of formation water from various stratigraphic ages across Alberta. The data were derived from numerous sources including Alberta Energy Regulator submissions for drilling conducted by the petroleum industry and various Government of Alberta reports (Hitchon, Billings, & Kovan, 1971; Dunham, 1962).

The method for defining geographic areas with elements of possible economic interest in formation water was defined by Hitchon (Formation Waters as a Source of Industrial Minerals Alberta, 1984) and Hitchon et al. (Industrial Mineral Potential of Alberta Formation Waters, 1995). For each element studied (e.g., calcium, magnesium, potassium, lithium, bromine and iodine), a 'detailed exploration threshold value' was determined by studying the concentrations in economically producing fields as defined in Hitchon (Formation Waters as a Source of Industrial Minerals Alberta, 1984) and Hitchon et al. (Industrial Mineral Potential of Alberta Formation Waters, 1995). Additionally, a lower 'regional exploration threshold value' was defined to allow for contouring and extrapolation of data to undrilled areas. For example, the regional exploration threshold value for lithium was considered to be 50 ppm and the detailed exploration threshold value was defined as 75 ppm lithium (Hitchon, Bachu, Underschultz, & Yuan, 1995).

At the provincial scale, Hitchon et al. (Industrial Mineral Potential of Alberta Formation Waters, 1995) showed that lithium was analyzed and reported in 708 formation water analyses (out of the 130,000 total analyses examined). Of the 708 analyses, 96 analyses yielded lithium concentrations above the 'regional threshold value' (>50 ppm); and 47 analyses yielded lithium concentrations above the 'detailed threshold value' of 75 ppm. Significantly, Hitchon et al. (Industrial Mineral Potential of Alberta Formation Waters, 1993; Industrial Mineral Potential of Alberta Formation Waters, 1995) showed the highest concentrations of lithium in formation water (as much as 140 mg/L Li) occurred within Middle to Late Devonian reservoirs associated with the Beaverhill Lake Group (Swan Hills Formation), Woodbend Group (Leduc Formation), Winterburn Group (Nisku Formation) and Wabamun Formation.

More recently, Eccles and Jean (Lithium Groundwter and Formation Water Geochemical Data, 2010) modelled 1,511 lithium-bearing formation water analyses from throughout Alberta; this compilation supported the conclusions of Hitchon et al. (Industrial Mineral Potential of Alberta Formation Waters, 1995) that brines associated with Devonian strata contain elevated concentrations of lithium in reef systems throughout Alberta. Of the 1,511 analyses, 19 analyses/wells contained >100 mg/L Li (maximum value of 140 mg/L), all of which were sampled from within the Middle to Late Devonian carbonate complexes

In 2022 the Alberta Geological Survey collected 249 produced water samples from oil and gas wells across Alberta, where dissolved lithium concentrations were measured. These results are publicly available on the Alberta Geological Survey website.

7. Geological Setting and Mineralization

7.1. Regional Geology

The Garrington District is situated in the southwestern part of the Western Canada Sedimentary Basin. In this area, the Upper Devonian (Frasnian) sediments of the Woodbend Group were deposited in a shallow, tropical inland sea. The sea was bounded by the emergent Peace River Arch to the northwest and by the West Alberta Ridge to the southwest, creating a barrier between the sea and the open ancestral Pacific to the west (Potma, Wiessenberger, Wong, & Gilhooly, 2001).

7.2. Project Geology

A stratigraphic column for the Garrington District is provided in Figure 9.

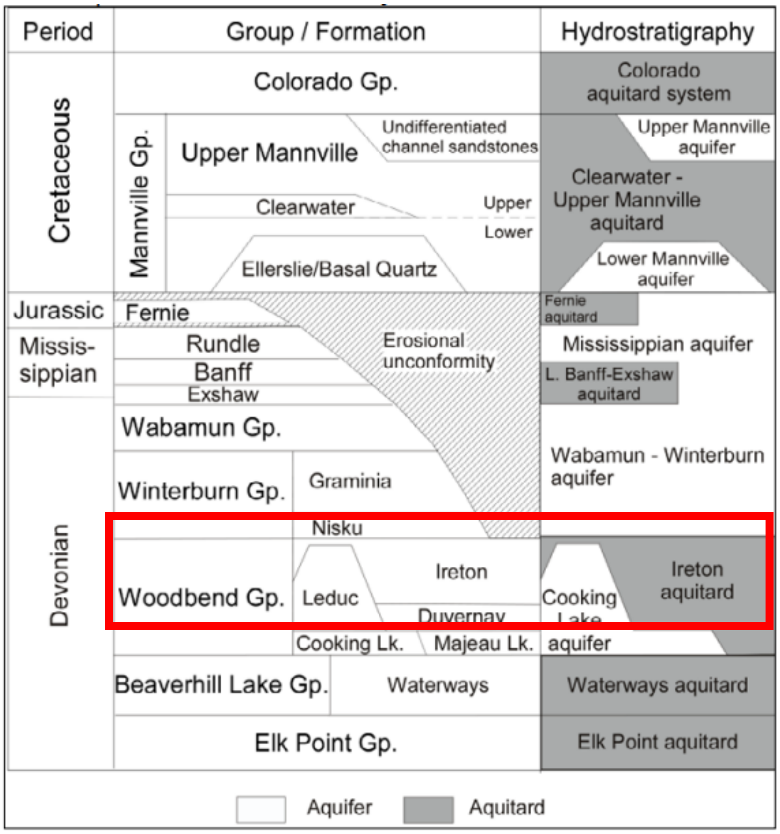

Figure 9: General Stratigraphy and Hydrostratigraphy, Alberta, Garrington District Highlighted

Note: Figure modified from (Lawton & Sodgar, 2011)

7.2.1. Precambrian Basement and Cambrian

The basement underlying the Garrington District is predominantly comprised of Lacombe Domain rocks, with the southeastern portion of the property on the Hearn Terrane (Pană, 2003). The Hearn Terrane is part of the Churchill Province and formed approximately 2.6 to 2.8 billion years ago (Ross, Parrish, Villeneuve, & Bowring, 1991). The Cambrian group comprises of interlayered carbonates, sandstones and shales. It unconformably underlies the Devonian strata within the Garrington District.

7.2.2. Phanerozoic Strata

A thick sequence of Paleocene and Cretaceous clastic rocks and Mississippian to Devonian carbonate, sandstone and salt overlie the basement (Green, Mellon, & Carrigy, 1970; Glass, 1990; Mossop & Sheston, 1994). At the base of the Beaverhill Lake Group, the Elk Point Group comprises restricted marine carbonate and evaporite that gradationally overlies the Watt Mountain Formation (Mossop & Sheston, 1994). The Upper Elk Point, including the Ft. Vermillion, Muskeg and Watt Mountain formations represent a seal (Hitchon, 1990).

The Upper Devonian Woodbend Group conformably overlies the Beaverhill Lake Group. The Woodbend Group is dominated by basin siltstone, shale and carbonate of the Majeau Lake and Cooking Lake formations. The Duvernay and Ireton formations surround and cap the reef complexes of the Leduc Formation.

The Leduc reefs are characterized by multiple cycles of reef growth including backstepping reef complexes and isolated reefs (Mossop & Sheston, 1994) and is the target formation for lithium brine resources in the Garrington District.

The Duvernay Formation is composed of dark bituminous shale and limestone which contain and preserve a large accumulation of organic carbon thought to be the source for most of the conventional hydrocarbons in the upper Devonian in Alberta. The Duvernay is the time equivalent formation to the Leduc formation and is interpreted to be basinal sediments that were deposited at the same time as the Leduc reef complexes were forming.

The Ireton Formation caps the Leduc reefs and was deposited through increased fine-grained sedimentation into the region (Mossop & Sheston, 1994). The Ireton Formation is a seal that forms an impermeable cap rock over the Leduc reefs (Hitchon, Bachu, Underschultz, & Yuan, 1995).

The Woodbend Group is conformably overlain by the Winterburn and Wabamun Groups of upper Devonian age. In the Garrington District, the Winterburn thickness is available from well logs (from previously drilled wells for petroleum) is composed of shale and argillaceous limestone. The Wabamun Group is composed of buff to brown massive limestone interbedded with finely crystalline dolomite at the base.

The Wabamun Group is unconformably overlain by the Lower Carboniferous Exshaw Shale. The Exshaw Shale is overlain by the Banff Group, which is composed of a medium to light olive grey limestone with subordinate fine-grained siliciclastic rocks, marlstone and dolostone overlying a basal shale, siltstone and sandstone unit (Mossop & Sheston, 1994).

The Rundle Group conformably overlies the Banff Group and is composed of cyclic dolostone and limestone with subordinate shale. There is an unconformity present between the Paleozoic and Mesozoic strata, and therefore any Permian-Triassic strata in the area are not present or very thin (Mossop & Sheston, 1994).

The overlying Mesozoic strata consist of mainly Cretaceous sediments, which are alternating units of marine and nonmarine sandstone, shale, siltstone, and coals (Mossop & Sheston, 1994).

7.2.3. Quaternary Geology

During the Pleistocene, multiple southerly glacial advances of the Laurentide Ice Sheet across the region resulted in the deposition of ground moraine and associated sediments in south–central Alberta (Dufresne, et al., 1996).

Limited general information regarding bedrock topography and drift thickness in south-central Alberta is available from the logs of holes drilled for petroleum, coal or groundwater exploration and from regional government (Alberta Geological Survey) research compilations (Mossop & Sheston, 1994; Pawlowicz, 1995a).

Glacial ice is believed to have receded from the area between 15,000 and 10,000 years ago.

7.3. Structural History

The Garrington District is situated east of the Rocky Mountains, outside the deformed area. An extensive study (Edwards & Brown, 1999) using aeromagnetic data, gravity data, and lineament analysis indicates that deep-seated faulting related to the Precambrian basement and the Snowbird Tectonic Zone appear to have at least partial control on the distribution of reefs and some of the oil fields in the area.

Many of the Devonian reef complexes in the permit area are underlain by or are proximal to basement faults. This would imply that these deep-seated faults were active around the time of reef deposition.

7.4. Deposit Geology

7.4.1. Deposit Dimensions

The Garrington District covers several individual reef complexes that are not regionally contiguous throughout the district, comprising Townships 30 to 52 and Ranges 25 to 27 West of the 4th Meridian, to Range 7 West of the 5th Meridian, covering about 200 km x 35 km at its widest point, narrowing to less than 6 km wide at its thinnest (Figure 10), and is an average of 200 m thick.

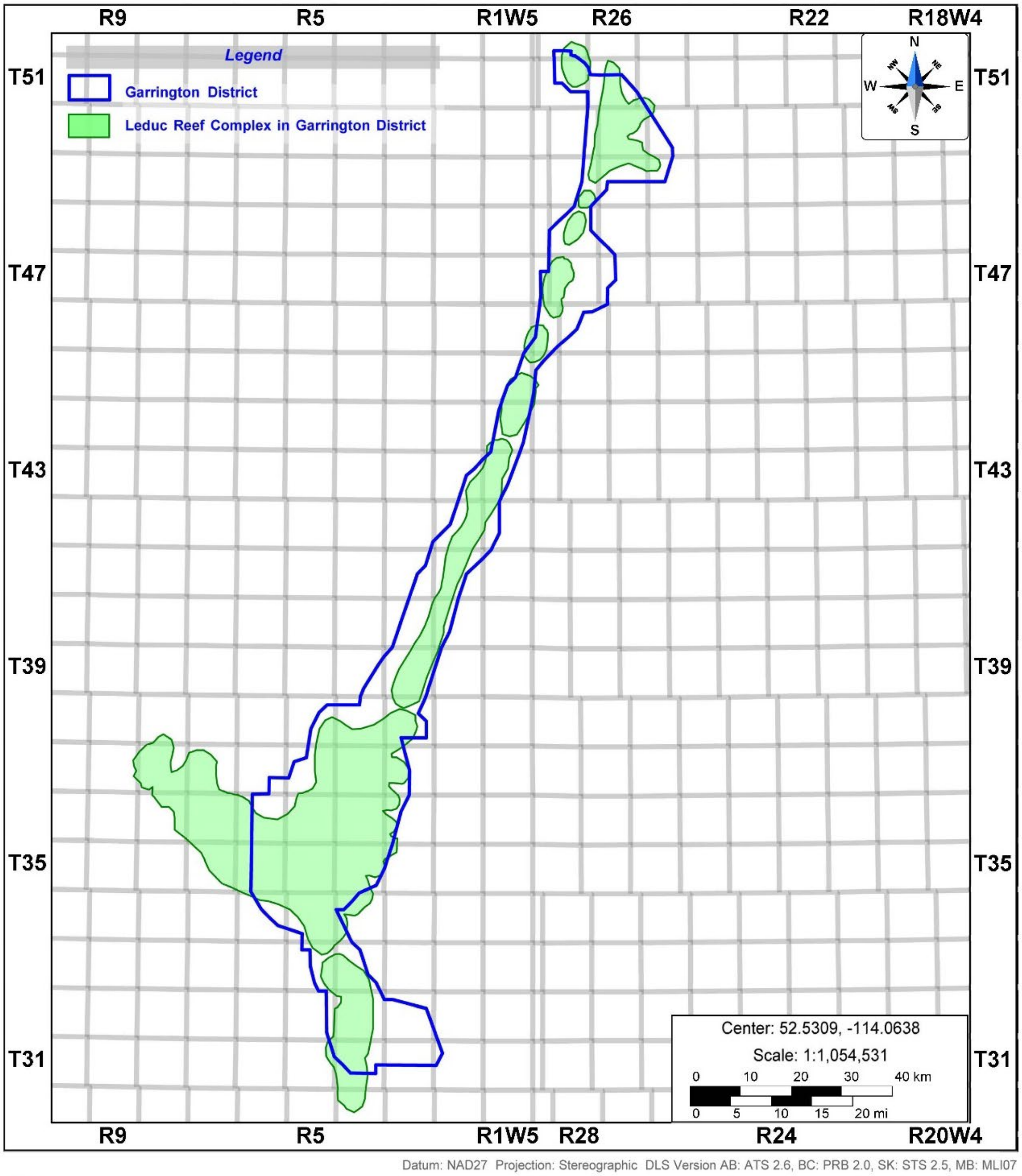

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Figure 10: Leduc Reef Complexes in the Garrington District

Note: Figure modified from (Mossop & Sheston, 1994)

7.4.2. Data Sources

A total of 196 wells in and around the resource areas penetrate the Leduc reservoir with 106 wells extending into the underlying Beaverhill Lake. This is typical of wells drilled for the purpose of hydrocarbon production in the Leduc reservoir, specifically.

Data sources used to evaluate the geological setting and mineralization were primarily derived from historical, publicly available oil and gas datasets. These datasets were evaluated for quality and are summarized in Table 5.

Table 5: Summary of Relevant Public Data Sources

Data Type	QA/QC Criteria	Data Usage	Note
Well logs (196 wells)	Logging completed by registered oilfield logging company with standards of practice and QA/QC procedures	• Geologic mapping (stratigraphic and structural) • Formation thickness (isopach) • Fluid contacts (oil/gas; oil/water)	Well logs penetrating through both the Leduc and the Beaverhill Lake formations were used to determine the top and bottom of the formations and, the lateral extent of the Leduc over top of the Beaverhill Lake. After formation tops were selected, well logs were then used to determine fluid contacts (oil/gas, oil/water) and reservoir parameters within the Leduc Formation. Neutron-density logs were used where available, as they are a more reliable log type. In an effort to leverage all available data, sonic logs were used where they were the only logs available. There are 196 well logs in the Garrington District which penetrate the Leduc reservoir, with 106 extending to the Beaverhill Lake Formation, that are of sufficient vintage and quality to use for interpretation
Petrophysical analysis (24 wells)	Complete wireline data set	• Porosity [total and effective] • Fracture identification • Evaporite identification • Fluid saturations	A petrophysical model was generated using 24 Log ASCII Standard (Digitized Well Logs, 2024) curves over the Garrington area. Effective porosity estimated from petrophysics was modelled using a shale volume approach.
Core data (104 wells)	Sufficient depth Sufficient recovery to visibly interpret core Public core analysis	• Facies characterization (porosity [total]; permeability [vertical & horizontal]) • Net to gross ratio • Guide log interpretation in areas without core	Core was described and analyzed by E3 (8 Cores). Publicly available core analysis was leveraged for effective porosity in the Leduc Formation for 104 wells, which was measured using helium injection and Boyle's Law (Boyles Law, n.d.) and permeability, and core was calibrated to petrophysical log data.

7.4.3. Leduc Lithostratigraphic Facies

The Leduc Formation sits atop the limestones and dolomites of the Cooking Lake Formation, which can be differentiated from the Leduc Formation by the presence of an argillaceous (shale) zone. Note that this argillaceous zone is not present in all wells, and the underlying Beaverhill Lake Formation has a much more regionally extensive argillaceous transition. The base of the Leduc reservoir for the resource estimation is defined as the top of the Beaverhill Lake Formation. Generally, the Cooking Lake and Beaverhill Lake formations have a slightly higher gamma ray response than the Leduc Formation.

The Ireton Formation overlies the Leduc Formation and can consist of mudstone to argillaceous dolostone, which are characterized by a much higher radioactivity than the Leduc Formation lithologies. This type of Ireton lithology is associated with a higher response in the gamma ray log (+30 API), compared to the carbonate rich Leduc, Cooking Lake and Beaverhill Lake rocks with very low radioactivity (APIs of <15). In some locations, the Ireton Formation is comprised of calcareous shale, and in those cases the contrast in gamma ray response between the Ireton and underlying Leduc Formation can be more challenging to define on logs.

Well 102/13-09-033-04W5, represents a type log suite of the Leduc reef (Figure 11). The top and base of the Leduc Formation are picked from wireline log suites across the Garrington District. The Leduc reef lithology across the Garrington District, biased to the upper section (where most of the cores intersect), showcase fully dolomitized lithologies, therefore original fabric and skeletal/non-skeletal grain makeup can be indistinguishable at best.

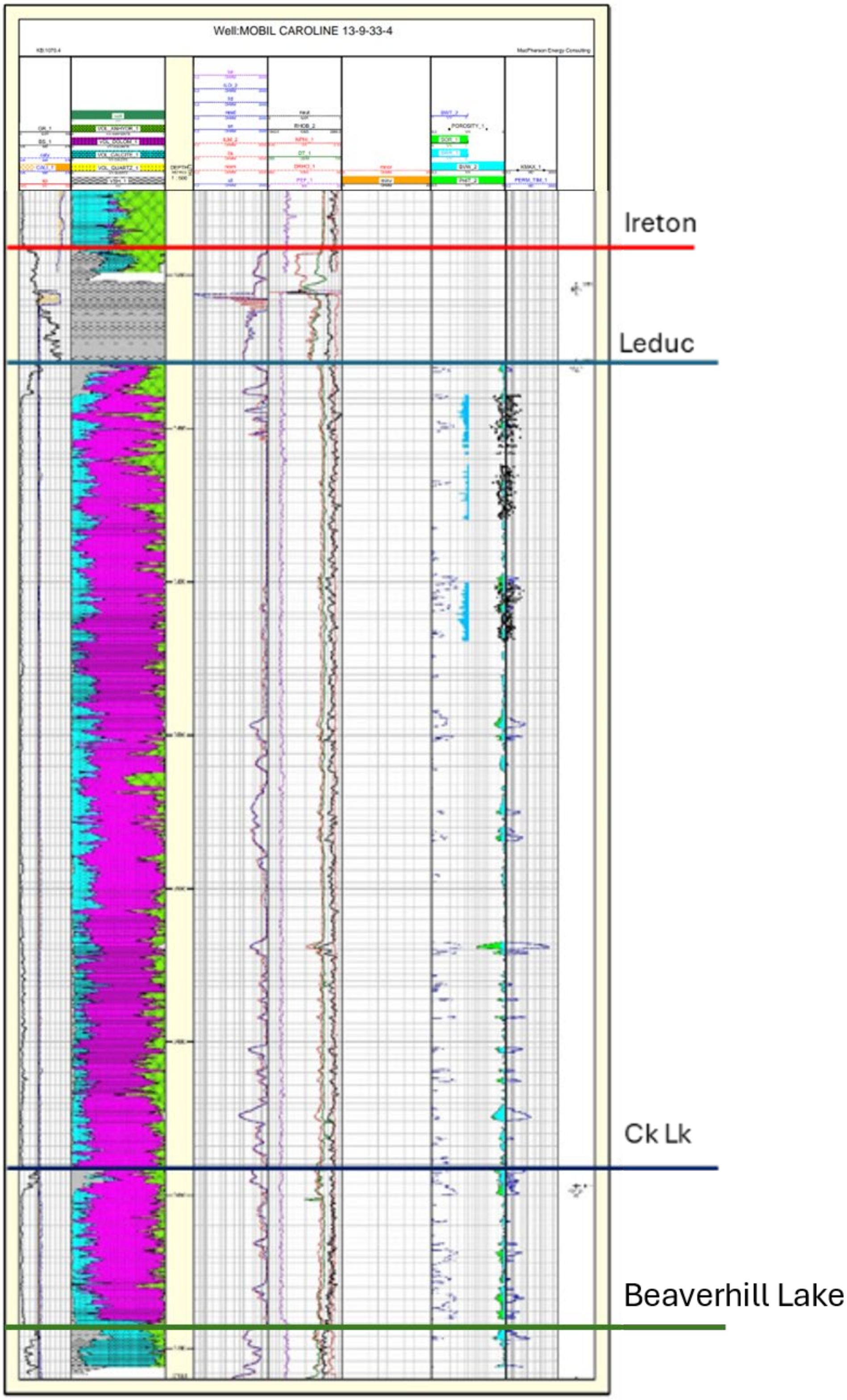

Figure 11: Type Well for Garrington 102/13-09-033-04W5

The Garrington District is made up of several smaller individual reef complexes that are separate from each other. Each of these areas was studied individually and regionally. Regionally, the Garrington District was categorized into 4 distinct areas (North, Middle, South, Harmattan) based on these reef divisions, combined with the regional pressure study, which indicated that some of the individual reef-pools were in pressure communication. The regional divisions were made to represent the regions of the Garrington District where the brines were hydrostratigraphically connected based on pressure communication (Figure 12). Figure 13 and Figure 14 illustrate lithological variation and continuity of the Leduc and Ireton formations in the Garrington District.

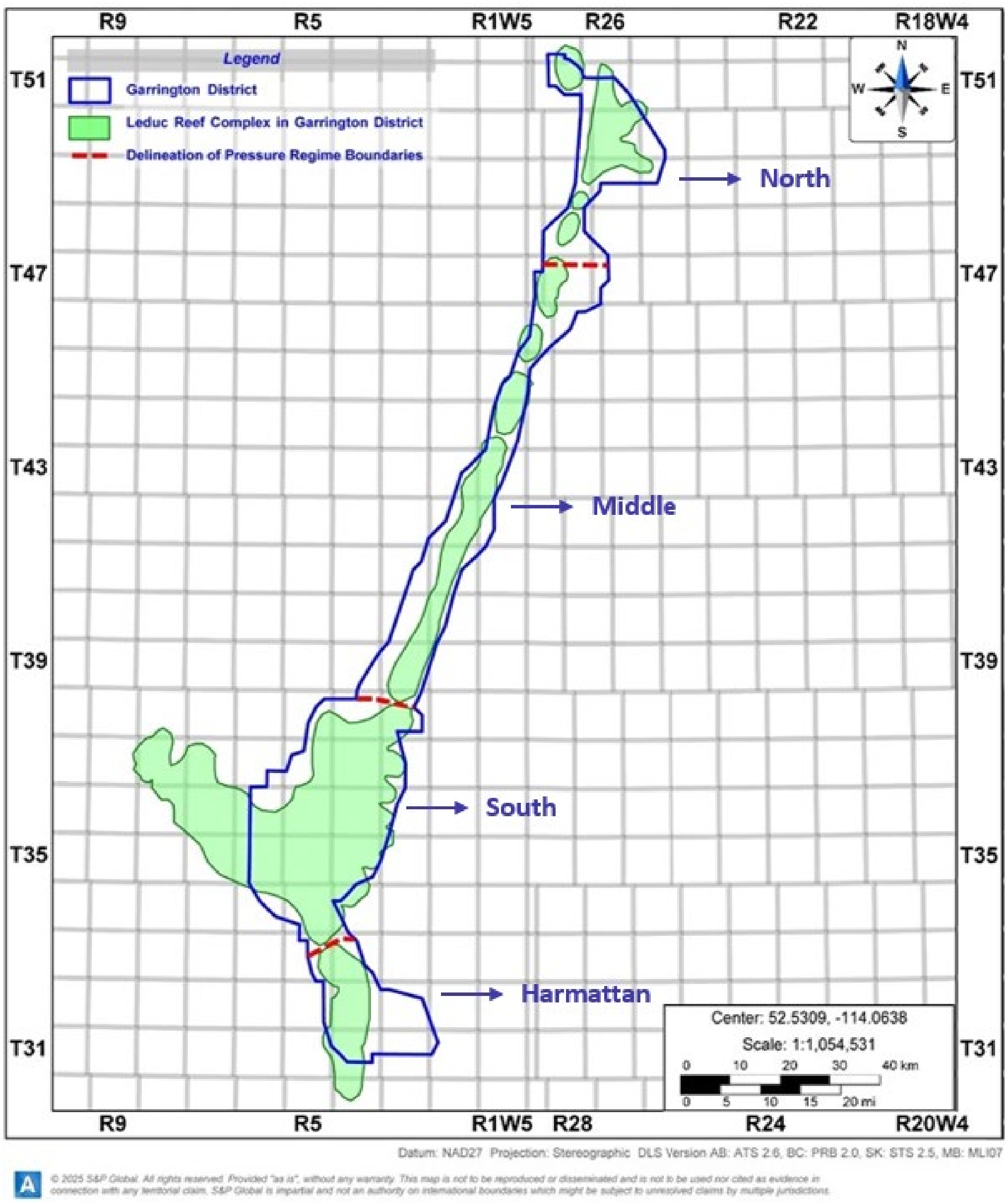

Figure 12: Pressure Regime Delineation within the Garrington District

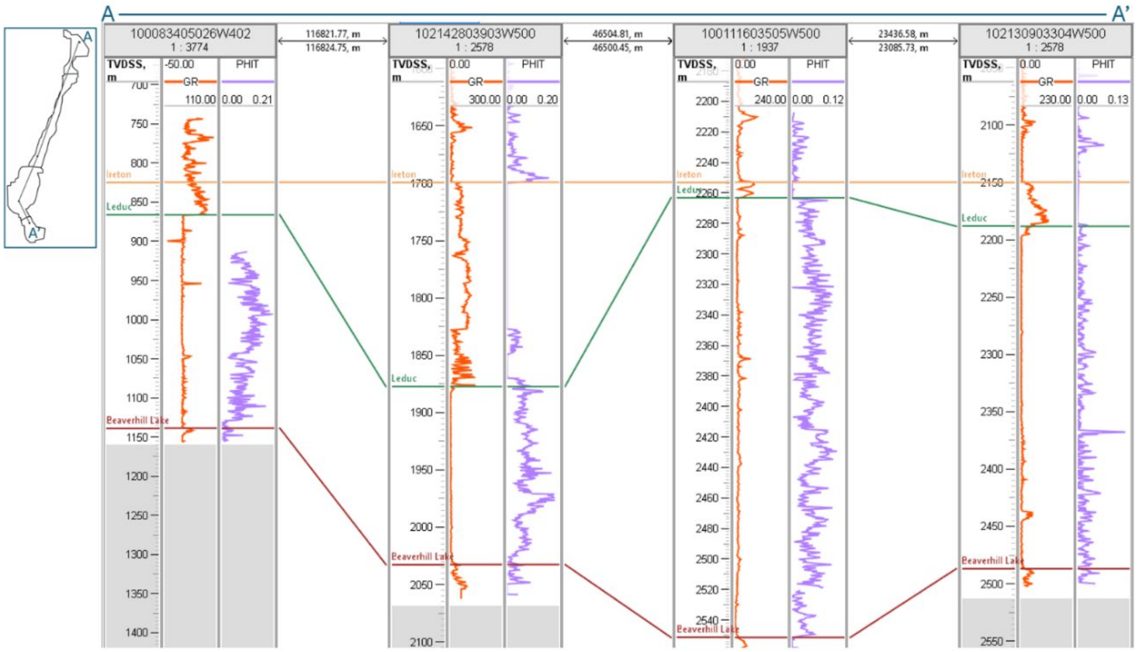

Figure 13: North–South Cross-Section (A-A') Through the Garrington District

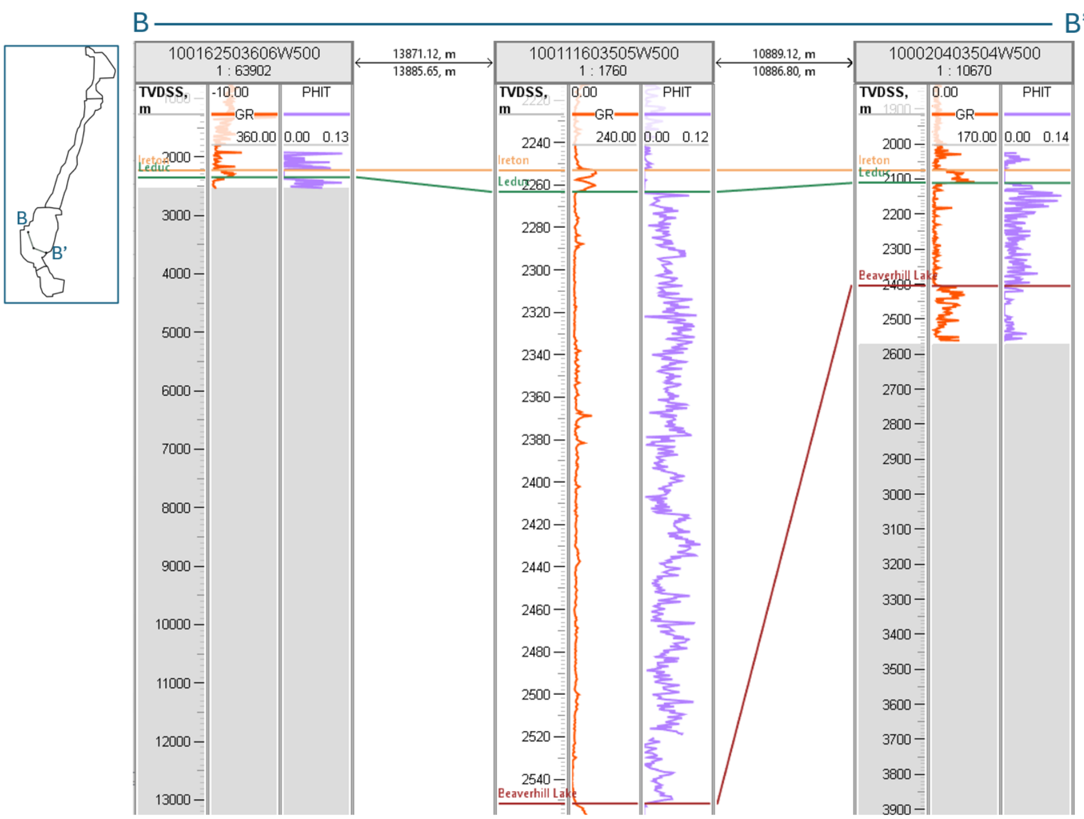

Figure 14: East-West Cross-Section (B-B') Through the South Garrington Area

Schematic representations of current relationship of the geology, structure and hydrocarbon pools in the Garrington District can be seen in Figure 15 (to scale with vertical exaggeration).

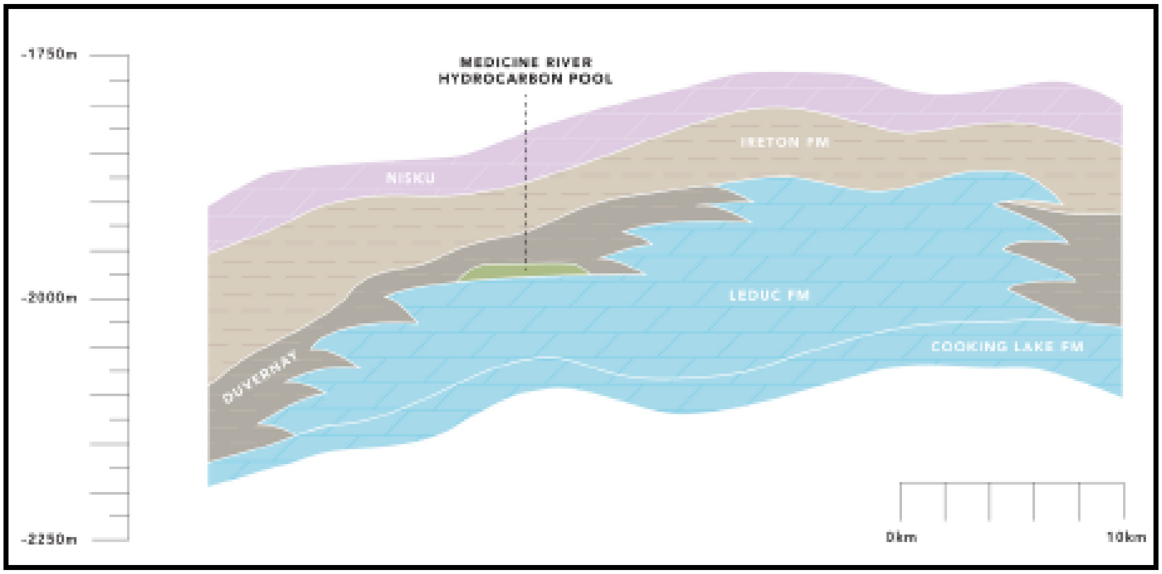

Figure 15: Stratigraphy and Geology Schematic of the Garrington District with Vertical Exaggeration

Lithofacies were identified, interpreted, and delineated based on sedimentary structures and textures observed in core (locations shown in Figure 16), and can be related to trends of porosity and permeability. Trends of porosity and permeability occur spatially and relate to depositional environments and diagenesis of the rock (McNamara & Wardlaw, 1991; McNamara & Wardlaw, 1991; Amthor, Mountjoy, & Machel, 1994; Mountjoy, Drivet, & Marquez, 2001; Atchely, West, & Slugget, 2006). The depositional model (Figure 17) showcases the facies identified and differentiated across the Garrington District. The main facies seen preserved in core was interpreted to be reef interior to reef margin facies. Much of the original facies and rock fabric has been destroyed by dolomitization, but there were some original rock fabrics visible to aid with the interpretation.

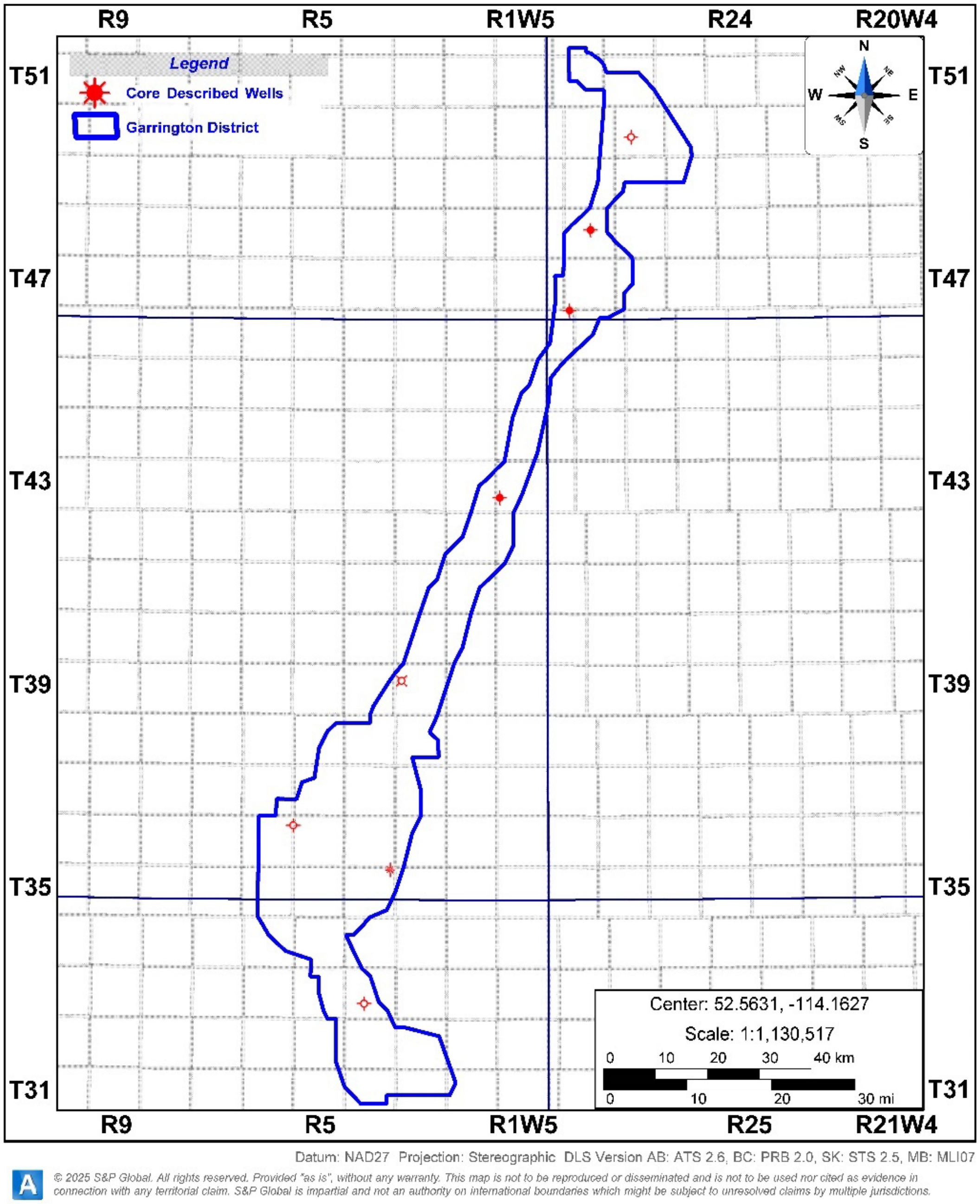

Figure 16: Core Described Wells in Garrington District

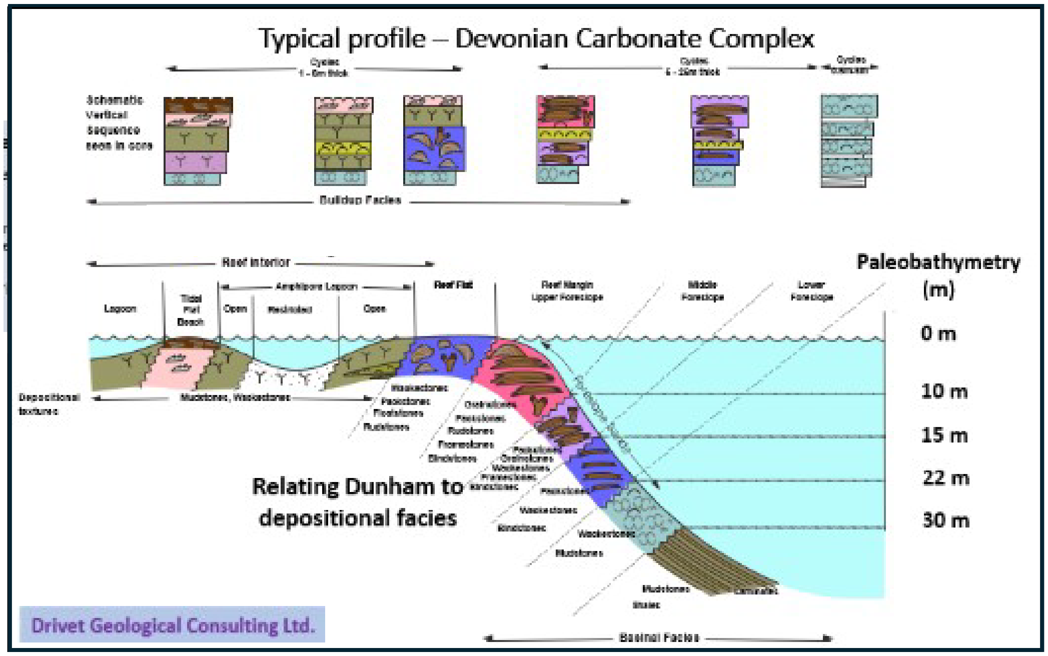

Figure 17: Depositional Model for Typical Devonian Carbonate Complex

Note: Figure prepared by Eva Drivet Consulting, modified from (Watts, 2008) *(unpublished); Wendte and Stoakes* (Wendte J. a., 1982)*;* (Wendte J. , 1992)

7.4.4. Reservoir Dynamics

Leveraging publicly available pressure data taken throughout the Garrington District, the resource volumes were estimated for four distinct areas (Figure 12) based on pressure trends versus time (Figure 18). The data (including data from build-up tests, fall-off tests, static gradients, drawdown tests, DSTs, flow and buildup tests, and flow gradient tests) showed that some of the individual reef pools were in pressure communication with each other.

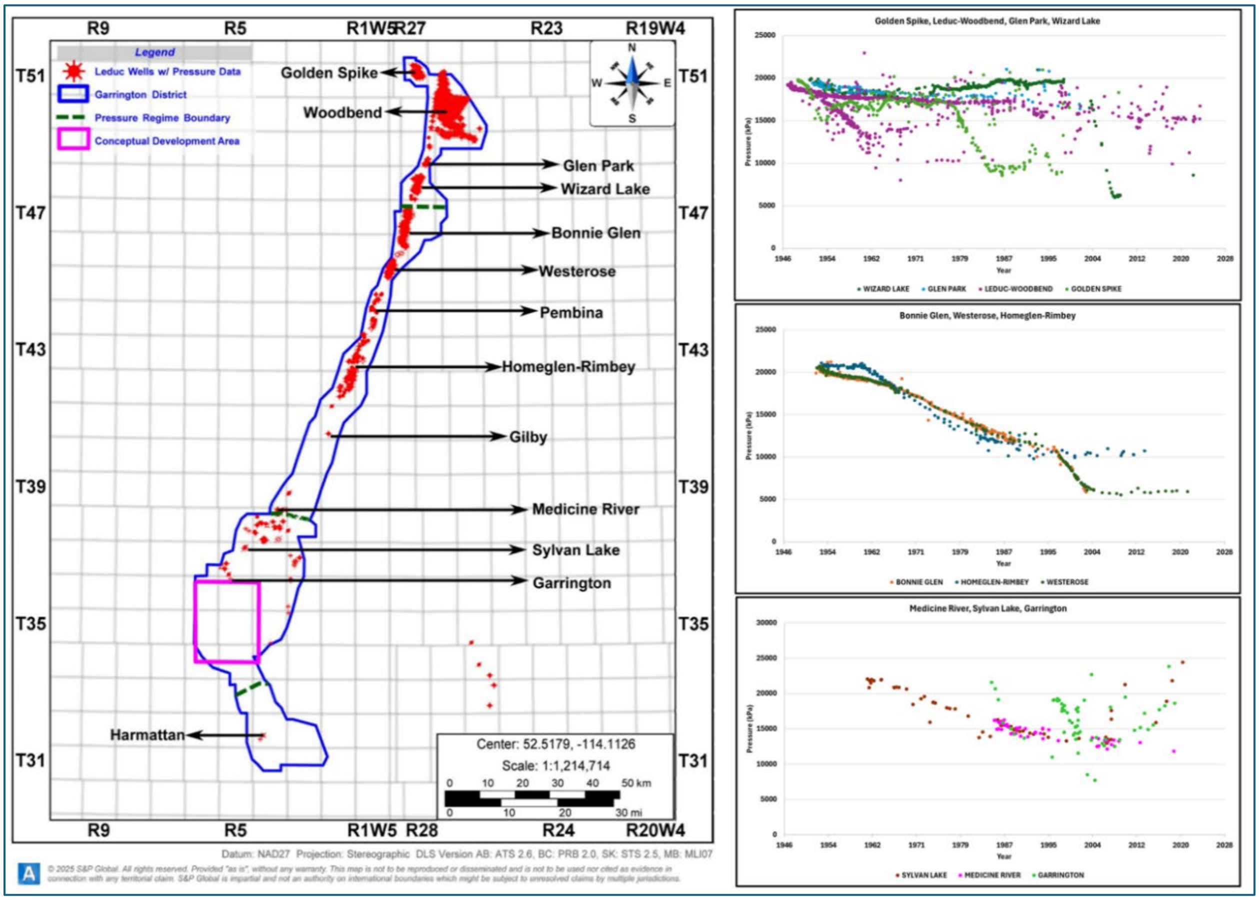

Figure 18: Pressure-Time Trends in the Garrington District

7.4.5. Mineralization

Most saline reservoirs in Western Canada have little to no lithium entrained within the brines. For the purposes of this report, “enriched” would refer to any brine reservoir that has more that 30 mg/L of lithium. The potential for lithium-enriched brine in the Devonian petroleum system of Alberta was initially identified by Hitchon et al. (Industrial Mineral Potential of Alberta Formation Waters, 1995). Potential reservoirs were located in reef complexes of the Woodbend and Winterburn Groups. Subsequent work by Eccles and Jean (Lithium Groundwter and Formation Water Geochemical Data, 2010), Huff et al. (Water Geochemical Data, Saline Aquifer Project, 2011; Water Geochemical Data, Saline Aquifer Project, 2012) and Huff (Evolution of Li-enriched oilfield brines in Devonian Carbonates of the South Central Alberta Basin Canada, 2016) measured the presence of elevated lithium (e.g., >75 mg/L) in reservoirs associated with the Devonian reef complexes.

The main lithium accumulations in E3’s properties (including the Garrington District) occur within brines contained within dolomitized reefs complexes of the Devonian-aged Leduc Formation, with a secondary accumulation occurring at a higher elevation in the Nisku Formation of the Devonian Winterburn Group.

The specific emplacement method for the lithium in these reservoirs is an active area of research. For the Leduc and Nisku system in southern Alberta, Huff proposed a source involving lithium concentrated Devonian evaporates to the west and upward movement of lithium-enriched brine into the Leduc and Nisku carbonates during later mountain building (Evolution of Li-enriched oilfield brines in Devonian Carbonates of the South Central Alberta Basin Canada, 2016). Research conducted on isotopes within brines over E3’s property areas suggests that the Garrington District contains brines that were originally Devonian seawater, that were further enriched via the liberation of lithium from in-situ clays, and these brines have subsequently been diluted by mixing of meteoric water post burial (Butler, et al., 2025). Additionally, the lithium grade variability across the Garrington District could be explained by the fact that the reservoirs are compartmentalized within this property area and not subject to the same degree of mixing over a large geographic area compared to E3’s Bashaw District which is pressure connected and hydrostratigraphically connected throughout.

8. Deposit Types

Lithium occurs globally as hard rock deposits from lithium-rich ores such as spodumene and petalite found in pegmatite rocks, with major hard rock lithium mines located in Australia, Zimbabwe, and Brazil.

The other lithium deposit type is lithium in brines, which includes 3 sub-sets: closed basin lithium brines, geothermal lithium brines, and sedimentary basin lithium brines. Closed basin lithium brine types include mostly unconfined aquifers within evaporative, arid lowlands known as salars, mainly located in South America's "Lithium Triangle" encompassing Chile, Argentina, and Bolivia. Additionally, they include deposits that are found in hydrothermally altered saline lacustrine clays like illite and smectite, in Nevada and New Mexico (Munk, et al., 2025).

E3's Garrington District resource is classified as a sedimentary basin brine deposit, as defined by Munk, et al. (2025). It is dissolved in the formation waters contained within the confined Leduc Formation aquifer.

In contrast to these sedimentary basin brine deposits, geothermal lithium brine deposits (>100°C) are also hosted in pressure-driven (confined) reservoirs and aquifers but in deeper settings with higher temperatures (Munk, et al., 2025). An example of a high-temperature geothermal brine deposit is the Salton Sea geothermal reservoir.

9. Exploration

Hydrocarbon production by oil and gas operators in E3's permit area is often associated with co-produced brine water from the Formation. Significant volumes of hydrocarbons and brine have been produced from the Leduc reservoir since the 1940's, and this has resulted in a rich dataset. Over time, the relative amount of water produced from the Leduc has increased in comparison to hydrocarbons. Water in some cases represents more than 98% of the total volume arriving at surface. Various oil and gas operators have allowed E3 access to oil and gas infrastructure for brine collection across the permit areas and this has enabled E3 to execute an exploration program without the costly requirement of drilling a well at the inferred resource stage.

Exploration activities to date have included brine sampling from existing hydrocarbon wells. Samples were collected from existing Leduc Formation-producing oil and gas wells by field technicians contracted by E3 from Bureau Veritas Labs (BV) in Red Deer, Alberta. All wells producing solely from the Leduc Formation, without any additional concurrent zone production (commingling from other formations), were earmarked for sampling and were accessed based on availability. Oil and gas operators generally cycle wells, so several field programs were completed to collect samples. Samples were either collected directly at the wellhead, or at test separators, by BV employees wearing self-breathing apparatuses due to the presence of H_2S (hydrogen sulfide) gas. The following sampling procedure was followed such that samples were collected, sealed, and labeled to avoid contamination and tampering, and ensured proper chain of custody measures were in place.

9.1. Field Sampling – Existing Oil and Gas Infrastructure

Samples were either collected directly at the wellhead, or at test separators. Where sampling was conducted at the wellhead, a 4 litre (L) jug was used to collect the production fluid at the pump jack. This fluid typically formed an emulsion of oil, water and gas, which readily separated out into phases in the bottle within seconds to minutes. Once the separation was complete, a small hole was created in the bottom of the bottle to allow only water to flow out of the 4 L jug and into a 1 L opaque amber glass bottle (Figure 19).


Figure 19: Sample Collection at Wellhead

Note: Photography by Bureau Veritas, 2021.
Left: BV employee sampling from access port into 4 L plastic container.
Right: Decanting brine sample from bottom of 4L container.

Samples were also collected at test separators. Test separators are used in the oil and gas industry to measure the flow rates of various wells and collect water and hydrocarbon samples from one or more wells at a satellite (Figure 20). Test separators for this resource sampling program were either 2-phase or 3-phase. Two-phase means that oil and water are separated from gas, whereas 3-phase means that oil, water and gas are each separated. For both 3-phase and 2-phase, there is a valve on the tank that can be opened to produce a fluid sample. In all cases, the company ensured that the wells used went "into test" at least 24 hours prior to sample collection to flush the lines and minimize the risk of contamination from other wells.

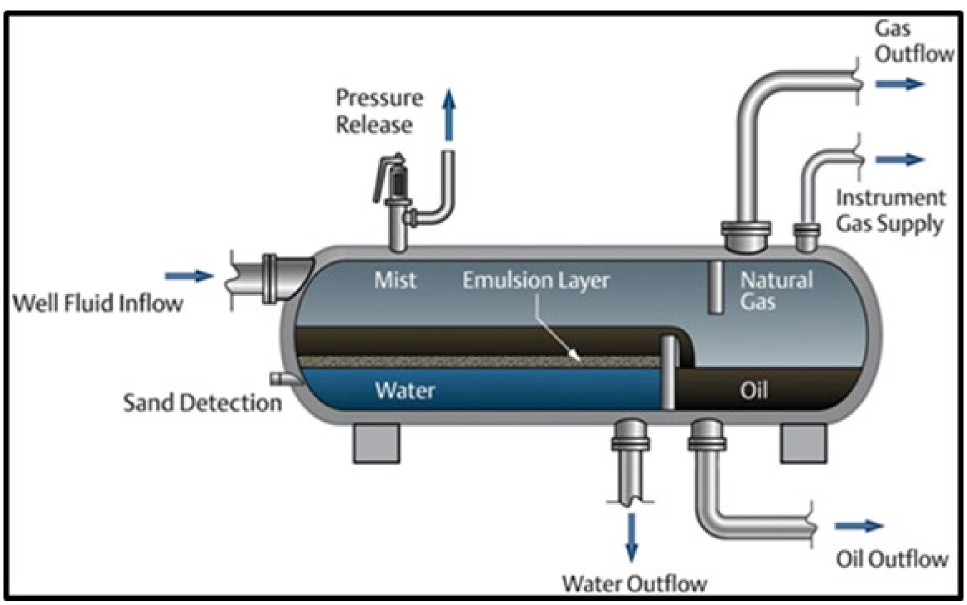

Figure 20: Schematic of Test Separator (Cahil, 2014)

On 2-phase separators, the valve was opened, and water was discharged into a test bottle to assess how much oil was in the separator before collecting directly into the opaque amber bottles. If there was a high volume of oil, sometimes the operator of the well was able to adjust on site to improve the amount of water flow. After adjustments were made, a mixture of oil and water was discharged into the 1 L opaque amber bottles (Figure 21).

Figure 21: Sample Collection at Test Separator

Note: Photography by Bureau Veritas, 2021.
Left: Bureau Veritas employee collecting samples from test separator access port.
Right: Sealed well samples.

On 3-phase separators, a bottle of water can be collected with very little gas or oil. In this case, the valve was opened, and water was discharged directly into the opaque amber 1 L bottles.

In all cases, two 1 L opaque amber bottles of sample were collected on each well. The bottles were filled up to the very top with reservoir water to ensure no air could get trapped in the top. A cap was then screwed on, and the cap was sealed with electrical tape. An E3 custody seal was affixed to the bottle and cap to ensure no sample tampering (Figure 22). These bottles were kept in a cooler with their chain of custody documents and delivered to the laboratory for testing once the sampling program was complete.

Sour gas (H_2S – hydrogen sulfide) was present at all the sites sampled. For this reason, safety precautions were taken by field samplers, including wearing H_2S sensors, and always having two personnel on site for sample collection. Where the H_2S content was high (above 10 ppm), Self Contained Breathing Apparatus (SCBA) with an oxygen tank was used to ensure the field samplers were safe.

A total of 24 samples from unique locations were collected for analysis in the Garrington District between 2017 and 2024. Out of the 24 locations, some have been sampled multiple times throughout that timeframe to maintain a record and understanding of brine consistency over time. In total there have been 33 samples taken (including repeat samples) over the Garrington District.

10. Drilling

10.1. Introduction

To date there has been no drilling in the Garrington district for dedicated brine-hosted minerals exploration and production. E3's reservoir data and sampling data have come from 3rd party wells that have been previously drilled by third parties for the purpose of oil and gas production from the Leduc (and other) formations throughout the Garrington District.

11. Sample Preparation, Analyses, and Security

11.1. Sample Preparation and Security

The general sampling procedure was consistent for all samples collected from existing oil and gas infrastructure (9.1 Field Sampling – Existing Oil and Gas Infrastructure). Samples were collected into 1 L opaque amber bottles (Figure 22). The bottles were filled to the top to ensure no air was trapped at the top. The cap was screwed on and then sealed with electrical tape. Each bottle was labeled with the Unique Well Identifier (UWI), sample interval depth, date, and an E3 custody seal was applied for security. These samples were kept secure in a cooler with chain of custody documentation to ensure proper handling and tracking throughout the process. Samples were subsequently delivered to accredited laboratories, including Bureau Veritas Laboratories (BV) Edmonton, Bureau Veritas Laboratories (BV) Calgary, AGAT Laboratories Calgary, and SGS Geochemistry Division, Lakefield, ON, for processing. BV, SGS, and AGAT labs are accredited by the Canadian Association of Laboratory Accreditation Inc.

Figure 22: Collected Samples with Label and Custody Seal

11.2. Analyses

In the laboratory, samples were first degassed to primarily eliminate H_2S. Samples from the same UWI were combined into a large beaker in a fume hood for H_2S degassing. A reference beaker of water was placed beside each sample to measure the degree of evaporation over the degassing period. This evaporation was found to be <1% for all samples and is reported along with the lithium result. After H_2S removal, the larger sample was stirred using a stir bar for at least 1 minute prior to subsampling to ensure sample homogeneity. Subsamples were then discharged into containers for trace metals testing at accredited laboratories. The degassing laboratory packed and shipped the samples to their respective destinations with chain of custody documentation.

Upon receipt at the respective laboratories, samples were vigorously mixed, and a subset was placed into a digestion tube. For samples collected prior to 2022, a two-step digestion process was employed: an initial digestion with hydrogen peroxide, followed by a second digestion using a mixture of nitric acid and hydrochloric acid. The hydrogen peroxide digestion was used to break down humic acids and organic compounds that could interfere with lithium measurement. In contrast, samples collected by third-party operators between 2022 and 2024 underwent a single-step digestion with nitric acid and hydrochloric acid only. Following digestion, all samples were diluted and analyzed using Inductively Coupled Plasma - Optical Emission Spectrometry (ICP-OES) for trace metals analysis.

11.3. Standards and Blanks

All brine samples submitted to accredited laboratories for lithium analyses have been accompanied by certified quality assurance (QA) standards and blanks to ensure the accuracy and reliability of the results. These measures are part of E3's quality control (QC) protocol to validate the analytical outcomes.

11.4. Sampling Program Results

A total of 39 Leduc brine samples were collected by E3 across the Garrington District (Figure 23).

E3 excluded publicly available brine data from consideration because it is unclear if the samples were subject to an equivalent of E3’s standard operating procedure or if a chain of custody to ensure sample security was used.

The sample dataset includes 24 unique well locations across the Garrington Area, with 15 repeat samples collected from six well locations over time. All sample data, including both repeat samples and unique samples from different wells, were considered in the calculations presented in this chapter. For the resource volume calculations in Section 14, a mean value was assigned to intervals with multiple samples over time after a qualitative review confirmed low variance on a temporal scale. This approach was implemented to prevent the overrepresentation of data from the same well, thereby minimizing potential bias in the resource volume estimation.

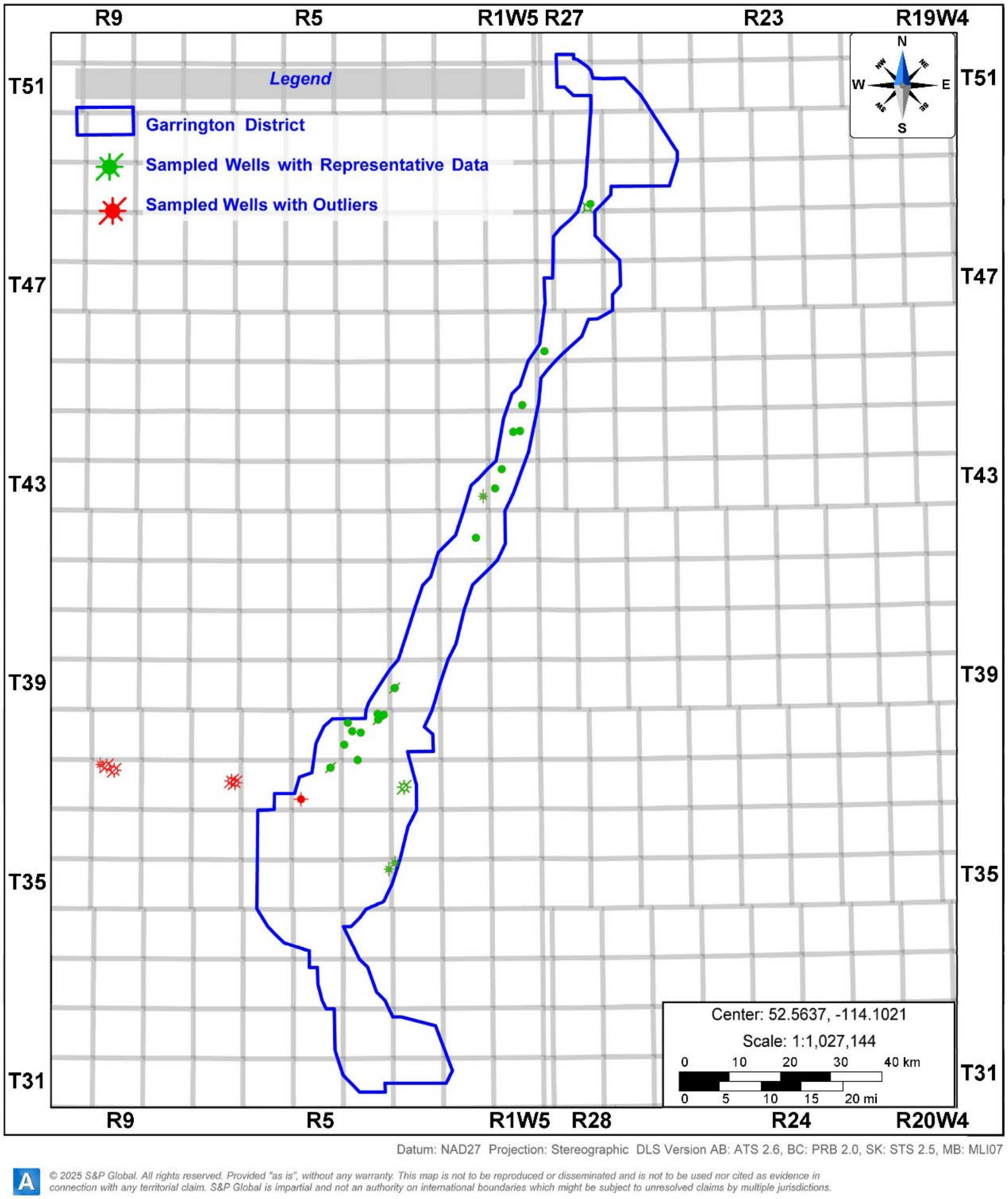

Figure 23: Wells Sampled by E3 for Resource Estimation in the Garrington District

Of the 39 samples reviewed, 33 were deemed valid based on a comparison of calculated total dissolved solids (TDS) and lithium concentrations, as well as the alignment of the sample geochemistry with the regional geochemistry of the Leduc brine. Samples that did not align with regional geochemistry, particularly in terms of TDS, were excluded. Figure 24 illustrates the correlation between lithium concentration and calculated TDS across all samples collected by E3. Representative samples (blue) align within the expected geochemical range, while outliers (orange) exhibit significantly lower TDS and lithium concentrations, indicating non-representative sampling conditions. A TDS cut-off of 150,000 mg/L was established as the threshold for validity in this evaluation. Samples falling below this cut-off were considered unrepresentative of the Leduc Formation and excluded from the analysis. It is also noteworthy that five of the six outlier wells are located at a significant distance from E3's existing permit area.

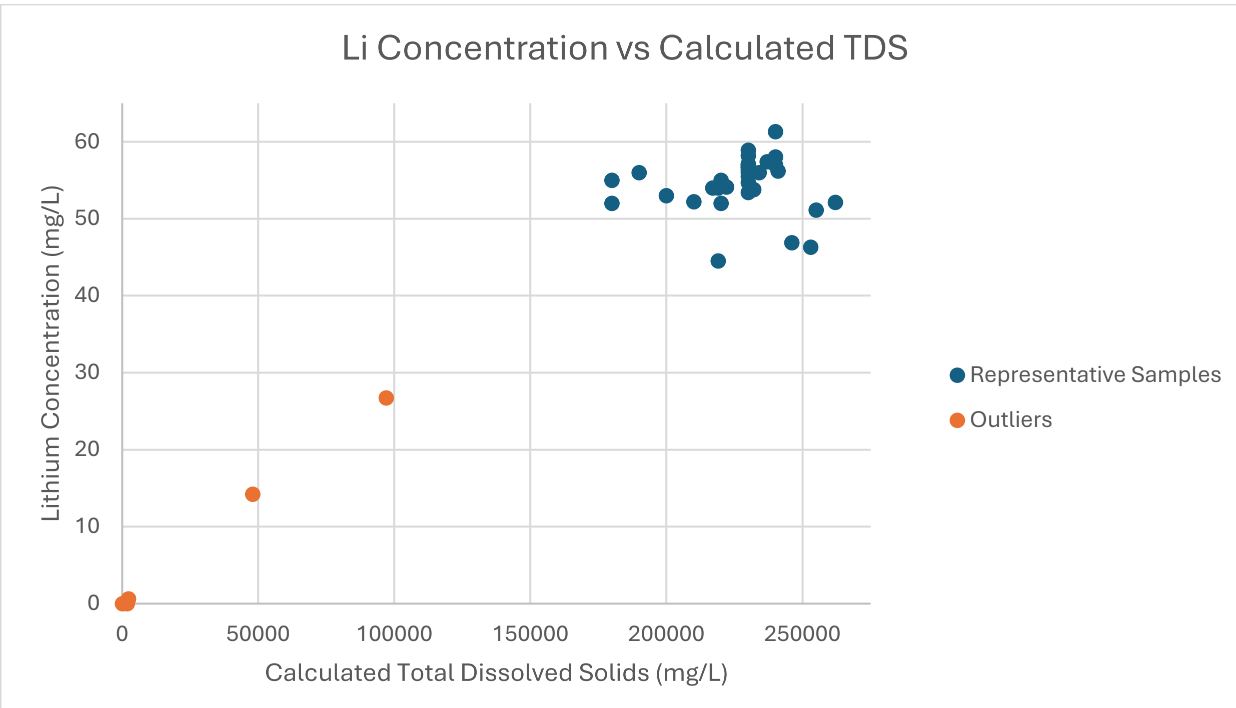

Figure 24: Relationship Between Lithium Concentration and Total Dissolved Solids (TDS)

Based on the sampling results, the Leduc Formation water is enriched in lithium in sampled wells across the Garrington District, and the data demonstrates consistency. Table 6 shows the Minimum, Maximum and P50 values for Lithium grade across the Garrington District. The QP validated that the data presented in this section has resulted from adequate sample preparation, security and analytical procedures.

Table 6: Minimum, Maximum and P50 Values for Lithium Grade across the Garrington Area

Resource Area	Min Li (mg/L)	P50 (mg/L)	Max Li (mg/L)	Number of Samples (n)
Garrington	45	55	61	33

Figure 25 shows the histogram of the sampling data demonstrating the distribution of lithium concentration across samples collected in the Garrington Area. The majority of samples fall within the 52.3–60.1 mg/L range, indicating a consistent lithium concentration across the dataset. The frequency distribution supports the observed stability of lithium values in this region.

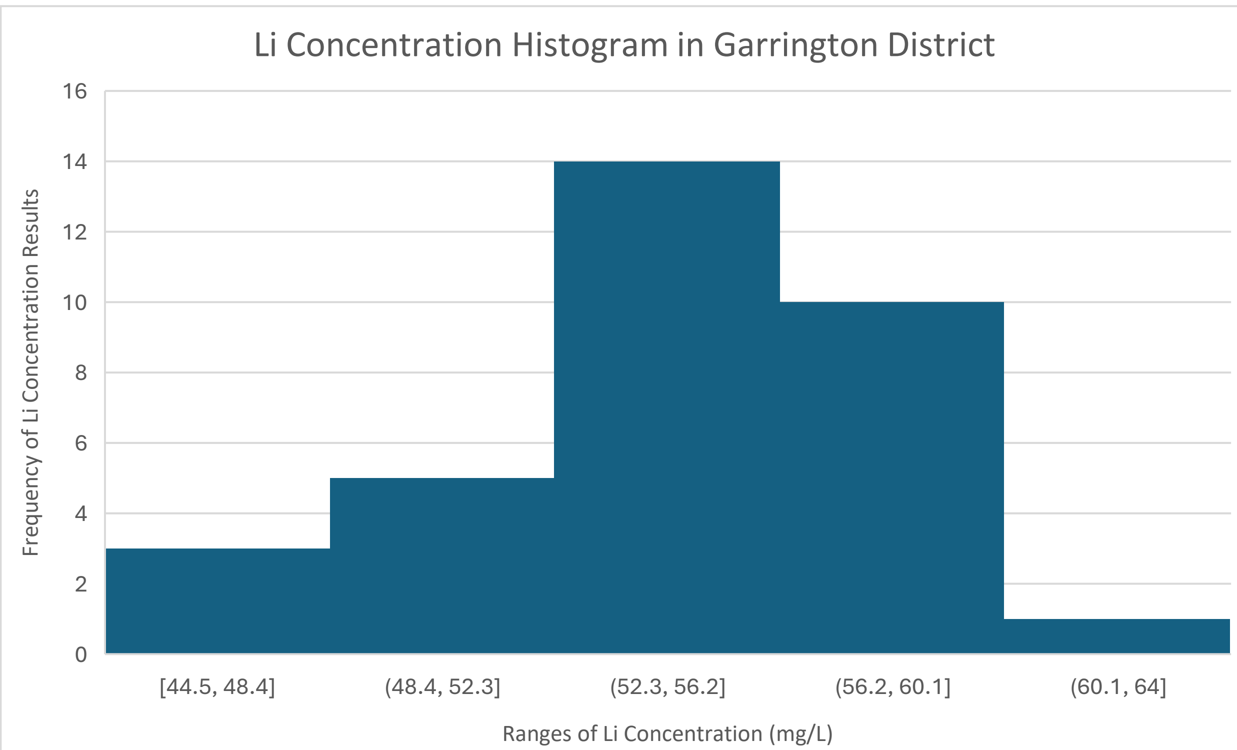

Figure 25: Histogram of Lithium Concentration in the Garrington District

A graphical summary of lithium concentration measurements from 15 repeat samples across six wells over time is presented in Figure 26. All analytical results fall within the acceptable limits prescribed by the laboratory. The data suggest that lithium concentrations have remained stable over time in the Garrington District.

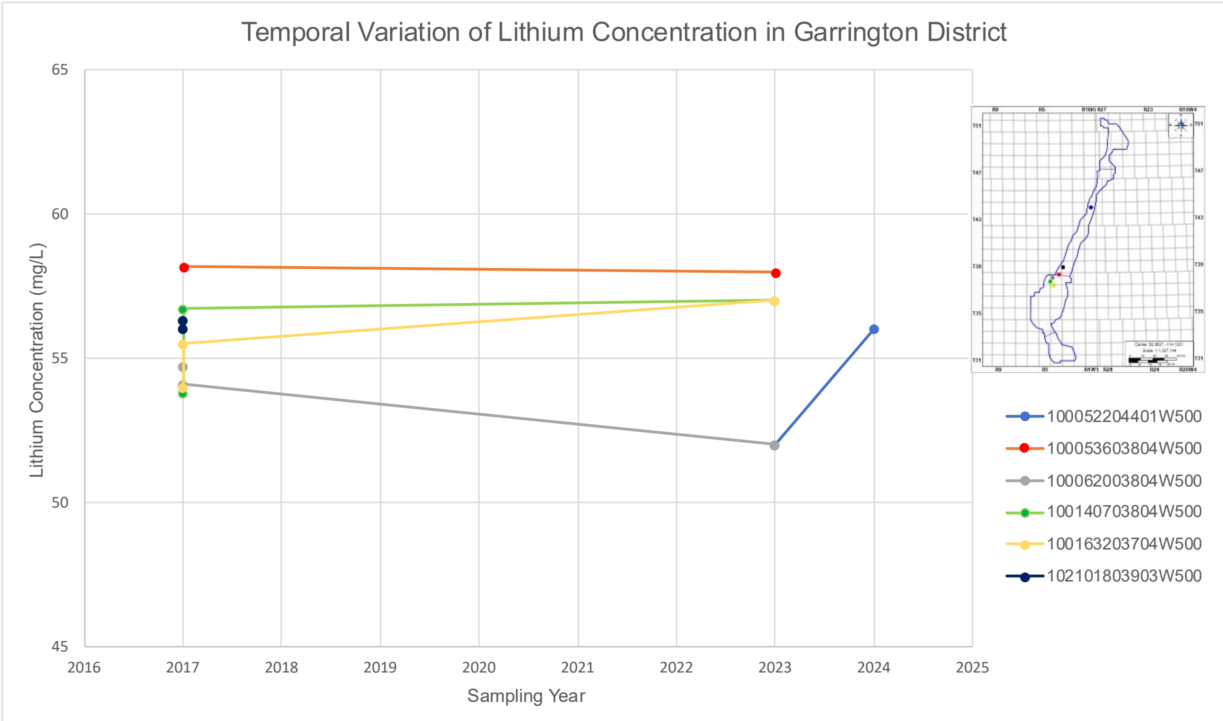

Figure 26: Temporal Variation of Lithium Concentration in Garrington District

12. Data Verification

12.1. Introduction

The report is based upon information and data collected and compiled by E3, public sources, and independent third parties. All data was validated by the authors. Mineral rights and land ownership information was provided by E3. Most of the information contained within the report was derived from the following:

- E3-supplied exploration maps, logs, third-party reports, and publicly reported third-party field test data;
- Oil and gas data compiled by the Government of Alberta; and
- Published literature (see References).

Sources of information are listed in References and are acknowledged where referenced in the report text. This includes technical papers covering the regional geology of the central plains of the Alberta Basin, with a particular emphasis on the Rimbey-Meadowbrook reef trend and the potential sources of lithium mineralization in the formation brines. The foundation of this analysis rests on established geological studies with a historical focus on the exploration and development of petroleum resources in Alberta.

To conduct mapping and formation evaluations, data sources included well logs, cores, formation drill stem tests (DSTs), and historic production results. Much of this data was collected historically in support of oil and gas exploration and development projects in the area. All data, publicly accessible through platforms like the Alberta Energy Regulator website, Alberta Geological Survey website or third-party mapping software providers such as AccuMap™, underwent a rigorous technical vetting process to ensure its reliability, regardless of its source.

12.2. Data Verification by Qualified Persons

The Qualified Persons verified the data that forms the basis of this resource estimate, including sampling, analytical, and test data.

12.3. Ms. Meghan Klein

Ms. Klein verified the data used to estimate the Brine Resource volumes, including:

- E3's 2017-2025 sampling programs (lithium concentrations);
- Brine chemical analysis;
- Historical production and injection volumes of hydrocarbons and brines (regional pressure measurement, rate data).
- Confirmation of reservoir pressure.

The data were considered acceptable for use in the Brine Resource estimation.

12.4. Mr. Alexey Romanov

Mr. Romanov verified the data used to estimate the Brine Resource volumes, including:

- Public well data such as logs and core analysis that were interpreted to evaluation formation depths and thicknesses, geological facies, lithology, total and effective porosity, and permeability;
- Core and petrophysical analysis for total porosity, effective porosity and permeability; facies description;
- Confirmation of reservoir lithology.

The data were considered acceptable for use in the Brine Resource estimation.

12.5. Lithium Grade Sampling

Ms. Klein, having reviewed the field sampling standard operating procedure and the laboratory testing standard operating procedure developed by E3 to achieve consistent and accurate sample collection and analysis, validates the standard operating procedures and chain of custody, for the sampling programs.

Ms. Klein reviewed the quality assurance/quality control results provided by E3 and reviewed the reports provided for each lithium sample by the laboratory. She is satisfied that data presented in this Report are adequate for the purposes of estimating Inferred, Indicated and Measured Brine Resource volumes.

Starting in 2019, Bureau Veritas Laboratories (then Maxxam Laboratories) and E3 worked with the same field staff for ongoing sampling programs.

There are a series of historical sampling results throughout the mineral property. These historical data were collected by Lyster, et al. (2021). The specific circumstances under which the samples were taken are unknown and accordingly these data were not included in the resource estimation.

13. Mineral Processing and Metallurgical Testing

13.1. Introduction

The metallurgical testing completed to date has focused on selectively recovering lithium from Garrington District brine with E3's DLE technology. The preliminary testing and analysis of E3's DLE performance specific to the Leduc brine from Garrington District has been completed by E3 in Q4 2024 and Q1 2025. Garrington District brine composition analysis was completed by Bureau Veritas and verified by E3's lab. Additionally, E3's DLE technology and process flowsheet has been extensively tested since 2022 with Leduc brine from E3's Bashaw District, and the entire flowsheet from lithium-rich brine to lithium carbonate is well understood. DLE performance testing has been completed and vetted by E3 personnel at the E3 lab facility as well as by external technology vendors and analytical labs.

E3 is continuing evaluations for the lithium conversion process that follows initial DLE. This extensive evaluation commenced in 2022 and tested a variety of technologies and processes within all steps of the flowsheet beginning with raw brine, all the way to a battery grade lithium carbonate or lithium hydroxide product. In 2025, E3 used its optimized flowsheet to produce battery grade lithium carbonate (>99.5% Li_2CO_3) in the E3 lab from its Bashaw District brine and expects to be able to do the same with Garrington District brine, given the initial DLE results.

These results were verified by SGS Canada Minerals Lakefield, an independent 3rd party accredited laboratory.

13.2. Continued Development and Testing of E3's DLE Sorbent Program

E3 has continued the program to produce, identify, and test different sorbent candidate forms. This program aims to maximize lithium recovery, selectivity, and loading capacity. Also, to maximize sorbent lifespan, losses and kinetics while minimizing water use and reagent consumption. The program has supported selecting the leading sorbent forms for further evaluation in subsequent test and optimization programs.

13.3. From Lab to Pilot Scale

In 2021, E3 designed, constructed, commissioned, and optimized their Manual Single Column ("MSC") for initial flowthrough testing of the leading sorbent candidate forms. The MSC is used for single cycle tests and has a minimum size to reduce material quantities and testing durations while offering representative design data. Results from the MSC tests provided the basis for designing and setting the initial operating parameters for the Automated Single Column ("ASC"), a larger DLE sorbent testing column system for continuous multicycle testing. E3 completed extensive testing within the ASC, supporting the technical development of the flowsheet with >1,000 cycles of DLE adsorption/desorption. The data gathered from the MSC and ASC tests laid the groundwork for the field pilot unit, which was running throughout 2023 ("the Pilot"). The data gathered from the Pilot enabled E3 to prove its technology's ability to scale outside the lab environment and provided the necessary feedstock for further downstream processing and testing.

14. Mineral Resource Estimates

14.1. Introduction

The resource estimate is based on reservoir geometries and properties populated in a 3D geological and reservoir model developed using Petrel™ (Schlumberger, 2024). Petrel™ is a commercial software platform that integrates geological and reservoir data, which was used to estimate volumetrics and evaluate grade distribution.

The geological model included the following reservoir characteristics: area geometry, structure, thickness, porosity, permeability, and lithium concentrations (grade). The 3D geological model was utilized to geostatistically simulate and evaluate scenarios of connected porosity in the reservoir that comprise the resource volume in the model domain. The model was validated in part based on existing and newly developed maps and cross-sections of depositional environments, facies, diagenesis, and oil and gas pools as described in Sections 6 and 7 of this Report. Additional validation by the QPs was completed by detailed review of the raw input data to the geological model, suitability of the geostatistical approaches applied, and output grids from the model.

14.2. Key Assumptions

The key assumptions for the Brine Resource estimate are listed in Table 7. The subsections that follow provide more detailed discussion.

Confined saline aquifers represent a distinct resource type for brine-hosted lithium deposits. The resource estimation methodology used is a new approach that the QPs believe honours the existing CIM Definition Standards and 2019 Best Practice Guidelines and incorporates methodology that has long been used in Canada through the NI 51-101 framework, the industry and national standard for resource estimation of petroleum liquids (or near liquids).

A CIM Best Practice Guideline exists for brine-hosted deposits, based on salar-based deposits which are hosted in unconfined aquifers subject to significantly different responses to pumping than confined aquifers.

Table 7: Key Assumptions and Rationale

Assumption	Rationale
Confined saline aquifers containing brine-hosted mineral resources can be estimated using effective porosity instead of specific yield.	The reservoir will not be dewatered during production and confined conditions will be maintained through life of production. The effect of reservoir compressibility (specific storage) is also not relevant to the resource estimate.
The effect of reservoir compressibility (specific storage) is not relevant to the resource estimate.	The conceptual development will be operated as a secondary recovery scheme supported by reinjection of the depleted brine.
The effect of irreducible water saturation is not relevant to the resource estimate. *Note: Effective porosity is used both in hydrogeology and the oil and gas industry to represent connected pores, although there is some inconsistency in oil and gas as to whether effective porosity does or does not include irreducible water* **(American Petroleum Institute, 1998)**.	The resource can be treated as a single-phase system that is fully water saturated. As such, irreducible water saturtation can be safely ignored (Von Rosenberg, 1956; Clerke, et al., 2008; Coats & Smith, 1964).

Confined saline aquifers can leverage a methodology that has long been utilized in oil & gas development, where resource estimation of liquids (including high viscosity near liquids) is common practice and standardized in Canada through the NI 51-101 standard. Brine-hosted resources have more in common with petroleum resources than they do with hard-rock mining – but not all brine-hosted resources are created equal. Unconfined aquifers, which are connected to atmospheric pressure, are under a different pressure regime than confined aquifers, which are disconnected from atmospheric pressure due to the presence of low permeability confining layers (aquitards or seals) above the aquifer. There are often gases (generally dissolved but sometimes free in certain structures) present in confined aquifers that provide pressure support. Additionally, as required by Directive 90 regulation (Alberta Energy Regulator, 2023) artificial pressure support is provided to the reservoir during production through reinjection of the depleted brine. In petroleum reservoir engineering, the ratio of injected volume (corrected to reservoir temperature and pressure conditions) to produced volume (corrected to reservoir conditions) is known as the “voidage replacement ratio”; production that occurs without reinjection is referred to as “primary recovery”, and with reinjection is called “secondary recovery”. These pressure regimes and reservoir drive mechanisms are fundamentally different and therefore different resource estimation methodologies should be applied to each.

The original in place mass, specific to lithium resource estimation, has been termed “original lithium in place” or OLIP, representing the total mass present in the subsurface. Original lithium in place is the basis for the Brine Resource estimate.

The final recoverable mass, termed “recoverable lithium in place” accounts for any losses during the processing stage and represents the total sales volume.

14.3. Key Parameters & Estimation Methods

The parameters required to estimate the confined aquifer Brine Resource are shown in Table 88, and the estimation methodology leveraging an integrated 3D geological model is presented in the following subsections. A summary description of the methodology and the data sources for each parameter is shown in Table 9.

Table 8: Required Estimation Parameters

Parameter	Description
Original lithium in place	The total amount of lithium contained in the brine-hosted confined aquifer, assuming irreducible water saturation is zero
Pore volume	The volume of effective porosity represented by the 3D gridding
Area	The areal extent of the confined aquifers
Thickness	The thickness of the confined aquifers
Total porosity (PhiT)	The total percentage of pore volume within a given rock volume
Effective porosity (PhiE)	The percentage of connected pore volume within a given rock volume. Effective porosity is used in the resource estimate and is referred to as “porosity” throughout the report.
Water saturation	The percentage of pore volume filled by water/brine
Lithium concentration	The quantity of lithium dissolved in the brine in the confined aquifer by mass concentration. Also used interchangeably with the term “grade”

Table 9: Key Parameters, Methodology, and Data Sources

Parameter	Methodology	Data Used
Area Geometry	• The isolated reef pods, and ‘edges’ along the Garrington trend, were defined by public data available by the Government of Canada[1]. The edges of the outline of the project area were then expanded from these reef edges to encompass the water-bearing zones below the hydrocarbon window, which has historically defined the edges of the Leduc. This expansion is supported by data from existing wells along the reef system trend, providing an extensive amount of wireline data, as well as cores that intersect the upper portion of the Leduc Formation. • A review of the pressure data (see ‘Pressure’ below) across the entirety of the Garrington trend reef complex, showcased the division of four different pressure regimes. These divisions are labelled: (1) North; (2) Middle; (3) South and (4) Harmattan and geographically divide the reef trend along with corresponding hydrocarbon pools into four geographic areas (Figure 12).	

[1] ‘Geological Atlas of Western Canada Sedimentary Basin’ (Mossop & Sheston, 1994)- Woodbend Reef Complexes and Index Map (Switzer, et al., 1994). These edges were digitized and edited by the Alberta Geological Survey (most recent 2005-06); and are interpreted from a compilation of references and manuscripts where a multitude of datasets such as, seismic, well data, and boots on the ground mapping, have been compiled to provide these edges.

Structure & Thickness	• The Leduc and Beaverhill Lake horizons, define the top and bottom of the 3D model. • Hydrocarbon-water contacts (2 timelines are represented) showcase the 'original contact' from wells older than 1970 (43 picks) and the 'transitional oil-water contact' (70 picks).	• 196 Leduc well tops were used to define the Leduc horizon, and 106 Beaverhill Lake tops, within Project Area • Hydrocarbon-water contacts were identified in 113 of these wells, and two contacts were interpreted based on a migration of the contact over time due to hydrocarbon production.
Porosity	• Porosity was obtained from PhiT logs, and a subset of wells with PhiT curves had core calibration. • PhiT were set to 0% porosity where Vshale exceeded 20%. • 104 well porosity measurements were upscaled to generate a porosity grid confined to the reef edges.	• 104 wells with core analysis • 24 wells with PhiT curves
Permeability	• Permeabilities (K90) measured from core analyses range from 0.01 mD to > 26,000 mD	• 94 wells with permeability (k90) measurements
Lithium Grade	• Lithium grade/concentration was determined by either averaging (if few samples) or statistical analysis (if more samples) across the (1) North and (2/3) Middle & South areas. • (4) Harmattan has no lithium data, therefore a lithium grade was estimated based on other water chemistry factors (TDS, and major cations, anions).	• (1) North: 2 wells were used to derive an average of 45 mg/L • (2/3) Middle & South: 22 wells were used to derive a P50 of 55 mg/L • (4) Harmattan: Correlations of TDS and major cations derived an inferred value of 38 mg/L
Pressure Data	• 846 wells established 4 different pressure gradients across the entirety of the Garrington District.	• 2263 points and 584 wells for (1) North • 788 points and 216 wells for (2) Middle • 194 points and 46 wells for (3) South • No pressure data in (4) Harmattan
Fluid saturation	• Fixed value of 99% used as input	• Assumed 1% dissolved gas volume in the brine as a safety factor
Cutoff	• 2% and 6% porosity cutoff were used to exclude non-productive reservoir and differentiate between resource estimate categories	• 2% porosity cutoff excludes portions of the project area deemed non-productive • 6% porosity cutoff represents a higher confidence in the resource, supporting a Measured Resource categorization in the Conceptual Development Area

Key data sets used to estimate reservoir brine parameters in the resource area include wireline logs calibrated using petrophysical analysis and porosity measurements taken from core in the Leduc. Figure 27 illustrates the well locations pertaining to the specific dataset collected.

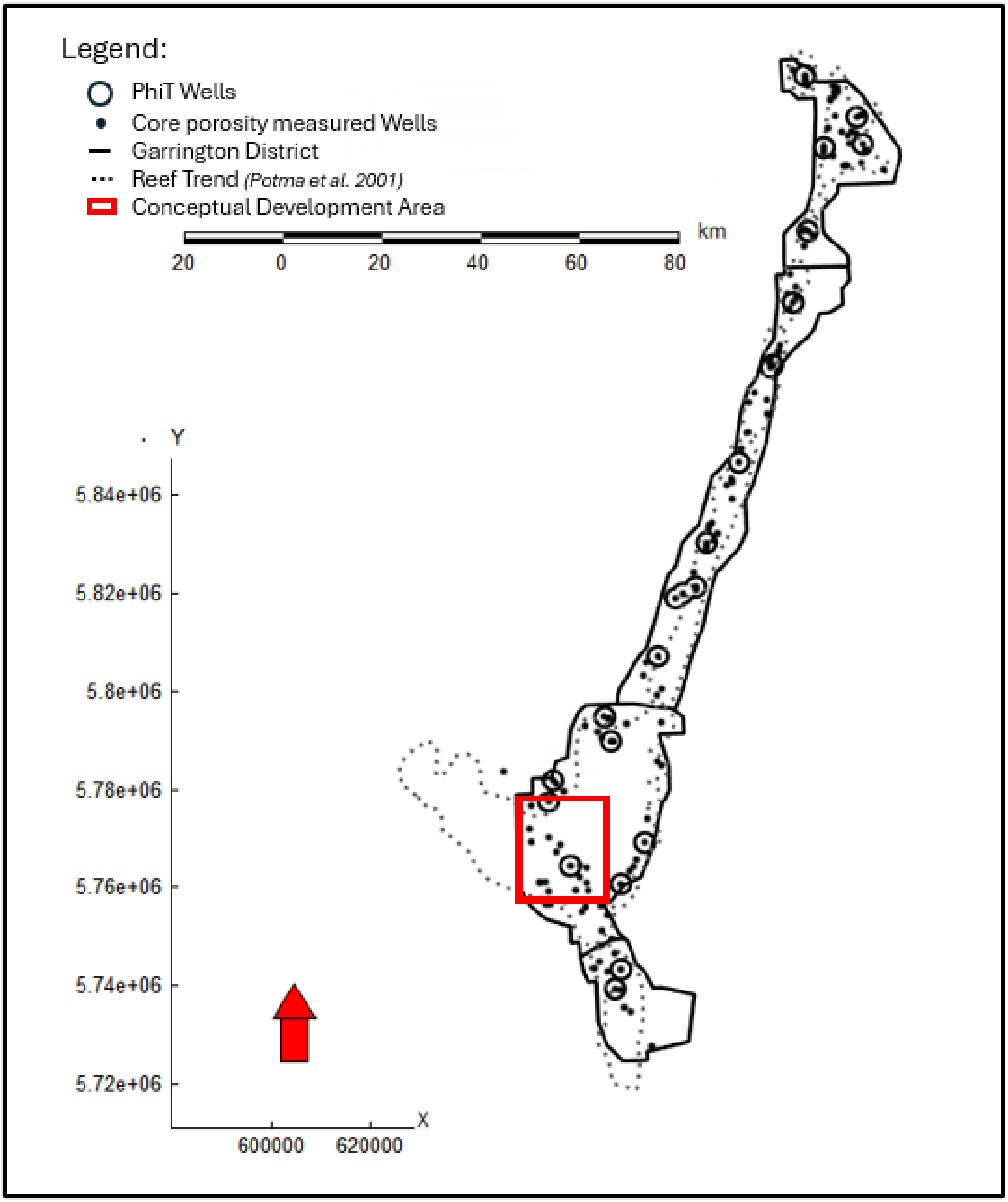

Figure 27: Porosity Measurement Locations in the Garrington District (E3 Licence Area)

The model enabled variogram-informed kriging for thickness and GRFS simulation to populate 50 equiprobable three-dimensional realizations for porosity. In addition to the modelling, updated statistical analyses of permeability (based on porosity-permeability correlations) and lithium grade (using variography and descriptive statistics) was completed.

The model allowed for quantification of 3D spatially connected volumes, described in Petrel™ as “geobodies”, above a given porosity cut-off and connected to a lithium grade sample location. Connected cells that are separated from other areas of connected cells are modelled as unique geobodies and identified as such in the model outputs.

14.3.1. Pore Volume

Pore volume quantifies the space available within the rock formation that contains the Brine Resource. It was estimated from the reservoir model grid by summing the porosity values from all the cells above a minimum porosity threshold connected to an adjacent cell also meeting the threshold (and for defining the resource, containing a lithium concentration measurement within the connected pore volume).

Area Geometry (Area, Thickness, and Structure)

The reservoir geometry of the Leduc reefs is spatially constrained by the extent of the reservoir and vertically by the thickness of the reservoir. Oil and gas well data, described in Sections 6 and 7, were used to define the shape and extent of the Leduc reservoir. Defining the geometry of the Leduc reservoir was an iterative process which involved analysis of existing wells drilled for the exploration and production of oil and gas in the resource area. The geological mapping process using well data has been in practice in Alberta’s petroleum industry for over 70 years to define geological formations. The Leduc Formation base and top were determined from well logs.

The publicly available reef edges of the Leduc Formation are not precise over the Garrington District. Additional geological interpretation was completed by E3 via the vetting and selection of geological tops over the Leduc and Beaverhill Lake formations, providing the boundaries for the overall isopach (Figure 28).

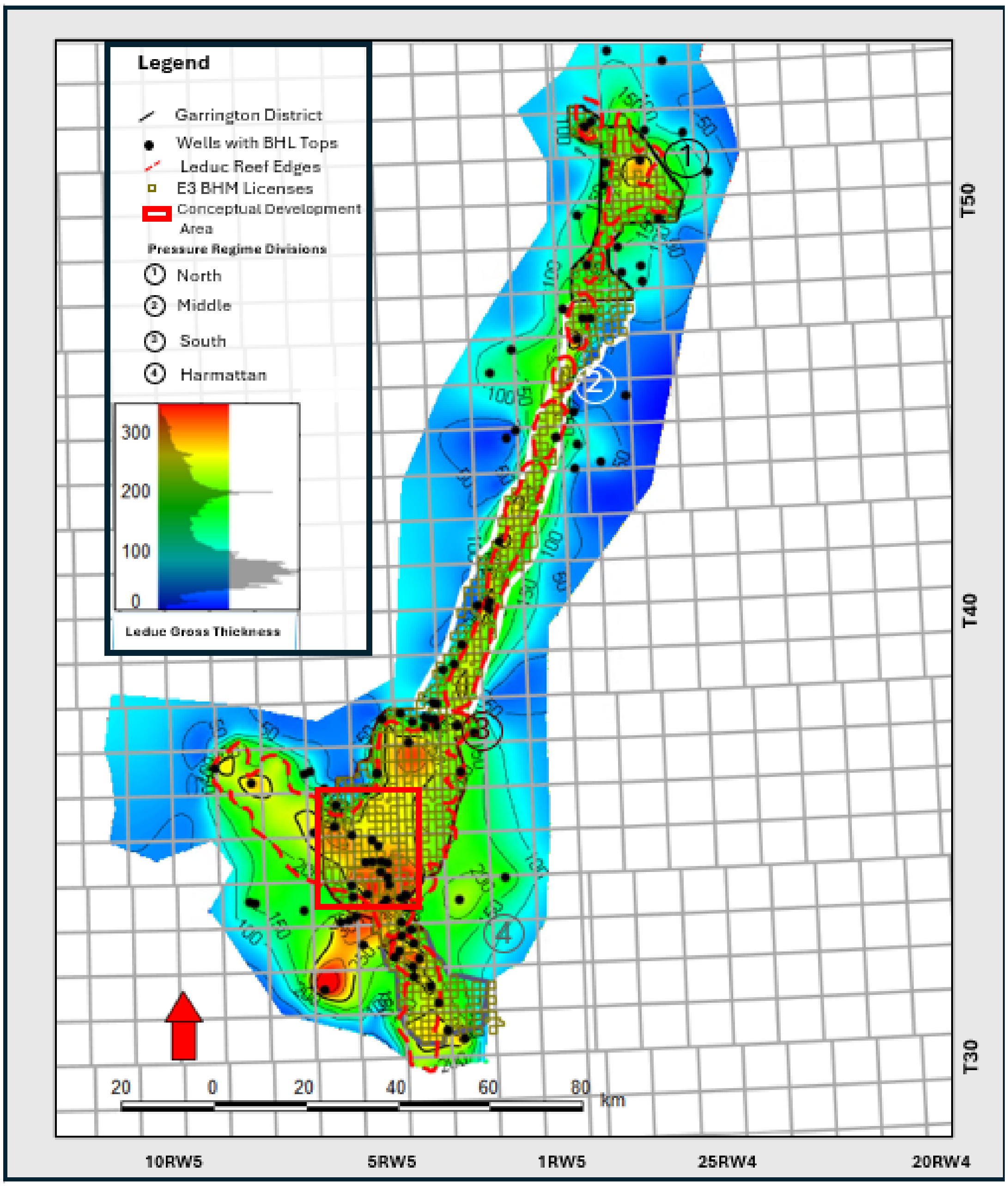

Figure 28: Leduc Isopach Map in the Garrington District

The Leduc Formation top was selected at the base of the Ireton Formation, which is predominantly shale, or contains higher clay content showing as a kick in the gamma ray log (Figure 11). The Beaverhill Lake Formation was selected using a regional shale at the base of the Leduc and/or Cooking Lake formations, and a combination of isopach thickness, and the gamma log where the regional shale was less distinguishable (discussed in Section 7). The top of the Leduc was picked on the resistivity logs of active or past producers. These formations were used for mapping structure and thickness for the Leduc and Beaverhill Lake formations. The geological data set used to construct the maps was comprised of 196 wells with Leduc Formation structure tops, 50 wells with Leduc hydrocarbon-water contacts, and 106 wells with Beaverhill Lake Formation structure tops (Figure 29).

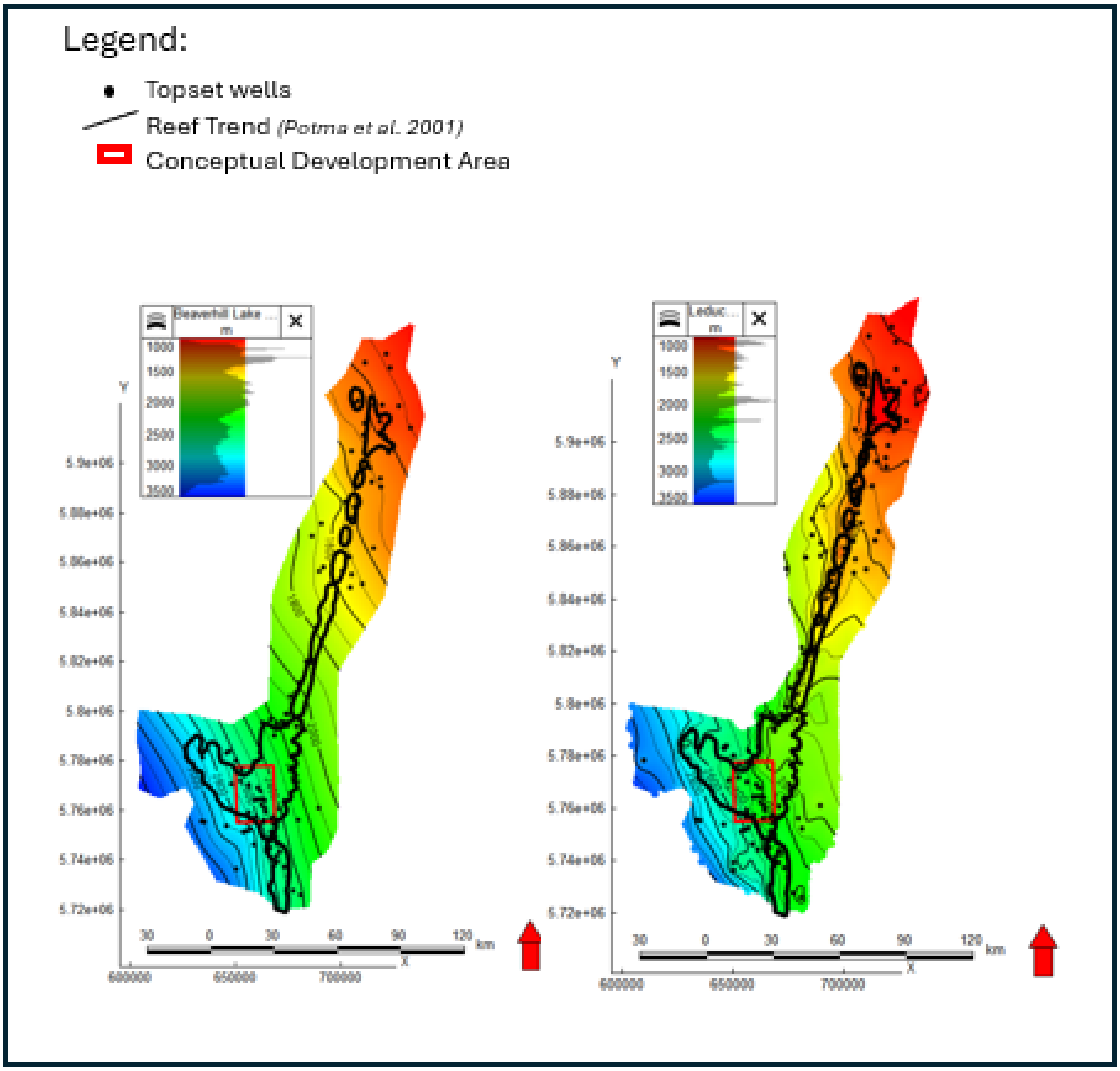

Figure 29: Top (SSTVD) of the Beaverhill Lake (left) and Leduc (right)

A 400 m by 400 m interpolation gridding was used to construct the Leduc and Beaverhill Lake horizons and Leduc Oil-Water contacts. A 400 m by 400 m by ~1 m gridding increment was generated between the Leduc and Beaverhill Lake horizons, resulting in a 3D model of the Garrington District containing 32 million blocks. The cell block size was deemed appropriate to honour the heterogeneity in geological properties informed by the input data (i.e. well logs and core) and be manageable computationally for completing additional analysis and future flow simulations. The structure horizons and thickness of the Leduc in the model accounts for the thinner edges and thickest portions of the reef complex.

The confidence in the reservoir structure and thickness is high at the borehole locations, as the interpretations are made from geophysical logs that are calibrated to the borehole depth and have a relatively high vertical resolution of measurement. Given the range in depths of the formation picks and the number of control points available in the Garrington reef complex trend, the uncertainty in the structure between the measured points is relatively low and would have a lower impact on the resource volume compared to other input parameters like porosity and grade.

Area Geometry (Pressure)

Pool data across the entirety of the Garrington District showcases differences in pressure regimes (Figure 18). Four distinct trends were noted, grouping respective pools that showcased similar trends. The four trends, defined as (1) North, (2) Middle, (3) South, and (4) Harmattan, contain the following pool data:

(1) North- Golden Spike, Leduc-Woodbend, Glen Park and Wizard Lake
(2) Middle- Westerose, Bonnie Glen, Pembina and Homeglen-Rimbey
(3) South- Medicine River, Sylvan Lake and Garrington
(4) Harmattan

Porosity

Current CIM guidance for lithium brines indicates that specific yield should be utilized for resource estimates (Canadian Institute of Mining, Metallurgy and Petroleum, 2012). This guidance was developed based on salar resources and based on the following discussion, for deep, confined, carbonate reservoirs where pressure in the reservoir will be maintained using re-injection, estimating the recoverable volume based on effective porosity and assuming irreducible water saturation is zero, in place of specific yield is appropriate.

Specific yield is defined as the amount of water that drains from the connected pores under gravitational forces (Woessner & Poeter, 2020) and an analogous petroleum geological term would be "recoverable volume", although reservoir drive mechanisms replace gravitational forces. Gravitational forces are not the driving mechanism for deep, confined reservoirs; instead, reservoir pressure is the dominating force. Reservoir pressures will be maintained during production, which means that the fluid level will not drop, and therefore the formation will not be dewatered, and pressure balance will be maintained. This means that the reservoir porosity will remain fully saturated during production, unlike in the definition of specific yield which replaces brine saturation with air. Furthermore, in this scenario, total system compressibility (i.e. specific storage), is not a controlling factor on the producible volume because the reservoir pressure is being maintained.

The petrophysical analysis to determine porosity was completed by a third party petrophysicist. A neutron density cross-plot was used to calibrate the log curves to account for the lithology of the reservoir, and where there was no neutron-density curves, or poor hole conditions were present, a sonic derived porosity was substituted. The QP's reviewed the outputs from this work and believe it accurately represents an estimate of porosity of the reservoir. A summary of this work is described in the following section.

Leduc porosity curves that were calibrated for 24 wells across the Garrington District are shown in Figure 30. These wells were selected based on geographical location and availability of core data. Core data was used to calibrate the well log derived total porosity. The effective porosity of the reservoir is essentially the connected pore space that allow for the flow of water through them. The connected porosity or effective porosity was established to be the portion of the reservoir that is at or above 2% measured porosity on the calibrated logs. Additionally, the porosity was set to 0% over the intervals where the shale volume was greater than 20% to ensure that the intervals that had higher shale content were properly discounted from the resource volume calculations, as these intervals are water bearing, but are considered to have no effective porosity.

Core porosity measurements are expected to be a direct measurement of connected pore space because porosity is assessed via gas injection. The estimated effective porosity (PhiE) from well logs was validated against core porosity measurements where available. This validation was completed at 18 well log locations. There is a correlation coefficient of 0.69 between the core measured porosity and the log derived porosity (Figure 30).

Effective porosity is used in the resource estimate and is referred to as "porosity" for the remainder of the Report.

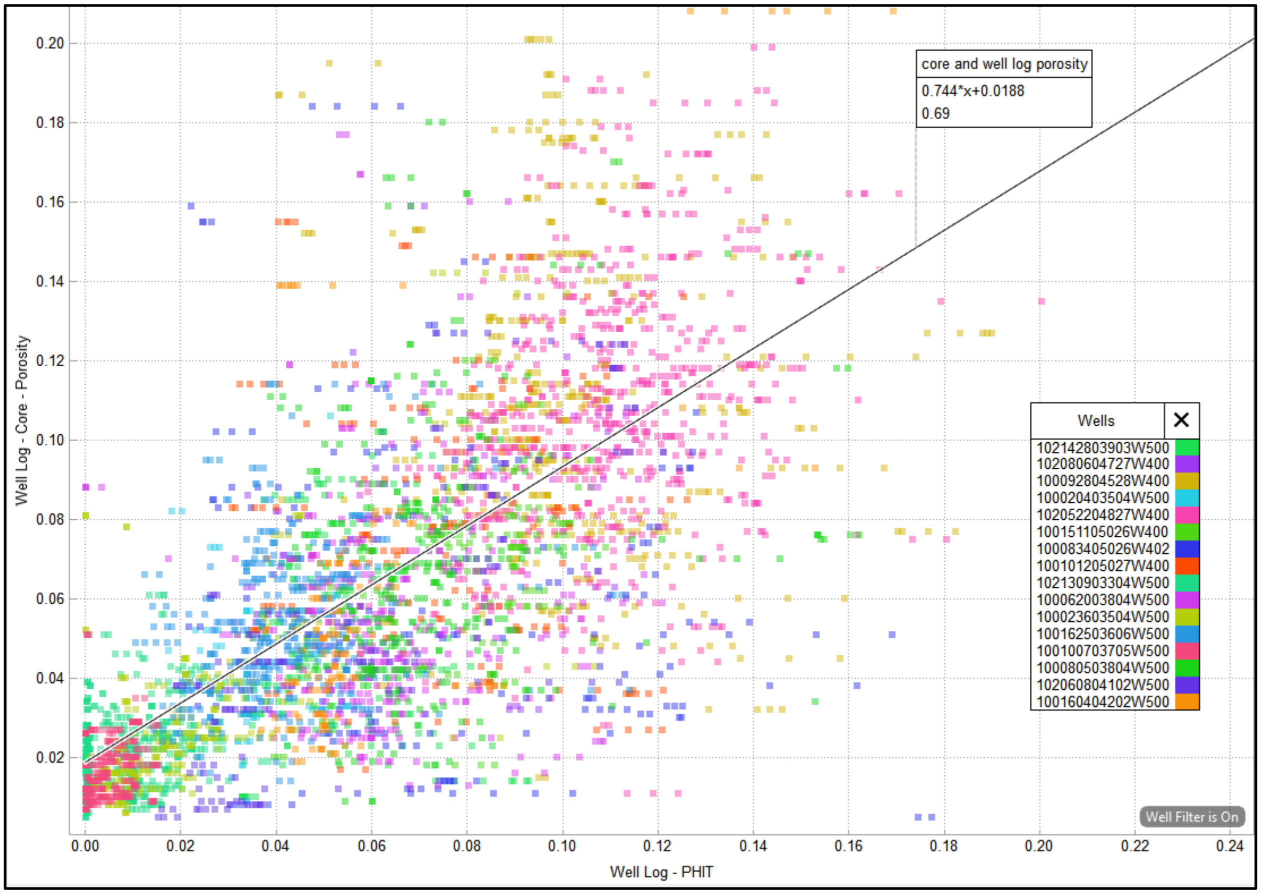

Figure 30: Cross Plot of Same Well Locations with Log Derived Porosity from Petrophysics with Core Porosity Measurements

Porosity Cut-off

Porosity data from well logs and core (104 wells total) was upscaled to create the porosity model.

The Garrington dataset is biased to the hydrocarbon producing intervals of the reservoir. To offset this, the dataset was declustered to produce unbiased variograms for generating the porosity model.

Net porosity thickness is the total thickness of the reservoir with porosity above a porosity cut-off. A porosity cut-off is typically selected to represent the lower productive limit of a formation, below which the rock is not expected to materially contribute to fluid production. Two separate porosity cut-offs were applied to the Inferred, Indicated and Measured Resource estimates, to represent a differing level of confidence in what porosity values can be confidently associated with permeability values (Figure 31) that would produce brine:

- A 6% porosity cut-off was used for the Measured Resource estimate on the basis that there is higher confidence that higher porosity intervals have higher permeability and will preferentially flow fluid first when a well is put on production; this has been applied over the Conceptual Development Area only as the Measured Resource estimate is confined to this area.
- A 2% porosity cut-off was used for the Indicated and Inferred Resource estimates on the basis that there is sufficient confidence that porosity above this value will flow to a well for production over the economic lifetime of a brine production well (i.e. decades).

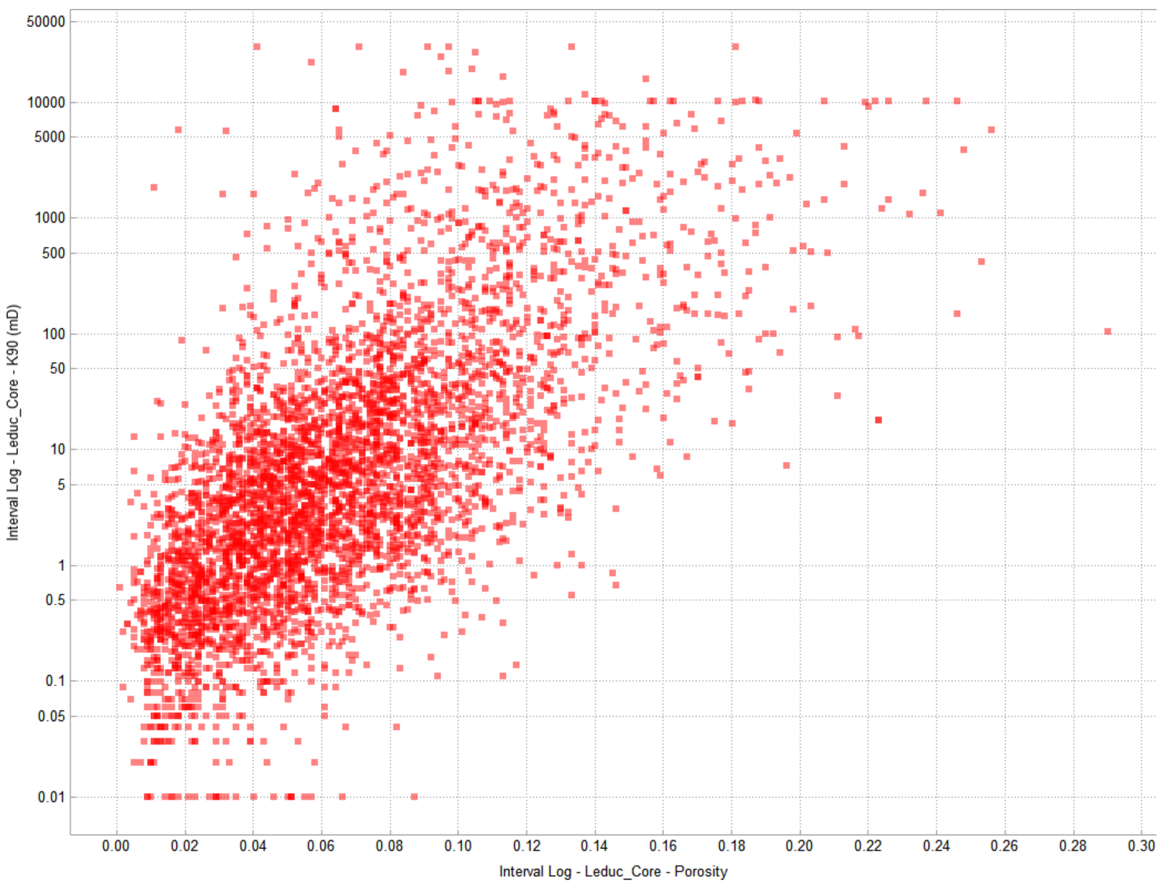

Figure 31: Porosity (Core) and k90 Permeability Relationship

Fluid Saturation

Pore volumes containing hydrocarbons were excluded from the brine-hosted mineral estimate (Figure 32). As the oil-water contact has shifted over time as a function of hydrocarbon operations, the mineral estimate applied different brine saturations to each of the following:

- Volume below the original oil-water contact, measured from pre-1970 logs was set to 99%, to account for any entrained gas
- Volume between the original oil-water contact and the transitional oil-water contact, measured from post-1970 logs was set to 50%, to account for residual hydrocarbons

Locations of pre- and post-1970 logs are shown in Figure 33.

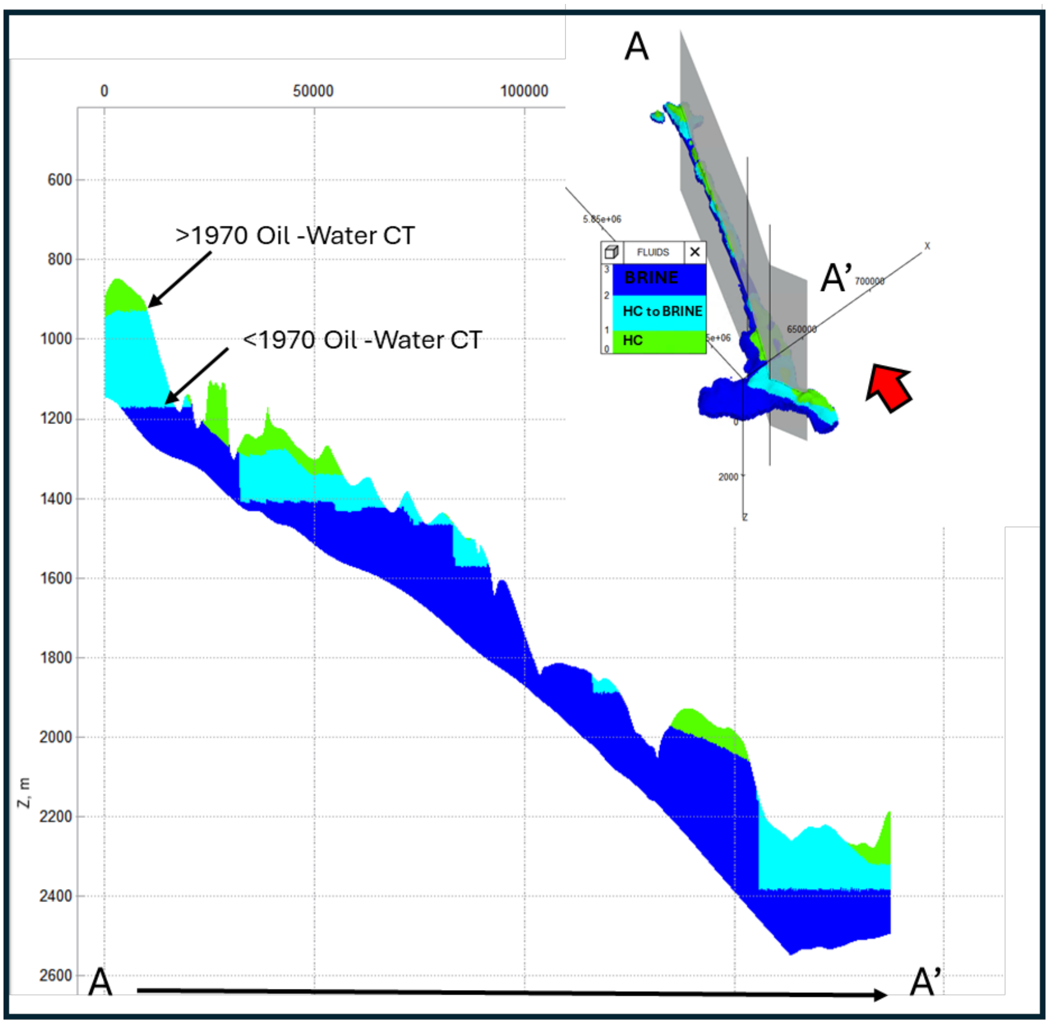

Figure 32: Cross-Section of the 3D Model Original and Transitional Oil-Water Contact

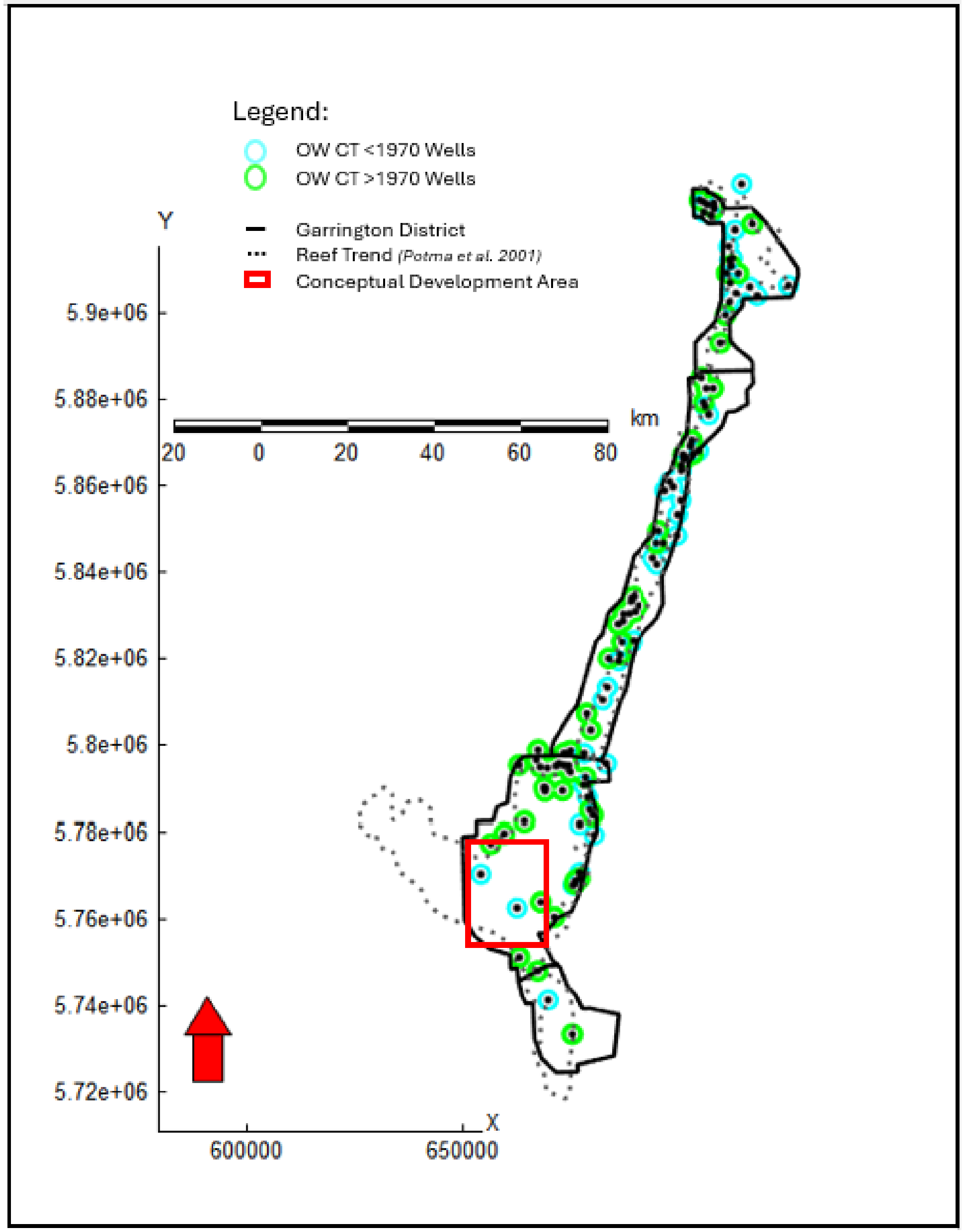

Figure 33: Wells Used for Original and Transitional Oil-Water Contacts in the Garrington District

14.3.2. Lithium Concentration

The mineral resource estimate was developed from a considerable amount of data collected by E3 between 2017 and 2024, as well as data compiled from the oil and gas industry, which is made public as a matter of normal practice by the Government of Alberta. Publicly available grade data (Section 6.5) was not used directly in the grade calculation but informed the understanding of grade continuity.

Continuity of resource grade for lithium brines relied on kriging and kriging variance, which is appropriate for reservoirs where lithium grade has spatial variability. The observed spatial variable across the Garrington project area is believed to be a function of dilution from hydrocarbon operations, due to historical injection and disposal volumes, as well as the structural variation across the project area. Conceptually, the model for the Leduc Reservoir is that it is a regionally continuous, hydraulically connected aquifer where the emplaced lithium has been regionally distributed through advective and dispersive groundwater flow over a long period of geologic time.

The lithium concentrations have a range of 45 to 61 mg/L with an average of 54 mg/L (Figure 34). For the Resource estimate, lithium grade/concentration was determined by either averaging (if few samples) or statistical analysis (if more samples) across the areas within the Garrington District.

- (1) North: 2 wells were used to derive an average of 45 mg/L
- (2/3) Middle & South: 22 wells were used to derive a P50 of 55 mg/L

There is no lithium data available for the Harmattan Region within the Garrington District. Analysis of available fluid data was used to extrapolate the fluid composition and estimate the lithium grade. Lithium grade in Harmattan was adjusted for differences in TDS and Ca, as compared to the rest of Garrington.

- (4) Harmattan: Correlations of TDS and major cations derived an inferred value of 38 mg/L

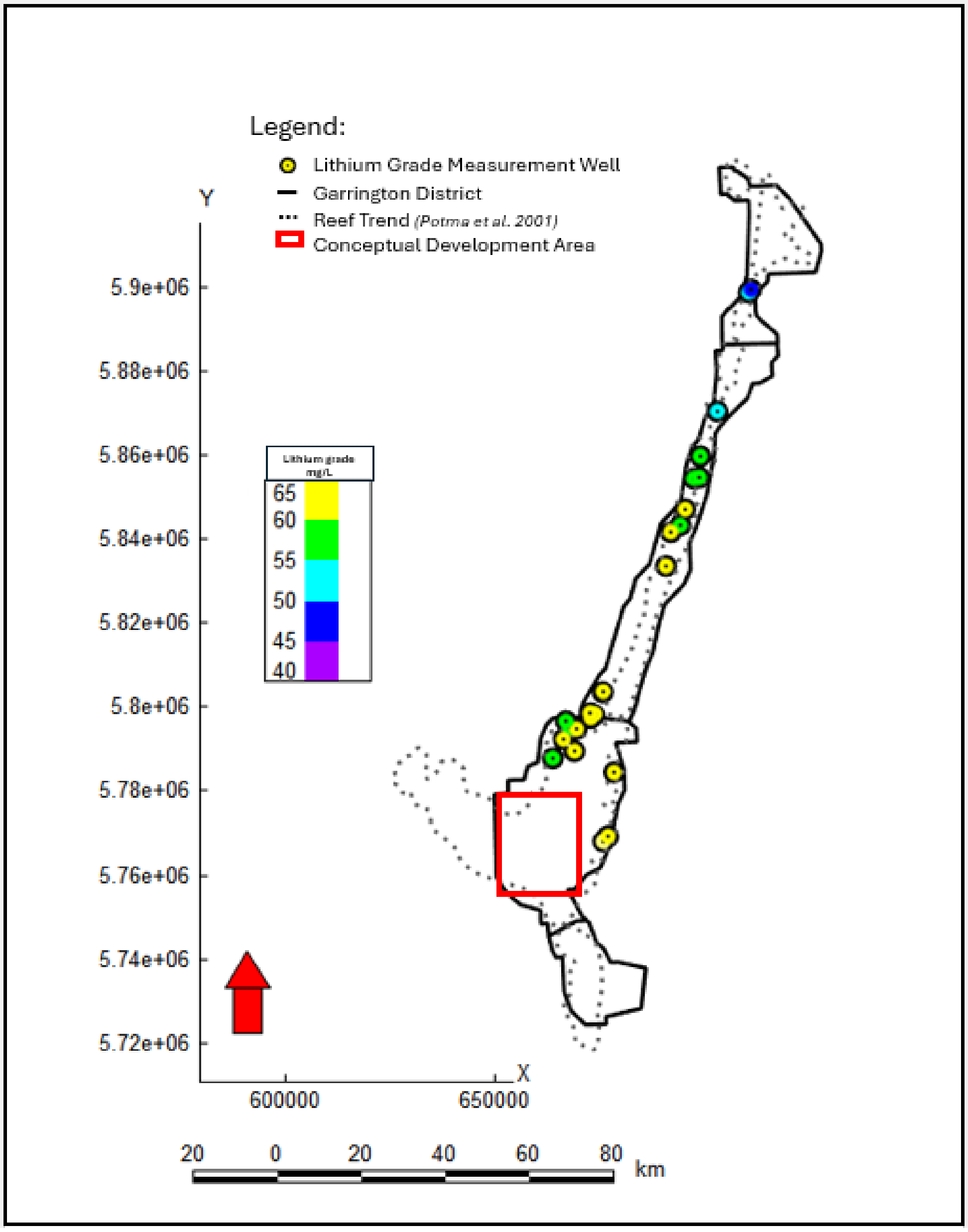

Figure 34: Lithium Grade Measurements (mg/L) across the Garrington District

14.3.3. Grade and Mineral Equivalent

Lithium concentration is expressed as a mass concentration (mg/L), as measured in the laboratory analyses. The concentration converts to mineral tonnage of elemental lithium using the brine volume multiplied by mass concentration. The tonnage of elemental lithium can be converted into various mineral equivalent forms using scaling factors based on the molar ratio, which is the proportion of lithium in the mineral forms relative to their total molecular weights. For example, elemental lithium tonnage is converted to the industry standard value of lithium carbonate equivalent using a conversion factor of 5.323. This factor is derived using a molar ratio of 0.188, which represents the proportion of lithium in lithium carbonate by molecular weight.

14.3.4. Reasonable Prospect for Eventual Economic Extraction

Market Supply & Demand

Global lithium demand is expected to increase by 132% by 2030 due to increased battery pack sizes and electric vehicle sales, and the compound annual growth rate in global lithium demand is projected to be 10% from 2025 to 2040 (Benchmark Mineral Intelligence, 2025). North America is expected to face an expanding market deficit as domestic supply growth will not keep pace with growing demand. Oilfield and geothermal brines, supported by advances in DLE technology, will contribute meaningfully to the overall supply.

Lithium Pricing

Sproule's long-term price forecast for lithium reflects a modest undersupply towards the end of the decade primarily as a result of the forecast growth in demand for electric vehicles and energy storage system batteries will outpace the anticipated lithium supply. For 2030 and beyond, the forecasted price is $28,000 USD/tonne LCE (Sproule Associates Limited, 2023).

Conceptual Development Area

E3 has defined a Conceptual Development Area (Figure 35), within which the reservoir water will be pumped to the surface from a drilled production well as produced brine. Brine will be transported via pipeline to a central processing facility where it will be processed at the surface to remove the lithium, leveraging DLE (direct lithium extraction) technology. The lithium-depleted brine will be injected into the reservoir using injection wells for pressure support and to maintain the reservoir voidage replacement ratio (VRR) of 1.0. The Conceptual Development Area location was selected within the Garrington District by virtue of lateral distance from existing or historical hydrocarbon operations and being within a single identified pressure regime. It is anticipated that the Garrington District overall could be developed in three to four phases, based on the identified pressure regimes.

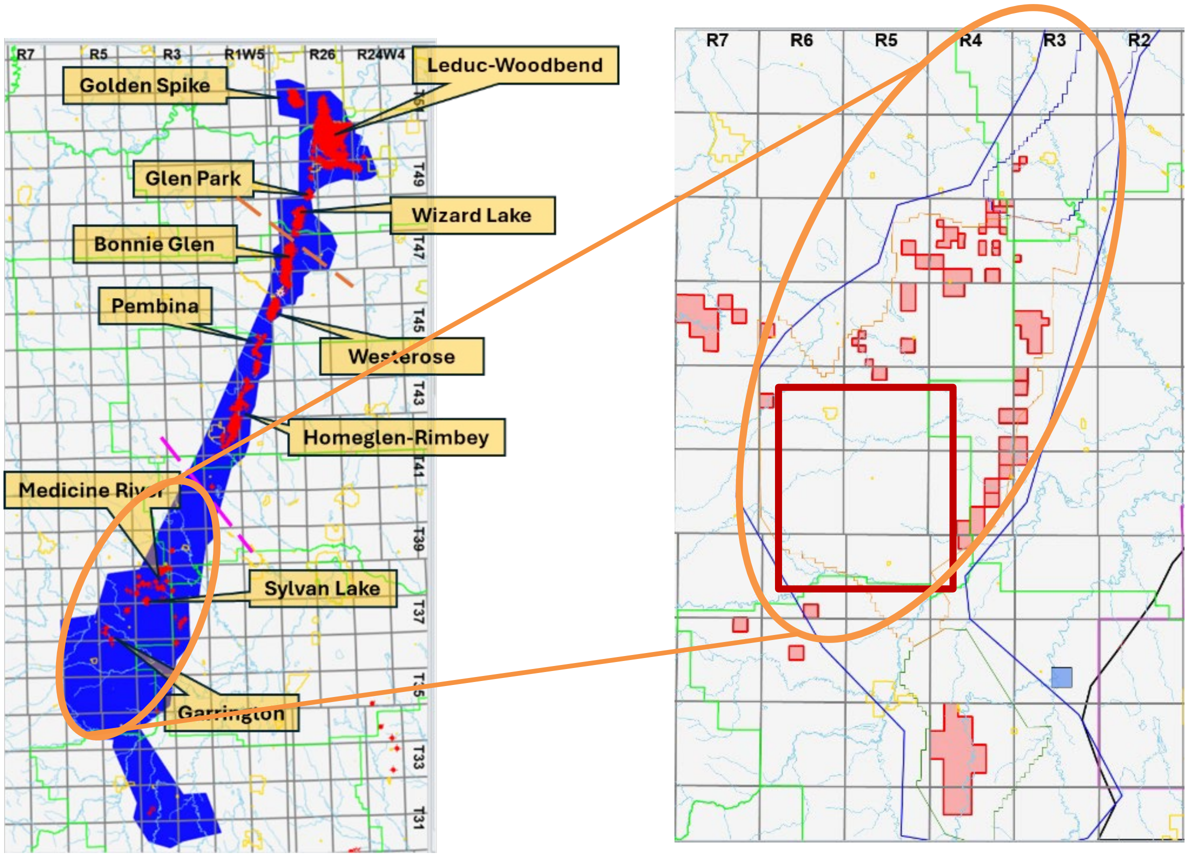

Figure 35: Conceptual Development Area with in South Garrington

Brine Flow Capability

A sector model was extracted from the Garrington District static geological model, at roughly the midpoint of the Conceptual Development Area, to model the brine flow capability of the resource within that area. The model contains the rock and fluid characteristics described above that were utilized in the resource estimation. The dynamic model leverages the porosity-permeability relationship (Figure 31). The resulting brine flow rate of 1,450 m^3/d supports that the conceptual development area is a reasonable prospect for eventual economic extraction.

Dynamic Model Calibration

The dynamic model was calibrated by conducting a material balance history match of the offsetting Medicine River Field. The Medicine River Field was selected based on data availability (fluid data, historical pressure data, and production data), as well as being primarily an oil field which is a closer analogue for brine than a gas or gas-condensate field.

Material Balance History Match

A material balance history match was conducted for the Medicine River Field, utilizing PVT data matched to an equation of state and relative permeability data from the closest offset pools (Middle Garrington). The field has ~100 pressure measurements over 40 years of production history, which were corrected to datum at 2,150 m subsea.

The material balance cases were run with and without aquifers, and with sensitivities on aquifer input properties (permeability, size, thickness, and compressibility) and the selected base case results are shown in Figure 36. Late time pressure response indicates that disposal and injection volumes are supporting the nearby Sylvan Lake and Garrington pools, whose VRR is much greater than 1 (Table 10). This supports that the underlying aquifer is regionally connected.

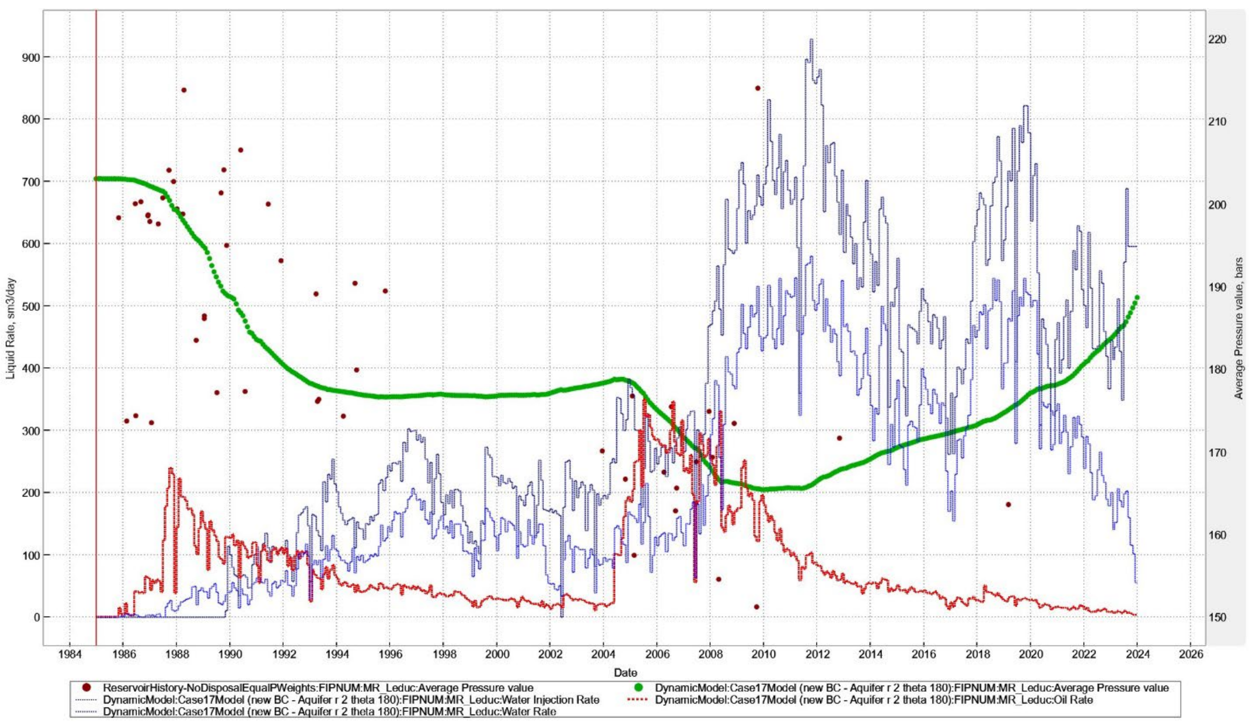

Figure 36: Medicine River History Match Results

Table 10: South Garrington Voidage Replacement Ratios

Pool	VRR
Medicine River	2.36
Sylvan Lake	0
Garrington	0.13

Sector Model Simulations

The sector model used results from the Medicine River material balance to set initial conditions for model equilibrium. A 5-spot well network pattern was selected, with the production well in the middle and four ¼ injectors in the corners (Figure 37).

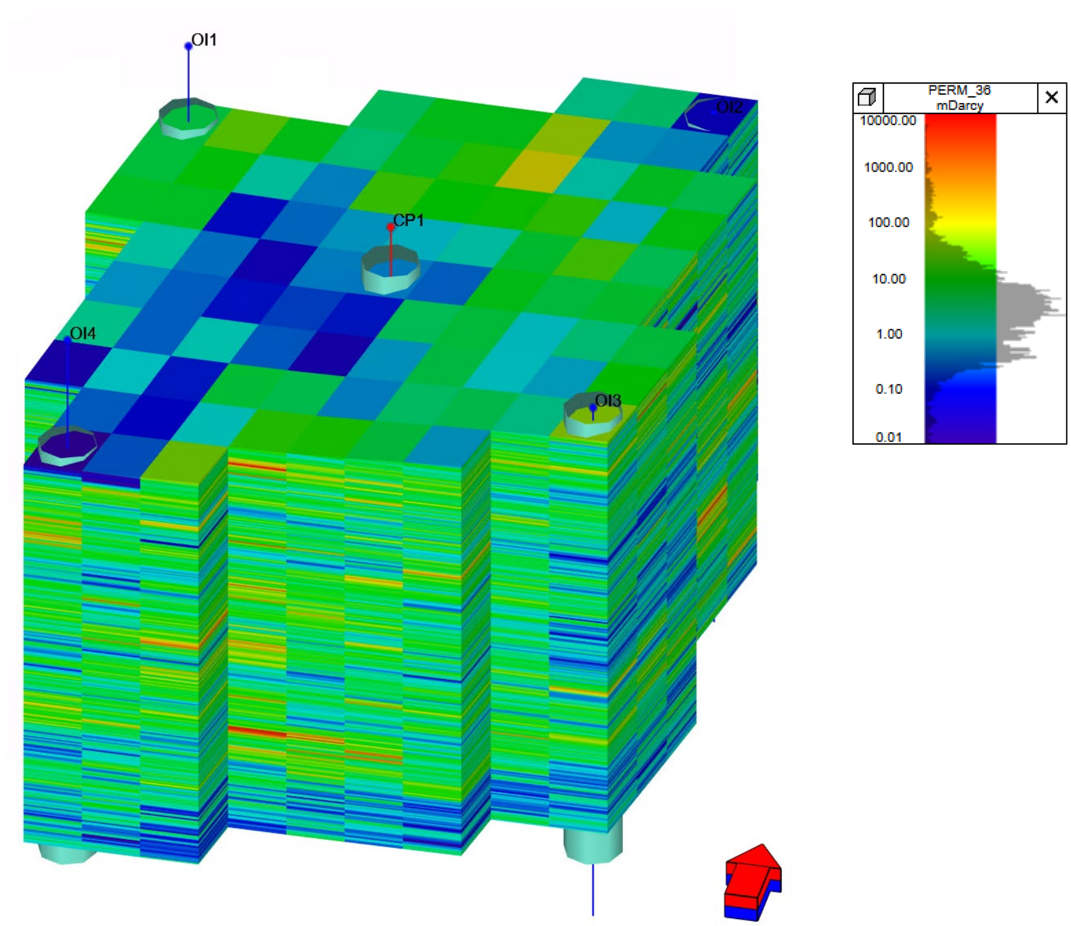

Figure 37: Conceptual Development Area Sector Model for Simulation

Production and injection rates were stable at 1,450 m^3/d for 50 years of project life, with limited breakthrough of reinjected brine (Figure 38). Additional sensitivities were run to evaluate the ultimate deliverability of the reservoir under various operating conditions and supported that the reservoir has a reasonable prospect for eventual economic extraction.

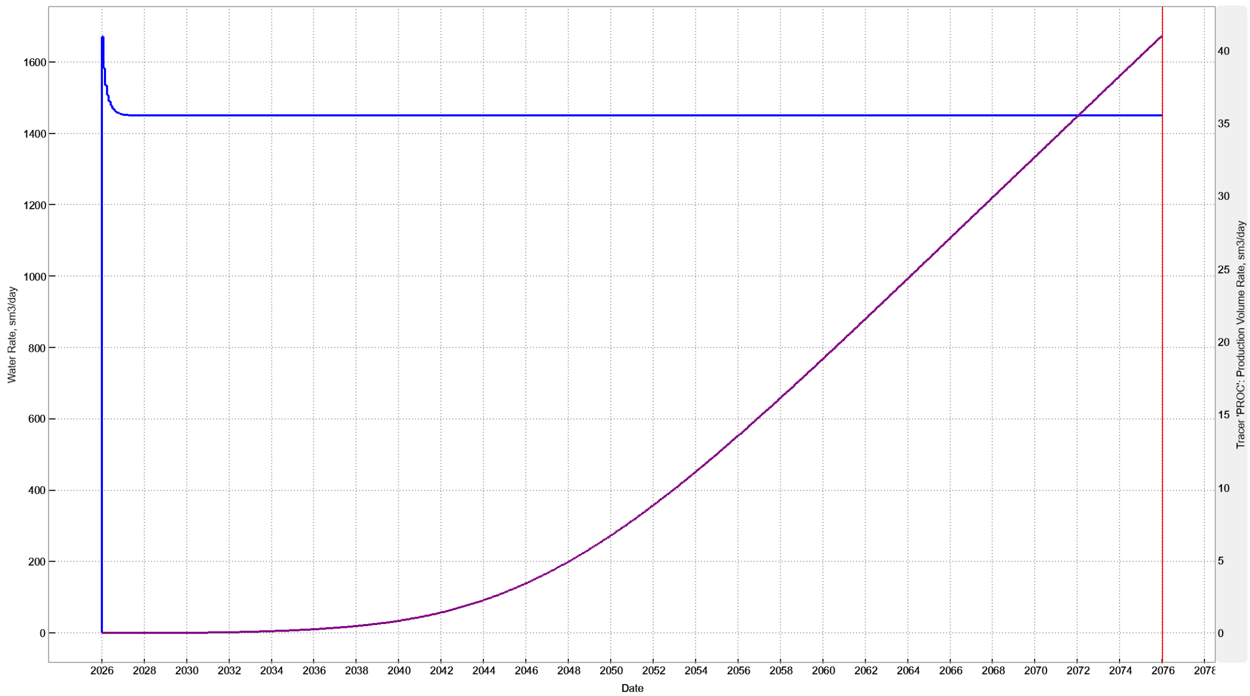

Figure 38: Simulation Base Case for Conceptual Development Area

To produce lithium, the reservoir water will be pumped to the surface from a drilled production well as produced brine. Produced brine will be transported via pipeline to a central processing facility where it will be processed at the surface to remove the lithium, leveraging DLE (direct lithium extraction) technology. The lithium-depleted brine will be injected back into the reservoir using injection wells for pressure support and to maintain the reservoir voidage replacement ratio (VRR).

E3 completed preliminary reservoir simulations based on the static model described above, and leveraging the P50 K90 permeability from Figure 31. The resulting flow rates support that the Conceptual Development Area, which is away from all existing hydrocarbon pools, is a reasonable prospect for eventual economic extraction.

14.4. Estimate Criteria for Brine Resource Volume and Lithium Resource Volume

The resource estimate methodology leverages the three-dimensional geological model across the resource area, accounting for spatial variation. Connected geobodies at 2% and 6% porosity cut-offs were evaluated across all realizations. These connected geobodies are interpreted to represent continuous reservoir facies that are capable to support economic extraction. Additionally, E3 has accounted for the presence of hydrocarbons in the reservoir.

14.4.1. Inferred, Indicated, and Measured Resource Criteria

E3 has sufficient confidence that the variability in lithium grade across the Garrington District is low within the sampled reservoir and that the more significant factor that will influence the Resource volume is porosity distribution, which is related to the lateral continuity and permeability of the reservoir and hence producibility of the resource. As previously discussed, the connectivity of porosity in the 3D geomodel can be quantitatively analyzed in the geomodel as geobodies.

Inferred Resource Criteria

Based on the revised porosity permeability relationship presented in Figure 31, it is observed that permeability values at reservoir core porosities of 2% or greater range from 0.01 to 1000 mD with a regression fit of approximately 0.05 mD. For reservoir permeability >0.05 mD the QP's have 1) reasonable confidence that this rock volume has permeability that directly supports economic extraction and 2) reasonable confidence that this rock volume has been adequately sampled and assessed via the information compiled to date by E3. We note that there are measurements less than 0.05 mD at this porosity but a large number exceed this threshold and therefore the QP's have reasonable confidence that the rock volume represented in the 3D geomodel with porosity of at least 2% has permeability of at least 0.05 mD, across all geobodies.

For these reasons, the reservoir brine volume from 2% and greater porosity in all geobodies were utilized for the Inferred Resource estimate.

Indicated Resource Criteria

Based on the revised porosity permeability relationship presented in Figure 31, it is observed that permeability values at reservoir core porosities of 2% or greater range from 0.01 to 1000 mD with a regression fit of approximately 0.05 mD. For reservoir permeability >0.05 mD the QP's have 1) moderate confidence that this rock volume has permeability that directly supports economic extraction and 2) moderate confidence that this rock volume has been adequately sampled and assessed via the information compiled to date by E3. We note that there are measurements less than 0.05 mD at this porosity but a large number exceed this threshold and therefore the QP's have moderate confidence that the rock volume represented in the 3D geomodel with porosity of at least 2% has permeability of at least 0.05 mD, across connected geobodies.

For these reasons, the reservoir brine volume from 2% and greater porosity in a single connected geobody containing at least one measurement of lithium grade were utilized for the Indicated Resource estimate outside of the Conceptual Development Area. Within the Conceptual Development Area, the Indicated Resource estimate is the reservoir brine volume from reservoir containing between 2% and 6% porosity, in a single connected geobody containing at least one measurement of lithium grade.

Measured Resource Criteria

Based on the revised porosity permeability relationship presented in, it is observed that permeability values at reservoir core porosities of 6% or greater range from 0.05 to 1000 mD with a regression fit of approximately 1 mD. For reservoir permeability >1 mD the QP's have 1) high confidence that this rock volume has permeability that directly supports economic extraction and 2) high confidence that this rock volume has been adequately sampled and assessed via the information compiled to date by E3. We note that there are measurements less than 1 mD at this porosity but a large number exceed this threshold and therefore the QP's have reasonable confidence that the rock volume represented in the 3D geomodel with porosity of at least 6% has permeability of at least 1 mD, across connected geobodies.

For these reasons, the reservoir brine volume from 6% and greater porosity within a single connected geobody containing a lithium concentration measurement and contained within the Conceptual Development Area were utilized for the Measured Resource estimate.

14.5. Resource Estimate Volumes

The following methodology was used in the resource estimate:

- Export the total connected net brine volume from 50 realizations of the geological model, and calculate the P50 value for areas greater than 2% porosity cut-off
- Calculate the OLIP [tonnes Li] (Net Lithium Volume = Net Brine Volume [m^3] x 1000 [L/m^3]) x P50 Li concentration [mg/L]) / one billion [mg/tonne])
- Calculate the OLIP [tonnes LCE] = (OLIP Li tonnes x 5.323)

A summary of the Garrington District total, Measured, Indicated, and Inferred Resource volumes in provided in .

Table 11: Garrington District Measured, Indicated, and Inferred Resource Estimates

Resource Estimate								
			E3 Licences			E3 Licences + Unleased Freehold		
Confidence Category	Area	Lithium Grade (mg/L)	Brine Volume (m^3)	OLIP (t Li)	OLIP (t LCE)	Brine Volume (m^3)	OLIP (t Li)	OLIP (t LCE)
Measured	North	-	-	-	-	-	-	-
	Middle	-	-	-	-	-	-	-
	South	55	315,000,000	17,000	92,000	560,000,000	30,000	163,000
	Harmattan	-	-	-	-	-	-	-
	Total	*55*	*315,000,000*	*17,000*	*92,000*	*560,000,000*	*30,000*	*163,000*
Indicated	North	45	1,455,000,000	65,000	348,000	2,920,000,000	131,000	699,000
	Middle	55	3,360,000,000	184,000	983,000	6,630,000,000	364,000	1,941,000
	South	55	5,550,000,000	305,000	1,624,000	7,455,000,000	410,000	2,182,000
	Harmattan	-	-	-	-	-	-	-
	Total	*54*	*10,365,000,000*	*554,000*	*2,948,000*	*17,005,000,000*	*905,000*	*4,817,000*
Total M&I	**ALL**	**54**	**10,680,000,000**	**571,000**	**3,040,000**	**17,565,000,000**	**935,000**	**5,000,000,000**
Inferred	North	45	275,000,000	12,000	65,000	380,000,000	17,000	91,000
	Middle	55	-	-		20,000,000	1,000	5,000
	South	55	-	-	-	85,000,000	4,000	24,000
	Harmattan	38	495,000,000	18,000	100,000	1,000,000,000	38,000	202,000
	Total	*42*	*770,000,000*	*30,000*	*159,000*	*1,485,000,000*	*60,000*	*319,000*

Notes to Accompany Brine Resource Estimate Table:

1. Brine Resources are reported using the 2014 CIM Definition Standards.
2. Brine Resources are not brine reserves and do not have demonstrated economic viability.
3. E3 Licenses include leased Mineral Leases from the Crown. These have been summed with the unleased Freehold mineral rights for the Total Brine Resource Estimate.
4. Numbers have been rounded. Totals may not add due to rounding.

15. Mineral Reserve Estimate

This section is not relevant to this Report.

16. Mining Methods

This section is not relevant to this Report.

17. Recovery Methods

This section is not relevant to this Report.

18. Project Infrastructure

This section is not relevant to this Report.

19. Market Studies and Contracts

This section is not relevant to this Report.

20. Environmental Studies, Permitting, and Social or Community Impact

This section is not relevant to this Report.

21. Capital and Operating Costs

This section is not relevant to this Report.

22. Economic Analysis

This section is not relevant to this Report.

23. Adjacent Properties

E3's Bashaw District is adjacent to the Garrington District at its south-east boundary There are no other adjacent brine-hosted mineral properties to the Garrington District.

24. Other Relevant Data and Information

There is no other relevant data for information pertaining to this Report.

25. Interpretation and Conclusions

25.1. Reasonable Prospect for Eventual Economic Extraction

The Garrington District is a reasonable prospect for eventual economic extraction on the basis of realistically assumed and justifiable technical and economic conditions.

- The reservoir is regionally contiguous with lithium grade and reservoir properties consistent with producibility.
- Measured production and injection rates based on simulation and analogue pools indicate sufficient producibility for extraction using conventional methods.
- E3 has a DLE process that is in advanced stages of development that they are confident will be able to refine lithium at reservoir concentration thresholds at or below the average concentration in this reservoir.
- Lithium has been recognized as a “critical mineral” by Natural Resources Canada.
- Global demand for lithium is expected to exceed supply based on electric vehicle sales and battery capacity growth.

25.2. Brine Resource Estimate

Brine Resources are reported using the 2014 CIM Definition Standards.

Factors that may affect the estimates include:

- The resource estimate methodology is dependant on the assumption that the depleted brine will be reinjected into the host reservoir.
- The Brine Resource estimate used a geostatistical approach accounting for uncertainty in porosity measurements that leveraged a significant amount of publicly available data from historical petroleum exploration in the reservoir. Therefore, existing porosity, permeability, and grade measurements are still mainly concentrated in the hydrocarbon saturated portions of the reservoir.
- For the purposes of this Report, the porosity system has been treated as a single continuum of porosity, and de-weighted the fracture porosity by using the K90 core permeability measurements rather than the maximum permeability. If the exchange between matrix and fractures is delayed, this could affect the ability to extract the Brine Resource from the matrix porosity.

25.3. Brine Resource Statement

The Indicated and Measured mineral resource estimate for the Garrington District is 935,000 tonnes of elemental lithium (5,000,000 LCE tonnes), with 61% from leased Crown land and the remainder from unleased Freehold land. The Inferred mineral resource estimate for the Garrington District is 60,000 tonnes of elemental lithium (319,000 LCE tonnes), with 50% from leased Crown land and the remainder from unleased Freehold land. The mineral resource estimates are inclusive of both leased Crown and unleased Freehold leases.

25.4. Significant Risks & Uncertainties

To progress from an indicated & measured resource, to reserves, the following risks and uncertainties have been identified:

25.4.1. Technical Risks

Lithium Resource

- Existing porosity, permeability, and grade measurements are still mainly concentrated in the hydrocarbon pools within the Garrington District
- Uncertainty in the resource estimate can be further reduced by additional data acquisition

Ability to Produce

- Potential production and injection rates for full Leduc perforations are currently simulated on the basis of a material balance history match of offsetting hydrocarbon pools
- Timing and magnitude of break-through of lithium-depleted brine that is re-injected into the reservoir reaching the production wells
- Maintaining reservoir pressures to maintain flow
- Relationship of porosity to permeability is variable across the Garrington District area and the specific factors controlling variability have not been discretely represented in the model
- Processing rates for the DLE process are currently a scaled value from lab-scale testing
    - Final DLE flowsheet is still under development
    - Downstream processing of the eluate is under development

25.4.2. Regulatory Risks

- Pore space competition between Brine hosted minerals resources and Carbon capture utilization and storage interest

- Freehold land ownership for mineral permits not held by E3 will require agreements to equitably produce

26. Recommendations

E3 is progressing the resource upgrade and lithium processing in parallel as work continues to support planned commercial development. As such, the work and costs recommended below are not contingent on each other.

26.1. Resource Upgrade(s)

Characterization of the Leduc Formation geology and properties benefits from an abundance of data compiled by the oil and gas industry. To better characterize the potential brine production from this project, additional data and further refinement of existing data is required to further characterize the reservoir and upgrade the resource to a reserve. Further upgrading the resource to a reserve category requires analysis and application of Modifying Factors, such as refining well networks and evaluation of commercial DLE facility options.

Recommended activities to continue to refine the resource estimate include:

- Additional drilling / testing of existing wells
  - Additional porosity and permeability data
  - Additional analysis to compare new data to previous parameter distributions and petrophysical models
  - Complete additional flow tests over the entire reservoir thickness
- Additional grade sampling
  - Of produced water from oil and gas wells
  - Of brine samples from lithium wells
  - Of vertically segregated zones
- Complete reservoir simulations to model flow characteristics for planning of a well network production and injection scheme
  - Address variability in the porosity-permeability relationship:
    - Utilize a statistical transformation as opposed to regression to parameterize permeability from the porosity values, to represent the full range of uncertainty in the porosity-permeability relationship
  - Calibrate geological model to flow test to validate reservoir simulations
  - Determine brine production type curve(s)
  - Determine brine injection type curve(s)
  - Conduct economic analyses

- Perform special core analysis to help simulate single phase flow characteristics for injection, and to evaluate potential for breakthrough of re-injected depleted brine; this information will be used to evaluate a lithium recovery factor assuming this production scheme

E3 has communicated their intent to complete aspects of the above work to the QPs. The QPs have not independently verified the costs associated with these activities. Additional costs are estimated on an annual basis for ~3 years, until commercial development commences: drilling at $2-$6 million/year; grade sampling at $100,000/year; reservoir simulations at $50,000/year; and special core analysis at $50,000/year.

26.2. Lithium Processing

The following need confirmation through additional test work and pilot scale testing:

- Confirm the sorbent performance, kinetic and equilibrium data
- Quantify the removal efficiencies and species formed for secondary contaminants such as boron, strontium, and manganese removed in the secondary purification stage where impurities (largely calcium and magnesium) are removed via precipitation; simulate the system at lab scale
- Demonstrate feasibility of downstream processing using Leduc brine

The estimated cost associated with this work ~$8,500,000.

26.3. Pre-Feasibility Study

Completion of a Pre-Feasibility Study is the minimum prerequisite for the conversion of mineral resources to mineral reserves. CIM defines a PFS as:

> *A Pre-Feasibility Study is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors and the evaluation of any other relevant factors which are sufficient for a Qualified Person, acting reasonably, to determine if all or part of the Mineral Resource may be converted to a Mineral Reserve at the time of reporting.*

E3 has communicated their intent to complete a PFS to the QPs. The QPs have not independently verified the costs associated with these activities. The cost to develop a PFS, including pre-FEED engineering design, is estimated at $8,000,000, leading up to commercial development.

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