

# TECHNICAL REPORT ON THE ANGILAK PROPERTY, NUNAVUT, CANADA

Prepared for: ATHA ENERGY CORP.

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# 1 SUMMARY

#### 1.1 Executive Summary

Understood Mineral Resources Ltd. (UMR) was retained by ATHA Energy Corp. (ATHA or the Company) to prepare an independent technical report on the Angilak Property (the Property), located in southern Nunavut, Canada. This Technical Report has been prepared in accordance with the Canadian Securities Administration's (CSA's) National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) and guidelines for technical reporting from Canadian Institute of Mining, Metallurgy and Petroleum (CIM) "Best Practices and Reporting Guidelines".

The report includes a summary of exploration activities conducted on the Property to date and discloses potential uranium quantity and grade for the Lac 50 Uranium Deposit (Lac 50, Lac 50 Deposit, or the Deposit), expressed as ranges, as a target for further exploration. The stated potential quantity and grade is conceptual in nature, and there has not been sufficient exploration to define a mineral resource, and it is uncertain if further exploration will result in the target being delineated as a mineral resource. The effective date of this report is November 25, 2024, coincident with the final signoff of the exploration target model.

ATHA is a Canadian exploration company, engaged in the acquisition, evaluation, and development of uranium assets. ATHA is listed on the Toronto Stock Exchange Venture (symbol SASK), on the OTCQB Best Markets (symbol SASKF), and on the Frankfurt Stock Exchange (symbol X5U.F).

#### 1.2 Technical Summary

#### 1.2.1 Property Description and Location

The Property, which hosts Lac 50 Deposit, is located 350 kilometres west of Kangiqliniq (Rankin Inlet) and 225 kilometres southwest of Baker Lake in the Kivalliq Region of Nunavut. The Property is bound between Latitudes 62° 14' and 62° 48' North and Longitudes 98° 21' and 99° 44' West, (North American Datum 1983 (NAD83), Universal Transverse Mercator (UTM) Zone 14 coordinates: 6901449m N and 6960000m N and 463830m E to 533463m E) and is within the 1:50:000 National Topographic (NTS) map sheets 065 J/05, J/06, J/07, J/09, J/10, J/11, J/12, J/14 and J/15. The Property comprises 112 Crown issued mineral claims and one mining lease, as well as an Inuit Owned Land (IOL) parcel (RI30-001) for a total area of 157,440 hectares. Latitude Uranium Inc. (LUR), and subsequently ATHA, has acquired the right to conduct exploration work on the IOL parcel under a Mineral Exploration Agreement (MEA) with Nunavut Tunngavik Inc. (NTI). Land use permits enabling exploration work to be conducted on the Property have been issued, amended and renewed by the Kivalliq Inuit Association (KIA) for parts of the Property covering the IOL and by CIRNAC for the Crown Lands.

1.2.2 Accessibility, Climate, Local Resources, Infrastructure, and Physiography

Access to the Property is reliant on helicopters and fixed wing aircrafts. There is a 250-metre-long gravel airstrip located 1.5 kilometres west of the Nutaaq drilling camp. Exploration at the Property is typically conducted between the months of February and October. Local access to and around the Project site is by either helicopter, float plane or wheeled fixed wing aircraft such as a Single Otter. Due to the commercial-grade airport and the relatively close distance, Baker Lake and Rankin Inlet are the logical mobilization points for all supplies and people. All required infrastructure and supplies for exploration can be brought in each field season by air or via an over-land haulage during the winter season. The Property is situated in the "barren lands," a large

region of almost flat, treeless tundra characterized by poor bedrock exposure and extensive swampy areas with abundant small, shallow lakes. Elevation at the Property ranges from 150 to 250 metres above sea level (asl). Locally maximum relief ranges from 30 to 75 metres but is more commonly less than 20 metres. Glacial deposits in the area are extensive thus limiting rock exposure to less than a few percent of the total Property area.

The climate is best described as continental-arctic with short cool summers and long cold winters with minimal precipitation. Average summer high temperatures can reach up to 20°C, while average winter temperatures are in the order of -30°C to -35°C. Snow is generally on the ground until the first week of June and ice does not leave the mid-sized lakes until the third week of June. Nearby Yathkyed Lake has ice cover usually until early or mid-July. Smaller lakes freeze over around the end of September, therefore, most of the year the Angilak Property is covered with snow, except between June and the end of September. Permafrost is present from one metre to unknown depths in mid-summer. The thawed active layer is thick enough by mid to end June to allow till sampling and induced polarization surveys. Diamond drilling to 200 metre depths can be accomplished without salt or propane based upon experience.

#### 1.2.3 History

Airborne radiometric surveys, geologic mapping and lake sediment sampling for uranium in the Project area began in 1970 but halted shortly after. Between 1976 and 1982, various operators completed regional and targeted exploration work including soil sampling, geophysical surveys, and drilling. As historical property boundaries are not the same as the current property boundaries, some of the historical work completed during this timeframe may fall outside of the current margins of the Property. The Lac 50 Deposit was discovered and partially delineated by Pan Ocean (later named Aberford Resources) during this period, but there is very little documentation or data that exists for the work completed. The long section of the Lac 50 Deposit provided by Miller et al. (1986) shows at least 58 drillholes over a strike length of 1 kilometre down to a depth of close to 250 metres below surface. Exploration for uranium ceased abruptly at Lac 50 and the surrounding area when Pan Ocean divested its uranium projects in 1982.

In 1993, NTI was formed to manage land and implement the Nunavut Land Claims Agreement (NLCA), which itself was established in 1993. Along with the formation of the territory of Nunavut in 1999, came the establishment of 37,000 km<sup>2</sup> of subsurface land parcels of Inuit Owned Land, including IOL Parcel RI30-001, which is situated over the historic Lac 50 Uranium Deposit. In 2007, NTI announced its new pro-uranium policy and expressed interest in forming a partnership with exploration companies to conduct uranium exploration on IOL parcels in Nunavut. That same year, NTI and Kaminak Gold Corporation (Kaminak) signed a landmark uranium partnership to explore IOL parcel RI30-001 and Kaminak's surrounding federal mineral claims (Dufresne, 2008). This led to the creation of Kivalliq Energy Corporation (later renamed as ValOre Metals Corp in 2018) as a spin out company of Kaminak in 2008, formed with the express purpose to explore and advance the Angilak Project.

In 2007, Kaminak commissioned GeoVector Management Inc. (GeoVector) to conduct a detailed compilation followed by a reconnaissance field program that included geological mapping, prospecting, and field verification of historical work. Between 2008 and 2012, exploration work on the Property included ground geophysical surveys, airborne geophysical surveys, diamond drilling, reverse circulation (RC) drilling, soil sampling, rock sampling, geological mapping, and prospecting. The diamond and RC drilling further delineated the Lac 50 Deposit, as well as tested regional exploration targets.

ValOre continued exploration on the Property from 2013 to 2016, with rock sampling, soil sampling, geophysical surveys, trenching and channel sampling, limited RC and diamond drilling, and heavy mineral sampling. No exploration work was completed on the Property from 2017 to 2021, but in 2022, ValOre conducted geophysical surveys, a soil sampling program, RC drilling and diamond drilling.

On June 20, 2023, Labrador Uranium Inc. announced the acquisition of the Property from ValOre, and subsequently changed their company name to Latitude Uranium Inc. (which is previously defined as LUR in this report). Exploration work completed on the Property by LUR included a high resolution radiometric and aeromagnetic airborne survey during the spring of 2023 and diamond drilling completed in the summer of 2023. The diamond drilling consisted of 18 diamond drill holes and successfully increased the extent of known mineralization at Lac 50 and identified new mineralization horizons.

ATHA acquired LUR in April 2024 including 100% of all assets owned by LUR and its wholly owned subsidiary 5833 Nunavut Ltd. New claims staked in 2024 by ATHA are currently registered under ATHA Energy (NU) Corp, another wholly owned subsidiary of ATHA. In addition, the Mineral Exploration Agreement with NTI for RI30-001 has been assigned from 5833 Nunavut Ltd. to ATHA Energy (NU) Corp.

#### 1.2.4 Geology and Mineralization

The Angilak Property is located within the Western Churchill Province, a large Archean craton that experienced significant crustal shortening and uplift during the Proterozoic, where the subsequent gravitational collapse led to the deposition of several rift basins, including the Baker Lake Basin. Two major structural corridors surround the Property: The Snowbird Tectonic Zone to the northwest, and the Tyrrell Shear Zone to the southeast. The structural corridors formed because of the assembly of the Churchill Province and were later reactivated by tectonic activity in the Proterozoic. The Archean basement rocks underlying the Property consist of tonalite-granodiorite gneisses and granitoids, as well as the metasedimentary and metavolcanic greenstones of the Henik Group. These are unconformably overlain by the Angikuni and Yathkyed sub-basins (Baker Lake Group). The Lac 50 Uranium Deposit is located adjacent to the northeastern margin of the Angikuni sub-basin and is hosted in Archean metasedimentary and metavolcanic rocks of the Henik Group. Mineralization at the Lac 50 Deposit is structurally controlled and bears similarities to Beaverlodge-type vein deposits.

## 1.2.5 Exploration

In March 2024, ATHA completed the acquisition of 100% of the issued and outstanding common shares of LUR, which became a wholly owned subsidiary of ATHA. The transaction included the Angilak Property, which hosts the Lac 50 Uranium Deposit with an inferred historical mineral resource estimate of 2.8 million tons with an average grade of 0.69%  $U_3O_8$  containing 43.3 million lbs of  $U_3O_8$ .

A diamond drill program, an MMT airborne geophysical survey, bedrock mapping and soil sampling all took place as part of the 2024 summer field program between the end of May and mid September.

UMR provided ranges for potential uranium quantity and grade as a target for further exploration on the Lac 50 Deposit using the available verified diamond drill hole data, including the 2024 drill program results (Table 1-1). The ranges were derived from a block model approach using interpreted vein wireframes, drill core assays, grade interpolation via Ordinary Kriging, and applied uncertainty bandwidths. The stated potential quantity and grade is conceptual in nature, and there has not been sufficient exploration to define a mineral resource, and it is uncertain if further exploration will result in the target being delineated as a mineral resource.

Lac 50 Exploration Target							
Cutoff	Tonnes	Grade	Metal Content				
(% U <sub>3</sub> U <sub>8</sub> )	(ML)	(% U <sub>3</sub> U <sub>8</sub> )	(M LDS U <sub>3</sub> U <sub>8</sub> )				
0.1	7.4 - 9.3	0.37 - 0.48	60.8 - 98.2				

Table 1-1: Lac 50 Tabulated Exploration Target Model Ranges

Notes:

- 1. The stated potential quantity and grade is conceptual in nature, and there has not been sufficient exploration to define a mineral resource, and it is uncertain if further exploration will result in the target being delineated as a mineral resource.
- 2. The ranges were derived from a block model approach using interpreted vein wireframes, drill core assays, grade interpolation via Ordinary Kriging, and applied uncertainty bandwidths.
- 3. An assumed cut-off of  $0.1\% U_3O_8$  was used for the tabulation of the exploration target model.

#### 1.2.6 Drilling

A 10,052-metre helicopter-supported diamond drill program took place between June 4 and August 22, 2024. A total of twenty-five drillholes were completed, not including one lost drillhole. This drilling program had several key objectives: to expand the footprint of known mineralized zones within the Lac 50 Trend (Western Extension, Eastern Extension, Main Zone, J4, and Ray zones) by testing along strike, down-dip, and down-plunge. Additionally, it aimed to investigate historical data by testing previously identified VLF anomalies and mineralized showings in under-drilled areas identified as the Lac 48, Lac 52 and Lac 54 Trends (which include the Blaze, Hot, Pulse, and Mushroom Lake zones).

#### 1.2.7 Data Verification

LUR was provided the geologic data and information for the Property after acquisition (2023) as Microsoft Excel spreadsheets, Microsoft Access databases, and ESRI shapefiles. This data was imported into MXDeposit<sup>™</sup>, a database management system made by Seequent, by LUR, and ArcGIS software was used to check for geospatial errors. For the 2023 drilling program, LUR logged the drilling data into Excel files and then transferred the data into MXDeposit<sup>™</sup>. Drilling data collected by ATHA during the 2024 season was entered directly into MXDeposit<sup>™</sup>.

ATHA personnel completed an internal audit of the Angilak Project drillhole database by comparing approximately 10% of the drilling data to the original drill logs, assay certificates, and collar coordinates. Original assay certificates and geological logs were used to check the MXDeposit<sup>™</sup> database after import from previous drilling. Minor typos and column mismatches were found and rectified, but overall, the drillhole database was found to be satisfactory. However, the reverse circulation drilling assay results were deemed to be imprecise relative to the validated core drilling results, thus the RC drilling was not considered in the exploration target model. UMR reviewed the audit work completed by ATHA and considers the results, methods, and conclusions to be accurate and appropriate. UMR further validated the diamond drilling database via the following digital queries:

- Header table: searched for incorrect or duplicate collar coordinates and duplicate hole IDs.
- Survey table: searched for duplicate entries, survey points past the specified maximum depth in the collar table, and abnormal dips and azimuths.

- Lithology, alteration, and structure tables: searched for duplicate entries, intervals past the specified maximum depth in the collar table, overlapping intervals, negative lengths, missing collar data, missing intervals, and incorrect logging codes.
- Geochemical, density, and assay tables: searched for duplicate entries, sample intervals past the specified maximum depth, negative lengths, overlapping intervals, sampling lengths exceeding tolerance levels, missing collar data, missing intervals, and duplicated sample IDs.

No significant issues were identified.

During UMR's two-day site visit, UMR reviewed ongoing, recent, and historic core from the Deposit, confirmed the location of three collar locations with a handheld GPS, verified the geological setting, and reviewed drilling, logging, sampling, analytical and QA/QC procedures. A comparison of the drill logs and assay results with the laid-out drill core showed that the information recorded in the drill database matched well with the drill core. As part of the core review, UMR verified the occurrences of mineralization visually and by way of a hand-held scintillometer.

In UMR's opinion, the Angilak Project exploration data are free of any material or systematic errors and are considered well validated and of sufficient quality for use in this Technical Report. ATHA and its predecessors had a robust QA/QC process in place for the data collected on the Angilak Property.

1.2.8 Mineral Processing and Metallurgical Testing

In June 2012, the Saskatchewan Research Council (SRC) commenced a metallurgical testing program that built on first pass work completed in 2010. The initial 2010 results indicated alkaline leaching as the most effective extraction process for the Lac 50 Deposit uranium mineralization. The objective of the 2012 program was to investigate uranium alkaline leaching optimization and perform a preliminary evaluation of the purity levels of a final yellowcake product. The SRC aggregated a master composite sample weighing approximately 60 kilograms by blending and homogenizing 166 quarter-split and half-split pulp reject samples from 51 core holes. The sampled 2010 and 2011 core holes represent 3.2 km of strike length of uranium mineralization along the Lac 50 Main Zone, Western Extension and Eastern Extension. A head grade sample from the 2012 composite assayed 0.737 % U, 0.217% Mo, 0.667% Cu, 0.221% Zn, 0.231% Pb and 26.7 g/t Ag. Optimized results from alkaline leaching indicate that 94.1% of uranium can be extracted in 48 hours and 95.9% of the uranium extracted in 72 hours with a final vellowcake product that contained 71.9% uranium. It is encouraging at this early stage that the assayed impurities in the yellowcake product are below the maximum allowable concentration limits without penalty for uranium ore concentrate specifications. Additional metallurgical work is warranted.

#### 1.2.9 Historical Mineral Resource Estimate

An initial maiden Inferred Mineral Resource Estimate (MRE) was completed by APEX Geoscience (APEX) for Kivalliq Energy in 2010 and subsequently updated in 2012 and 2013 based on additional drilling completed over that period. The most recent mineral resource estimate (MRE) was completed in 2013 for the Angilak Property by Robert Sim, P.Geo., with the assistance of Dr. Bruce Davis, FAusIMM, and published in Dufresne et al., (2013).

The construction and estimation process for the historical 2013 MRE generally followed the 2014 and 2019 CIM standards and guidelines and uses the current CIM classification framework, even though it was constructed in 2013. However, there are likely changes required to the financial

information utilized in 2013 to evaluate reasonable prospects for eventual economic extraction (RPEEE), and there was not enough information provided by Mr. Sim and Mr. Davis to determine whether the historical 2013 MRE would change applying constraints such as an open pit and in particular constraining underground shapes to bracket the underground portion of the historical MRE. For these reasons, ATHA considers the 2013 MRE to be a historical MRE and does not treat it or any part of it as a current MRE. The QP of this report has not done sufficient work to classify the historical estimate as current mineral resources.

The 2013 historical MRE for the Lac 50 Deposit was generated from 256 drillholes and 6,173 samples with a total core length of 3,188 metres, all of which were competed by Kivalliq Energy from 2009 to 2012. The J4/Ray resource block model was generated from a total of 79 drillholes and 1,363 samples with a total core length of 725 metres, with all holes completed between 2009 to 2012. The details of the estimation methods and parameters are discussed in Section 6.11.2 of this report.

Table 1-2 provides the historical inferred MRE for the Lac 50 Deposit, reported at a cut-off grade of 0.2%  $U_3O_8$  (Dufresne et al., 2013).

	Tonnos	Grado	Grado	Grada	Grado	Metal Content			
Zone	(kt)	U <sub>3</sub> O <sub>8</sub> %	Ag g/t	Mo%	Cu%	U₃O8 (MIbs)	Ag (koz)	Mo (Mlbs)	Cu (MIbs)
Lac 50 Main	892	0.83	13.5	0.23	0.17	16.2	387	4.5	3.3
Lac 50 W Ext.	709	0.51	17.5	0.04	0.33	7.9	399	0.7	5.2
Lac 50 E Ext.	304	0.57	20.1	0.17	0.28	3.8	197	1.1	1.9
J4 Upper	592	0.70	23.3	0.15	0.28	9.1	443	1.9	3.7
J4 Lower	258	0.94	45.8	0.28	0.24	5.3	379	1.6	1.4
Ray	76	0.53	29.9	0.37	0.10	0.9	73	0.6	0.2
Total	2,831	0.69	20.6	0.17	0.25	43.3	1878	10.4	15.6

Table 1-2: Historic	cal 2013 Infe	erred MRE Summary by	/ Zone at a 0.2% l	U₃O <sub>8</sub> Cut-Off	(After Dufresne et al., 2	2013).

The historical mineral resource summarized above has been included simply to demonstrate the developmental history of the Lac 50 Deposit and the Angilak Property. ATHA and the Author consider the 2013 MRE to be relevant for the further development of the Project; however, ATHA and the Author are not treating the historical estimate as a current mineral resource.

## 1.2.10 Mineral Resource Estimations

There is no current resource estimate on the Property.

# 1.2.11 Adjacent Properties

Other operators in the area with a focus on uranium include Orano Canada (previously Areva Canada), which completed an initial feasibility study of the Kiggavik Uranium Deposit and submitted a Draft Environmental Assessment Study to the Nunavut Impact Review Board in 2007 (Areva, 2008). The Kiggavik Deposit is located approximately 90 kilometres west of Baker Lake and 210 kilometers north of the Angilak Project. Following public hearings in March 2015, the Nunavut Impact Review Board (NIRB) recommended Kiggavik not be approved at that time. NIRB stated it does not intend for the project not to proceed at any time, but that it should be resubmitted when a project start date and development schedule can be provided. The federal government supported NIRBs decision (NIRB website). Orano stills retains ownership of the mining lease

covering the Kiggavik deposit. The Project is owned jointly by Orano (66.2%), Denison Mines (16.9%) and Uranium Energy Corp (16.9%). The information above is sourced from Orano's 2022 Activities Report.

In 2022, Forum Energy Metals Corp. (Forum) expanded their land position around the Orano leases to encompass 95,518 ha of prospective land (Forum's website). Forum's Nunavut Uranium Project (located approximately 195 kilometres north of the Angilak Project ) covers two high-grade unconformity style uranium deposits – Tatiggaq and Qavvik and the Ayra uranium showing (Forum's website).

The Author of this report has not verified the information pertaining to adjacent properties in the area, as such the information is not necessarily indicative of the mineralization on the Angilak Property.

#### 1.2.12 Interpretation and Conclusions

The Angilak Project is host to the Lac 50 Uranium Deposit with a historical mineral resource estimate of 43.3M lbs at an average grade of  $0.69\% U_3O_8$ . ATHA's 2024 Angilak Exploration Program built upon the work completed by its predecessors, including the completion of twenty-five diamond drill holes between early June and late August for a total of ~10,051 metres. The drill program was focused on the expansion of the historic footprint of mineralization along the Lac 50 Trend and the identification of uranium mineralization within new parallel mineralized trends called the Lac 48, Lac 52, and Lac 54 Trends. The Lac 48, Lac 50 (host to the historic Lac 50 mineral resource), Lac 52, and Lac 54 Trends, as well as the untested areas between the trends, remain prospective for future drill programs.

A total of twelve holes were completed in the Lac 50 Trend, targeting expansion of uranium mineralization beyond the modeled grade shells from the 2013 historic resource, for a total of 4,884 metres. All holes achieved the objective of intersecting uranium mineralization outside of the historic mineralized domains and expanding the footprint of mineralization of the known zones, along with identification of new tuff horizons.

Within the Jay4/Ray Zones, a total of four holes were completed during 2024, all successfully intersecting uranium mineralization. Notably, mineralization was intersected approximately 400 metres along strike to the west of the J4/Ray Zones.

A total of eight holes were drilled within the Western-Extension, Main Zone, and Eastern-Extension Zones, all intersecting uranium mineralization, expanding on known zones of mineralization and identifying new tuff horizons.

Thirteen holes were completed at prospective regional targets proximal to the Lac 50 Trend for a total of 5,167 metres. All holes intersected uranium mineralization, expanded on previously discovered showings, or identified prospective structures. Three prospective trends, all parallel to the Lac 50 Trend, were tested, inclusive to the Lac 48 Trend, Lac 52 Trend, and Lac 54 Trend. The 2024 drill program did not test the Dipole and Nine Iron showings, but the areas remain prospective.

UMR provided ranges for potential uranium quantity and grade as a target for further exploration on the Lac 50 Deposit using the available verified diamond drill hole data, including the 2024 drill program results (Table 1-3). The ranges were derived from a block model approach using interpreted vein wireframes, drill core assays, grade interpolation via Ordinary Kriging, and applied uncertainty bandwidths. The stated potential quantity and grade is conceptual in nature, and there has not been sufficient exploration to define a mineral resource, and it is uncertain if further exploration will result in the target being delineated as a mineral resource.

Lac 50 Exploration Target						
Cutoff	off Tonnes G	Grade	Metal Content			
(% U <sub>3</sub> U <sub>8</sub> )	(Mt)	(% U <sub>3</sub> U <sub>8</sub> )	$(MLDS U_3U_8)$			
0.1	7.4 - 9.3	0.37-0.48	60.8-98.2			

Notes:

- 1. The stated potential quantity and grade is conceptual in nature, and there has not been sufficient exploration to define a mineral resource, and it is uncertain if further exploration will result in the target being delineated as a mineral resource.
- 2. The ranges were derived from a block model approach using interpreted vein wireframes, drill core assays, grade interpolation via Ordinary Kriging, and applied uncertainty bandwidths.
- 3. An assumed cut-off of 0.1% U<sub>3</sub>O<sub>8</sub> was used for the tabulation of the exploration target model.

Surficial mapping and sampling programs were also conducted as part of the 2024 exploration program, which discovered uranium mineralization on surface beyond the extents of the Lac 50 Deposit footprint. Uranium mineralization was identified between Lac 48, Lac 50, Lac 52, and Lac 54 trends. A zone of extensive bedrock outcrop with radioactivity up to >60,000 counts per second (cps), measured with a hand-held RS-120 scintollemeter, was identified over a 3-kilometre strike length. The new discovery is located between the Mushroom Lake zone on the Lac 52 trend and the Hot zone on the Lac 54 trend and has not been drill tested.

An airborne Mobile MagnetoTellurics (MMT) geophysical survey was also completed within the Lac 50 Deposit area in 2024. ATHA is anticipating receiving geophysical interpretations in Q1 of 2025.

#### 1.2.13 Recommendations

Based on the historical exploration work discussed in this Technical Report, the 2024 exploration program completed by ATHA, the historical MRE, and 2024 Exploration Target Model, it is the opinion of the Author of this Technical Report that the Angilak Property warrants further exploration work.

Based upon the results of exploration conducted to date, the Author recommends that the following work be completed at the Angilak Property:

- 1) Mapping and geochemical sampling surveys over untested geophysical anomalies proximal to the Lac 50 Deposit identified by previous geophysical programs and the 2024 Mobile MagnetoTellurics (MobileMT) survey,
- 2) Regional scale mapping within areas of interest outside of the Lac 50 Deposit area located across the project,
- 3) A drill hole spacing study be completed to better inform drill hole spacing for potential future mineral resource classification.
- 4) Expansion and delineation drilling along the Lac 48, 50, 52 and 54 Trends to further expand mineralization immediately along strike, and at depth, and along parallel and cross-cutting mineralized structural corridors identified by previous drilling,
- 5) Exploration drilling including:

- testing of geophysical conductors proximal to the Lac 50 Deposit, including conductors along strike that could represent extensions and parallel trends prospective to host uranium mineralization.
- further drill testing at the Nine Iron, Dipole and RIB showings, and
- reconnaissance drilling of additional exploration targets outside of the Lac 50 Deposit identified by prior exploration;
- 6) Further airborne and ground geophysical surveys to help characterize, de-risk and prioritize regional targets across the Property,
- 7) Baseline environmental monitoring in support of future project evaluation studies, and
- 8) Ongoing community consultation.

Table 1-4 provides a preliminary cost estimate for the recommended work to be carried out in 2025.

Item	Cost Estimate (CDN\$M)
Mapping & Surficial Sampling	\$1.0
Geophysical Surveys (airborne & ground)	\$1.5
Drilling (10,000m) & Logistical Support	\$9.0
Baseline Environmental Monitoring	\$0.5
Community Consultation	\$0.1
TOTAL	\$12.1

Table 1-4: 2025 Cost Estimate for Recommended Work

# 2 INTRODUCTION

Understood Mineral Resources Ltd. (UMR) was retained by Atha Energy Corp. (ATHA or the Company) to prepare an independent Technical Report on the Angilak Property (the Property), located in southern Nunavut, Canada. This Technical Report has been prepared in accordance with the Canadian Securities Administration's (CSA's) National Instrument 43-101 Standards of Disclosure for Mineral Projects (NI 43-101) and guidelines for technical reporting from Canadian Institute of Mining, Metallurgy and Petroleum (CIM) "Best Practices and Reporting Guidelines".

The purpose of this report is to disclose exploration activities conducted on the Property to date as well as the recently developed exploration target model for the Lac 50 Uranium Deposit (Lac 50, Lac 50 Deposit, or the Deposit). The exploration target model represents potential uranium quantity and grade, expressed as ranges, as a target for further exploration on the Deposit. The stated potential quantity and grade is conceptual in nature, and there has not been sufficient exploration to define a mineral resource, and it is uncertain if further exploration will result in the target being delineated as a mineral resource. The effective date of this report is November 25, 2024, coincident with the final signoff of the exploration target model.

ATHA is a Canadian exploration company, primarily engaged in the acquisition, evaluation, and development of uranium properties with a view to commercial production. ATHA is listed on the Toronto Stock Exchange Venture (symbol SASK), on the OTCQB Best Markets (symbol SASKF), and on the Frankfurt Stock Exchange (symbol X5U.F).

## 2.1 Sources of Information

This Technical Report was prepared by, and in parts under the supervision of, Matt Batty, MSc, P. Geo, of UMR, who visited the Property from August 14 to 15, 2024. During Mr. Batty's site visit, he examined historic and recent drill core, confirmed collar locations, reviewed drilling, logging, sampling, analytical and QA/QC procedures, and reviewed site facilities.

By virtue of his education, membership to a recognized professional association (Association of Professional Engineers and Geoscientists of Saskatchewan), independence from ATHA, and relevant work experience, Mr. Batty is eligible to be the Qualified Person (QP) for the Project as this term is defined by National Instrument 43-101.

Drill data, geologic models, cross sections, and other geologic data were transferred to UMR as a Leapfrog Project via a data sharing platform on August 8, 2024, November 15, 2024, and November 18, 2024.

The documentation reviewed and other sources of information are listed at the end of this report in References. Government and academic research reports were prepared by QPs holding postsecondary geology, or related university degree(s), and are therefore deemed to be accurate. For those reports that were written by others, who are not QPs, the information is assumed to be reasonably accurate based on data review by the authors.

The Author carefully reviewed all the Property information and assumes that all the information and technical documents reviewed and listed in the References section are accurate and complete in all material aspects. The Author believes the information used to prepare this Technical Report is valid and appropriate considering the purpose of the current technical report.

## 2.2 Effective Date

The effective date of this technical report is November 25, 2024.

# 2.3 List of Abbreviations

Units of measurement used in this report conform to the metric system. All currency in this report is Canadian dollars (C\$) unless otherwise noted.

Abbreviation	Description	Abbreviation	Description	
а	annum	kWh	kilowatt-hour	
А	ampere	L	litre	
bbl	barrels	lb	pound	
btu	British thermal units	L/s	litres per second	
°C	degree Celius	m	metre	
C\$	Canadian dollars	М	mega (million)	
cal	calorie	m²	square metre	
cfm	cubic feet per minute	m³	cubic metre	
cm	centimetre	μ	micron	
cm <sup>2</sup>	square centimetre	MASL	metres above sea level	
d	day	μg	microgram	
dia	diameter	m3/h	cubic metres per hour	
DGM	discrete gaussian model	mi	mile	
dmt	dry metric tonne	min	minute	
dwt	dead-weight ton	μm	micrometre	
°F	degree Fahrenheit	mm	millimetre	
ft	foot	mph	miles per hour	
ft <sup>2</sup>	square foot	MVA	megavolt-amperes	
ft <sup>3</sup>	cubic foot	MW	megawatt	
ft/s	foot per second	MWh	megawatt-hour	
g	gram	ОК	Ordinary Kriging	
G	giga (billion)	oz	Troy ounce (31.1035g)	
Gal	Imperial gallon	oz/st,opt	ounce per short ton	
g/L	gram per litre	ppb	part per billion	
Gpm	Imperial gallons per minute	ppm	part per million	
g/t	gram per tonne	psia	pound per square inch absolute	
gr/ft <sup>3</sup>	grain per cubic foot	psig	pound per square inch gauge.	
gr/m <sup>3</sup>	grain per cubic metre	RL	relative elevation	
ha	hectare	S	second	
hp	horsepower	st	short ton	
hr	hour	stpa	short ton per year	
Hz	hertz	stpd	short ton per day	
in.	inch	t	metric tonne	
in <sup>2</sup>	square inch	tpa	metric tonne per year	

J	joule	tpd	metric tonne per day
k	kilo (thousand)	US\$	United States dollar
kcal	kilocalorie	USg	United States gallon
kg	kilogram	USgpm	US gallon per minute
km	kilometre	V	volt
km²	square kilometre	W	watt
km/h	kilometre per hour	wmt	wet metric tonne
kPa	kilopascal	wt%	weight percent
kVA	kilovolt-amperes	yd3	cubic yard
kW	kilowatt	yr	year

# 3 RELIANCE ON OTHER EXPERTS

This report has been prepared by UMR for ATHA. The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to UMR at the time of preparation of this report,
- Assumptions, conditions, and qualifications as set forth in this report, and
- Data, reports, and other information supplied by ATHA and other third-party sources.

For the purpose of this report, UMR has relied on ownership information provided by ATHA. UMR has not researched property title or mineral rights for the Property and expresses no opinion as to the ownership status of the Property. UMR also relied on the experts that completed the Metallurgical testing for the Deposit and expresses no opinion on the outcomes of the testing. Their reports are summarized in section 13.

The information for the mineral claims constituting the Property is as noted in Section 4 of this report as of November 25, 2024, the date of UMR's review.

Except for the purposes legislated under provincial securities laws, any use of this report by any third party is at that party's sole risk.

#### **PROPERTY DESCRIPTION AND LOCATION** 4

#### 4.1 **Description and Location**

The Angilak Property, which hosts the Lac 50 Uranium Deposit, is located 350 kilometres west of Kangiglinig (Rankin Inlet) and 225 kilometres southwest of Baker Lake in the Kivallig Region of Nunavut. The Property is bound between Latitudes 62° 14' and 62° 48' North and Longitudes 98° 21' and 99° 44' West, (North American Datum 1983 (NAD83), Universal Transverse Mercator (UTM) Zone 14 coordinates: 6901449 mN and 6960000 mN and 463830 mE to 533463 mE) and is within the 1:50:000 National Topographic (NTS) map sheets 065 J/05, J/06, J/07, J/09, J/10, J/11, J/12, J/14 and J/15. The Property comprises 112 Crown issued mineral claims and 1 mining lease, as well as an Inuit Owned Land (IOL) parcel (RI30-001) for a total area of 157,440 hectares. ATHA has acquired the right to conduct exploration work on the IOL parcel under a Mineral Exploration Agreement (MEA) with Nunavut Tunngavik Inc. (NTI). Land use permits enabling exploration work to be conducted on the Property have been issued, amended and renewed by the Kivallig Inuit Association (KIA) for parts of the Property covering the IOL and by CIRNAC for the Crown Lands. Figure 4-1 depicts the general location of the Angilak Property.



Figure 4-1: Angilak Property Land Tenure

#### 4.2 Land Tenure

The Property comprises 112 crown issued mineral claims (149,856 ha) and one (1) mining lease (198 ha), as well as Inuit Owned Land (IOL) parcel RI30-001 (7,386 ha) which is administered by Nunavut Tunngavik Inc. (NTI) (Table 4-1). A portion of the crown issued claims were registered in the name of a holding company named 5833 Nunavut Ltd. when Latitude Uranium (formerly Labrador) acquired the claims in 2023. ATHA acquired LUR in April 2024 including 100% of all assets owned by LUR and its wholly owned subsidiary 5833 Nunavut Ltd. New claims staked in 2024 by ATHA are currently registered under ATHA Energy (NU) Corp, another wholly owned subsidiary of ATHA. In addition, the Mineral Exploration Agreement with Nunavut Tunngavik Inc. for RI30-001 has been assigned from 5833 Nunavut Ltd. to ATHA Energy (NU) Corp.

Under the Nunavut Mining Regulations (NMR), the duration of a recorded mineral claim is 30 years, beginning on its recording date, plus any extensions, unless the recorded claim is taken to lease or cancelled. In order to keep a mineral claim in good standing, a holder of a recorded claim must do work that incurs a cost annually beginning on the day on which the claim is recorded for each unit (approximately 18 to 19 ha) included in the recorded claim as follows:

- \$45 in respect of the first year;
- \$90 in respect of the second to fourth years;
- \$135 in respect of the fifth to seventh years;
- \$180 in respect of the eighth to tenth years;
- \$225 in respect of each of the eleventh to twentieth years; and
- \$270 in respect of each of the twenty-first to thirtieth years.

To maintain the mineral claim in good standing a report of work (assessment report) is required to be filed within 120 days after the second anniversary of the recording of the claims or any subsequent anniversary date. Work reported in one report must have been performed within a period of not more than 12 consecutive months during the four years immediately preceding the day on which the report was submitted and after the day on which the claim was recorded. Expenditure costs are required to be filed with the assessment report along with a table setting out the cost of work (expenditure) that is allocated to each claim. The Mining Recorder will evaluate the assessment report to assess their compliance with NMR and determine the cost of work to be set out in a certificate of work. Once the expenditures are approved an allocation of work can be completed on NMS and will result in the updating of expiry dates of the claims. An assessment report for the 2023 field program covering all the claims (including those with expiry dates in 2023) comprising the Angilak Property was filed in December 2023. The report and expenditures are currently under review. Once the report and expenditures are approved the costs will be allocated to the claims and expiry dates will be updated. The expenditures reported in the 2023 Assessment report totalled \$10,023,455.29 and are sufficient to extend the expiry dates of the claims by 6 to 10 years.

Tenure Type	Claim Number	Claim Name	Owners	Issue Date	Anniversary Date	Area (Ha)
Claim	100039	DIP 01	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1234.914
Claim	100040	DIP 02	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1234.914
Claim	100041	KU 1	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	671.97
Claim	100042	KU 2	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	634.652
Claim	100043	KU 3	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	560.016
Claim	100044	KU 4	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	466.68
Claim	100045	KU 5	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	634.645
Claim	100046	KU 6	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	934.335
Claim	100047	KU 7	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1121.202
Claim	100048	KU 8	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1121.202
Claim	100049	KU 9	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1121.202
Claim	100050	KU 10	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1121.196
Claim	100051	KU 11	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	672.528
Claim	100121	KU 21	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1197.646
Claim	100122	KU 17	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1122.732
Claim	100123	KU 18	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1122.738
Claim	100124	KU 19	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1122.738
Claim	100125	KU 20	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1122.738
Claim	100319	VK 1	5833 Nunavut Ltd. (100%)	2021-09-13	2023-09-13	1195.981
Claim	100320	TAL 2	5833 Nunavut Ltd. (100%)	2021-11-01	2023-11-01	1114.326
Claim	100321	TAL 7	5833 Nunavut Ltd. (100%)	2021-11-01	2023-11-01	1112.766
Claim	100322	VGR-5	5833 Nunavut Ltd. (100%)	2021-05-18	2024-05-18	1430.968
Claim	101144	KV 16	5833 Nunavut Ltd. (100%)	2021-09-03	2027-09-03	1306.053
Claim	101429	KV 27	5833 Nunavut Ltd. (100%)	2021-09-03	2027-09-03	1121.15
Claim	101511	ANG1	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1234.914
Claim	101513	ANG2	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1122.57
Claim	101514	ANG3	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1122.57
Claim	101515	ANG4	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	934.195
Claim	101516	ANG10	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1195.272
Claim	101517	ANG12	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1175.29
Claim	101518	ANG14	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1044.841
Claim	101519	ANG16	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	671.967
Claim	101520	ANG18	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1229.923
Claim	101521	ANG22	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1286.962
Claim	101522	ANG23	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1120.59
Claim	102065	ANG5	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	934.195
Claim	102066	ANG6	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1121.034
Claim	102067	ANG7	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1121.034
Claim	102068	ANG8	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	653.165
Claim	102069	ANG9	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	802.449
Claim	102070	ANG11	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	560.205
Claim	102071	ANG13	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1119.436
Claim	102072	ANG15	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1306.117
Claim	102073	ANG17	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1006.533
Claim	102074	ANG19	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	1006.32
Claim	102075	ANG20	5833 Nunavut Ltd. (100%)	2021-10-26	2023-10-26	168.096
Claim	102733	ANG31	5833 Nunavut Ltd. (100%)	2021-11-19	2023-11-19	1854.947
Claim	102734	ANG32	5833 Nunavut Ltd. (100%)	2021-11-19	2023-11-19	1742.482
Claim	102735	ANG33	5833 Nunavut Ltd. (100%)	2021-11-19	2023-11-19	1686.195
Claim	102736	ANG34	5833 Nunavut Ltd. (100%)	2021-11-20	2023-11-20	1010.382

Table 4-1: Land Tenure Status for the Angilak Property.

Tenure Type	Claim Number	Claim Name	Owners	Issue Date	Anniversary Date	Area (Ha)
Claim	100039	DIP 01	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1234.914
Claim	100040	DIP 02	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1234.914
Claim	100041	KU 1	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	671.97
Claim	100042	KU 2	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	634.652
Claim	100043	KU 3	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	560.016
Claim	100044	KU 4	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	466.68
Claim	102737	ANG35	5833 Nunavut Ltd. (100%)	2021-11-20	2023-11-20	1177.974
Claim	102738	ANG36	5833 Nunavut Ltd. (100%)	2021-11-20	2023-11-20	1345.888
Claim	102739	ANG37	5833 Nunavut Ltd. (100%)	2021-11-20	2023-11-20	1046.01
Claim	102802	ANG38	5833 Nunavut Ltd. (100%)	2022-02-14	2024-02-14	1867.495
Claim	102803	ANG39	5833 Nunavut Ltd. (100%)	2022-02-14	2024-02-14	1566.656
Claim	104005		ATHA Energy (NU) Corp. (100%)	2023-12-14	2025-12-14	1840.848
Claim	104006		ATHA Energy (NU) Corp. (100%)	2023-12-14	2025-12-14	1841.095
Claim	104007		ATHA Energy (NU) Corp. (100%)	2023-12-14	2025-12-14	1841.363
Claim	104008		ATHA Energy (NU) Corp. (100%)	2023-12-14	2025-12-14	1745.591
Claim	104009		ATHA Energy (NU) Corp. (100%)	2023-12-14	2025-12-14	1782.712
Claim	104010		ATHA Energy (NU) Corp. (100%)	2023-12-14	2025-12-14	1856.987
Claim	104011		ATHA Energy (NU) Corp. (100%)	2023-12-14	2025-12-14	1004.238
Claim	104484	ANG1	ATHA Energy (NU) Corp. (100%)	2024-04-01	2026-04-01	1764.986
Claim	104485	ANG2	ATHA Energy (NU) Corp. (100%)	2024-04-01	2026-04-01	1822.757
Claim	104486	ANG3	ATHA Energy (NU) Corp. (100%)	2024-04-01	2026-04-01	1042
Claim	104864	DA1	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1852,123
Claim	104865	ANG CB 1	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1836 819
Claim	104866	ANG CB 2	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1555.967
Claim	104867	KT1	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1861 642
Claim	104868	ANG CB 3	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1649.887
Claim	104869	ANG CB 4	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1801.624
Claim	104870	NN 01	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1871.817
Claim	104871	ANG CB 5	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1879.555
Claim	104872	KT2	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1785.792
Claim	104873	ANG CB 6	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1803.288
Claim	104874	ктз	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1692 484
Claim	104875		ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1783.851
Claim	104876	ANG CB 7	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1797 365
Claim	104877	ANG CB 8	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1854 726
Claim	104878	NN 02	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1554 948
Claim	104879		ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1874.929
Claim	104880	DA3	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1785.9
Claim	104881	DA4	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1862.483
Claim	104882	KT4	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1673.9
Claim	104883	KT5	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1230.663
Claim	104884	KT6	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1798.447
Claim	104885		ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1876.255
Claim	104886	KT7	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1816.545
Claim	104887	KT8	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1648.81
Claim	104888	ктя	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1875.3
Claim	104889		ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	807 417
Claim	104890	MC1	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1850,126
Claim	104891	KT10	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1876.326
Claim	104892		ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	450.734
Claim	104893	KT11	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1875.608

Tenure Type	Claim Number	Claim Name	Owners	Issue Date	Anniversary Date	Area (Ha)
Claim	100039	DIP 01	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1234.914
Claim	100040	DIP 02	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	1234.914
Claim	100041	KU 1	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	671.97
Claim	100042	KU 2	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	634.652
Claim	100043	KU 3	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	560.016
Claim	100044	KU 4	5833 Nunavut Ltd. (100%)	2021-11-08	2024-11-08	466.68
Claim	104894	KT12	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1839.768
Claim	104895	MC2	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1884.028
Claim	104896	KT13	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1783.737
Claim	104897	KT14	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1879.275
Claim	104898	MC3	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1826.504
Claim	104899	KT15	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1880.128
Claim	104900	MC4	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1658.133
Claim	104901		ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	131.398
Claim	104902	MC5	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1712.338
Claim	104903		ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	131.381
Claim	104904	KT16	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1879.555
Claim	104905		ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1882.073
Claim	104906	KT17	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1185.396
Claim	104907		ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	112.569
Claim	104908		ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	262.794
Claim	104909	KT18	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	1857.096
Claim	104910	KT19	ATHA Energy (NU) Corp. (100%)	2024-09-02	2026-09-02	786.988
Lease	RA4583	L-6247	5833 Nunavut Ltd. (100%)	2018-08-29	2021-08-29	198
IOL	RI30-001		5833 Nunavut Ltd. (100%)	2007-04-01	Annual Renewal	7386
					Total Hectares	157,440.068

At any time during the life of the mineral claim, the holder may apply to convert all or a portion of the mineral claim to a mining lease, as long as a certificate of work has been issued in respect of the claim that allocates to the claim a total cost of work of at least \$1,260 per unit. No exploration work is required once the application to convert the mineral claim to a lease is filed with the mining recorder. The application to convert a mineral claim to a mining lease must be accompanied by a legal survey. No exploration is required for granted mining leases. A mining lease is normally granted for a term of 21 years and is renewable for further terms. Mining of any mineral product may only be conducted on a mining lease.

The holder of the mining lease that was issued before November 1, 2020 is required to pay an annual rental fee of \$2.50 per hectare during the first term and \$5.00 per hectare during each renewed term before that date. The annual rent for a lease that is issued on or after November 1, 2020 and for any lease that is renewed on or after that date is \$10 per hectare.

Work and fees for IOL Parcel RI30-001 are described in a Mineral Exploration Agreement (MEA RI30-001) between the Company and NTI, and are as follows:

Annual fees:

- \$1.00 per hectare in respect of the first year;
- \$2.00 per hectare in respect of the second to fifth years;
- \$2.50 per hectare in respect of the sixth to tenth years; and
- \$4.00 per hectare in respect of the eleventh to twentieth years.

Exploration Work:

- \$4.00 per hectare in respect of the first and second years;
- \$10.00 per hectare in respect of the third to fifth years;
- \$18.00 per hectare in respect of the sixth to tenth years;
- \$30.00 per hectare in respect of the eleventh to fifteenth years; and
- \$40.00 per hectare in respect of the sixteenth to twentieth years.

# 4.3 Mineral Rights

Obtaining surface rights is required to obtain a mining lease.

The surface rights for the 112 mineral claims and the single mining lease are owned by the Crown and administered by Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC). Under the Territorial Land Use Regulations (TLUR) a Land Use Permit (LUP) must be obtained from CIRNAC to conduct any work, including ground disturbing work such as drilling, mining or establishment of a camp.

The surface rights for the IOL parcel are owned by the Inuit and administered in the Kivalliq Region by the Kivalliq Inuit Association (KIA). Under the 1993 Nunavut Land Claims Agreement (the NLCA) the Regional Inuit Associations (RIAs) administer access through the issuance of Land Use Licences and Surface Leases, as well as other forms of authorization. A Land Use Licence must be obtained from the regional RIA prior to any access to an IOL.

The Nunavut Planning Commission (NPC), Nunavut Impact Review Board (NIRB) and the Nunavut Water Board (NWB) are institutions of the Nunavut government also established under the Agreement, which provide a regime for land use planning and project assessment.

Under the NLCA and the Nunavut Planning and Project Assessment Act (NUPPA) all activities that require a land or water use authorization from CIRNAC, NWB or an RIA must be submitted as a Project Proposal to the NPC to ensure conformity to the Regional Land Use Plan, if one exists, and to determine whether the activities require screening from NIRB to assess the potential environmental and socioeconomic impacts prior to approval of the required project authorizations. The NWB primary function is to license uses of water and deposits of waste within the Nunavut Settlement Area.

Any future mining on a mineral claim will require conversion to a mining lease, in addition to obtaining surface leases from CIRNAC. On the subsurface IOL Parcel, a production lease must be obtained from the KIA prior to mining.

## 4.4 Royalties and Other Encumbrances

The NMR employ a sliding royalty scheme that ranges from 0 to 14% of the "value" of the output of the mine, with allowable deductions including mining and processing, storage, handling and transportation, reclamation, depreciation, exploration, etc., essentially representing a "Net Profits Interest" (NPI) Royalty. This royalty will be applicable to mining on any of the Crown mineral claims or mining leases.

The IOL lands are subject to an underlying 12% NPI Royalty payable on all minerals to NTI. The MEA (as defined below) requires annual exploration work to be done or payments made in lieu of work, advance royalty payments of C\$50,000/year (to be credited against the 12% NPI Royalty), and a bonus payment of C\$1,000,000 within 60 days of receipt a NI43-101 report that demonstrates a measured mineral resource of at least 12 million pounds of uranium oxide. Upon a production decision at the Angilak Property, NTI can elect to have a 25% participating interest in the Project or collect a 7.5% NPI royalty (in addition to the 12% NPI Royalty).

In 2017, ValOre granted a 1% Net Smelter Returns (NSR) Royalty to Sandstorm Gold Ltd. (ValOre News Release dated January 16, 2017) payable on all mineral products produced from the Angilak Property.

## 4.5 Environmental Liabilities, Permitting and Significant Factors

Physical work within the mineral claims, other than indirect (airborne) surveys, requires several permits and approvals. The mineral claims are subject to land use rules administered by CIRNAC on behalf of the Federal Government. The 1993 NLCA gave Inuit title to 356,000 km<sup>2</sup> of land. Inuit Owned Lands (IOL) comprise several parcels for which Inuit hold surface and/or subsurface title. Work within IOL lands requires notification of the applicable Regional Inuit Association (RIA). In the case of the Angilak Property and IOL Parcel RI-30, ATHA must obtain and hold land use licenses issued by the Kivalliq Inuit Association (KIA). To conduct any surface disturbances including trenching, drilling and mining or to construct a camp, appropriate land use permits are required. The KIA administers the surface rights on behalf of the Inuit people. NTI administers the subsurface rights for IOL Parcel RI-30 and has a Mineral Exploration Agreement (MEA) in place with ATHA.

Below is a list the active permits and licences issued for exploration activities on the Angilak Property. A Nunavut Water Board (NWB) licence authorizes ATHA's water use on the Property.

Issuer/Agency, Date Issued, File Number

- KIA, August 1, 2008, KVL308C09
- NIRB, July 31, 2008, 08EN052
- CIRNAC, August 15, 2019, N2019C0013
- NWB, April 12, 2022, 2BE-ANG2227

Currently, there are a number of 45-gallon drums (370) that contain drill cuttings from the prior drilling campaigns and are stored in a containment storage area west of the main Angilak (Nutaaq) camp. Most of these drums contain non-radioactive cuttings or background radioactivity and will need to be disposed of in a local sump. There are several drums (estimated at fifteen) that contain radioactive drill cuttings. These drums will need to be eventually removed and disposed of in a government approved facility.

The Author is not aware of any environmental liabilities to which the Property may be subject. The Author understands that ATHA has yet to perform any ground disturbance work and to the Author's knowledge, there is no significant historical work which would result in any environmental liabilities on the Property.

The Author is not aware of any other significant factors or risks that would affect access, title, or the ability to perform work on the Property.

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

# 5.1 Accessibility

The Angilak Project is located 350 kilometres west of Kangiqliniq (Rankin Inlet) and 225 kilometres southwest of Baker Lake in the Kivalliq Region of Nunavut. Access to the Property is reliant on helicopters and fixed wing aircrafts. There is a 250-metre-long gravel airstrip 1.5 kilometres west of the Nutaaq drill camp. Exploration at the Property is typically conducted between the months of February and October. Local access to and around the Project site is by either helicopter, float plane or wheeled fixed wing aircraft such as a Single Otter. Commercial-grade airports in Baker Lake and Rankin Inlet are used as mobilization points for supplies and people. Required infrastructure for exploration can be brought in each field season with a Single Otter typically available in Baker Lake.

# 5.2 Climate

The climate is best described as continental-arctic with short cool summers and long cold winters with minimal precipitation. Average summer high temperatures can reach up to 20°C, while average winter temperatures are in the order of -30°C to -35°C. Snow is generally on the ground until the first week of June and ice does not leave the mid-sized lakes until the third week of June. Nearby Yathkyed Lake has ice cover usually until early or mid-July. Smaller lakes freeze over around the end of September. Therefore, most of the year the Angilak Project is covered with snow, except between June and the end of September. Permafrost is present from one metre to unknown depths in mid-summer. The thawed active layer is thick enough by mid to the end of June to allow till sampling and induced polarization surveys. Diamond drilling to 200 metres depths can be accomplished without salt or propane based upon experience.

# 5.3 Local Resources and Infrastructure

There is no permanent infrastructure on the Property, however the Nutaaq camp is a winterized semi-permanent camp that can operate most of the year. There is an esker airstrip located approximately 1.5 kilometres west of the Nutaaq camp. Exploration at the Property is typically conducted between the months of February and October. Local access to and around the Project site is by either helicopter, float plane or wheeled fixed wing aircraft such as a Single Otter. Due to the commercial-grade airport and the relatively close distance, Baker Lake, Rankin Inlet and/or Arviat are the logical mobilization points for all supplies and people. All required infrastructure for exploration can be easily brought in each field season as there is usually a Single Otter available in Baker Lake or Rankin Inlet. The gravel airstrip at Baker Lake is roughly 1,279 metres in length and is regularly serviced by commercial airlines. Most supplies and materials required to conduct basic exploration programs can be obtained in Baker Lake and what cannot be immediately procured can be brought in by barge or by cargo aircraft to Baker Lake. During the winter months a "cat train" service operating in Baker Lake offers overland freight haulage of bulk loads, fuel and equipment on cargo sleds.

Access to water for drilling and camp use is readily available across the Property from abundant glacial lakes and ponds. All required power for the Nutaaq camp and drilling is supplied by diesel generators. All drilling waste is stored onsite until it can be shipped out as backhaul loads to Baker Lake and then onward to Yellowknife or Quebec for proper collection and disposal. During the Author's Property visit, the camp and drill sites, drill cuttings storage sites, and fuel storage sites were observed to be clean, properly bermed where required, and generally in an orderly state.

The Angilak Project lies approximately 225 kilometres southwest of Baker Lake and 325 km southwest of the tidewater of Rankin Inlet in the Kivalliq Region of Nunavut. Both Baker Lake and Rankin Inlet receive shipped and barged supplies during August through to the end of October once the sea is free of ice. Shipping is generally out of Montreal, QC or out of Churchill, MB. The deep-water port of Churchill is 260 kilometres to the southeast of Arviat and is connected to southern Canada via rail. Barging directly from Churchill, MB to Baker Lake, Rankin Inlet and Arviat can be conducted from July to October.

Most field exploration activities can be conducted year-round, although there may be periods from December to March, where snow conditions and temperatures may temporarily impede work. Sufficient water for exploration is available via local sources. The surface rights are a combination of Federal Government ownership and Inuit ownership.

There are no other significant factors or risks that the Author is aware of that would affect access or the ability to perform work on the Property.

#### 5.4 Physiography

The Property is situated in the "barren lands," a large region of almost flat, treeless tundra characterized by poor bedrock exposure and extensive swampy areas with abundant small, shallow lakes. Elevation at the Property ranges from 150 to 250 metres above sea level (asl). Locally maximum relief ranges from 30 to 75 metres but is more commonly less than 20 metres. Glacial deposits in the area are extensive thus limiting rock exposure to less than a few percent of the total Property area.

# 6 HISTORY

Numerous polymetallic showings and one uranium deposit have been discovered in the project area by various exploration companies since the 1960's. To date, most showings occur close to the northern boundary of the Angikuni sub-basin, within both Archean basement and younger overlying basin-fill material. The high concentration of showings proximal to the unconformity between the basement and Proterozoic Angikuni sub-basin is partially due to a high volume of exploration targeting unconformity-related uranium, which is ideally applicable to this area (Jefferson et al., 2007). This was the model used by previous exploration companies in the late 1970's, and much of the mineralization noted to date, including the Lac 50 Deposit, relates to this model. However, many of the showings, particularly within the basin, have significant amounts of copper (Cu) and silver (Ag). Miller (1993) suggested a red bed copper mineralization model to explain this mineralization. More recently, companies such as Western Mining Corporation (WMC), Kaminak, Kivalliq Energy, and ValOre have suggested that the iron oxide copper gold (IOCG) deposit model is a possible explanation for some of the polymetallic showings. The historical claims of the area largely overlaps with the ATHA claims, and, to the knowledge of the Author, the described work in this section only pertains to the claims currently held by ATHA.

#### 6.1 Early Exploration (1970-1982)

Previous exploration in the area is summarized below and in Table 6-1 as highlights of the most relevant historical exploration, organized by company and year. Report numbers refer to numbers given to each assessment report by CIRNAC. The earliest historical exploration was completed between 1970 and 1981 and was concentrated along the northern margin of the Angikuni subbasin as shown by the historical mineral claim position for the late 1970's (Figure 6-1). As historical property boundaries are not the same as the current property boundaries, some of the historical work completed during this timeframe may fall outside of the current margins of the Property. During this time period the most important exploration was completed by Urangesellschaft, Noranda and Pan Ocean (later Aberford Resources). The Lac 50 Uranium Deposit was discovered by Pan Ocean, but there is very little documentation or data that exists and is publicly available for this work completed on the deposit. Previous exploration by other companies in the region is covered in detail in the reports by Setterfield (2007), Dufresne (2008), Dufresne and Sim (2011), and Dufresne et al. (2012 and 2013).

Documentation of drilling done by Pan Ocean (later Aberford Resources) in the late 1970's and early 1980's at the Lac 50 Deposit area is not available in government assessment reports. Miller et al. (1986) reported the presence of several high-grade uranium results from historical drillhole intersections over very narrow widths at the Lac 50 area. The historical drilling is summarized in Setterfield (2007), Dufresne (2008), and Dufresne and Sim (2011).

Exploration for uranium ceased abruptly at Lac 50 and the surrounding area when Pan Ocean divested its uranium projects in 1982. This was in large part due to accidents at the Three Mile Island Nuclear Power facility in 1979 and at Chernobyl in 1986 combined with the decline in oil prices during the mid 1980's. These events had a strong negative impact on uranium consumption and kept prices below US\$10 per pound throughout the 1980's, which curtailed global exploration and development.



Figure 6-1: Historical Land Tenure, Late 1970's (Dufresne et al., 2013)

Note: The sub-basins are demarcated by the red outline in the figure.

Company	Years	Type of Work Conducted	Assessment Report #	
Bluemont Minerals	1970	Airborne scintillometer survey, hydrogeochemical survey and minor mapping.	60294	
Shell Minerals	1976	Prospecting.	80653	
Comaplex Resources	1978	Regional prospecting, airborne radiometric survey, prospecting, mapping, VLF, lake bottom and water surveys.	81292	
Essex Minerals	1976- 1979	Geological, minor trenching, soil and water geochemical surveys and ground radiometric surveys. IP/EM/emanometer surveys. Mapping and diamond drilling.	080661, 081087	
Urangesellschaft	1975- 1981	Lake sediment and water survey, prospecting/mapping, soil sampling, scintillometer survey, chip sampling, trenching and ground magnetics. VLF, IP and Max-Min surveys. Diamond drilling and minor gravity surveying.	080810, 080619, 062011, 080977, 080981, 081091, 081451	
Noranda Exploration	1975- 1980	Airborne radiometric, magnetic and VLF-EM surveys. Mapping, prospecting, lake sediment sampling, soil sampling and radon emanometer surveys. Diamond drilling, ground magnetics, VLF and IP surveys.	080152, 080659, 080725, 080926, 080990, 081173, 081066	
Pan Ocean	1975- 1981	Airborne radiometric/magnetic/VLF survey, mapping, ground radiometric/magnetic/EM surveys, sampling, soil surveying, prospecting, diamond drilling, frost boil geochemistry survey, lake sediment sampling and water survey.	080598, 080597, 080618, 061692, 061562, 080714, 061814, 061815, 080945, 081075, 081072, 081082, 081368, 081358, 081387, 081433, 081453, 081361, 080715	

#### Table 6-1: Summary of Early Exploration (1970 - 1982)

#### 6.2 Historical Exploration (1993-2007)

In 1993, Nunavut Tunngavik Incorporated (NTI) was formed to manage land and implement the Nunavut Land Claims Agreement (NLCA), which itself was established in 1993. Along with the formation of the territory of Nunavut in 1999, came the establishment of 37,000 km<sup>2</sup> of subsurface land parcels of Inuit Owned Land, including IOL Parcel RI30-001, which is situated over the historic Lac 50 Uranium Deposit.

In 1993 and 1994, Royal Bay/Leeward Capital/Taiga Consultants completed geological mapping, ground magnetics and heavy mineral sampling of areas targeted as possible kimberlite pipes (Assessment Report # - 083221, 083235, 083288, 083287).

In 1995, Western Mining Corporation completed a mapping, ground magnetic/gravity surveys, diamond drilling and lakeshore/till/stream sediment sampling (Assessment Report # 083221, 083235, 083288, 083287).

In 2007, NTI announced its new pro-uranium policy and expressed interest in forming a partnership with exploration companies to conduct uranium exploration on IOL parcels in Nunavut. That same year, NTI and Kaminak Gold Corporation (Kaminak) signed a landmark uranium partnership to explore IOL parcel RI30-001 and Kaminak's surrounding federal mineral claims (Dufresne, 2008). This led to the creation of Kivalliq Energy Corporation (later renamed as ValOre Metals Corp in 2018) as a spin out company of Kaminak in 2008, formed with the express purpose to explore and advance the Angilak Project.

In 2007, Kaminak commissioned GeoVector Management Inc. (GeoVector) to conduct a detailed compilation followed by a field program based on the results of this compilation (Setterfield, 2007). Kaminak's in-house technical team, along with GeoVector personnel, conducted geological mapping, prospecting and field verification of historical work, including verifying historical trench and drilling locations (Setterfield, 2007). APEX Geoscience Ltd. personnel were contracted by Kaminak and conducted a follow-up property visit later the same season, and between the two field programs, a total of 26 rock grab samples were collected from several historical showings (Dufresne, 2008).

Although the work completed by Kaminak personnel was reconnaissance in nature it confirmed and demonstrated the potential for several styles of uranium mineralization that could be related not only to unconformity and vein-type uranium models but potentially also to IOCG style mineralization. Rock grab samples collected by Kaminak personnel yielded assays of up to 0.87%  $U_3O_8$ , 2.45% Cu, 31.9 grams per tonne (g/t) gold (Au) and 1,170 g/t silver (Ag) within Angikuni sub-basin sedimentary rocks just above or adjacent to the basal unconformity along the northwestern margin of the Angikuni sub-basin. Kaminak personnel visited the historic Lac 50 Deposit area as well, where several outcrops were noted to yield significant radioactive readings.

# 6.3 Kivalliq Energy Corp. Exploration (2008 to 2018)

Between 2008 and 2016, exploration work on the Property was consistent and included multiple ground geophysical surveys (gravity, magnetics and VLF), airborne geophysical surveys (TDEM, magnetics, radiometrics, VLF-EM, and VTEM), diamond drilling, reverse circulation (RC) drilling, soil sampling, rock sampling, geological mapping, and prospecting. Exploration carried out is described in detail by Aeroquest International (2008), Stacey (2010), Dufresne and Sim (2011), Dufresne et al. (2012), Stacey and Barker (2012), Stacey and Barker (2013), and Dufresne et al. (2013).

In 2008, exploration consisted of airborne and ground geophysical surveying, prospecting, rock sampling, and confirmation of historical drill collar locations. A combined magnetic, electromagnetic (EM) and radiometric AeroTEM III airborne geophysical survey was completed over the Property in May 2008. Magnetic (MAG), radiometric, and very low frequency electromagnetic (VLF-EM) ground geophysical surveys were completed on the Property. A field work program was completed with the objective of verifying and expanding information on several historical showings and drilling locations across the Property. During this program, 130 rock grab and historical drill core samples were collected, and the collar locations for 123 historical drillholes were verified (Dufresne and Sim, 2011).

The 2009 exploration program on the Property consisted of ground geophysical surveying, a diamond drill program, and the re-logging of historical drillholes. MAG and VLF-EM ground geophysical surveys were completed. The surveys resulted in the identification of a 9-kilometre long trend of parallel VLF-EM conductors that are associated with the Lac 50 Uranium Deposit (Dufresne and Sim, 2011). The objective of the diamond drill program in 2009 was to verify and test the continuity of the Lac 50 Deposit. Of the 16 holes drilled, 15 drillholes targeted the Lac 50

Deposit, and 12 drillholes intersected intervals of significant uranium mineralization. The drill program results showed that the "Main Zone" of uranium mineralization is relatively predictable, dipping approximately 70° degrees to the south with a strike of 116° (Dufresne et al., 2013).

In 2010, exploration work completed included geochemical rock sampling, diamond drilling, environmental baseline monitoring, and the construction of the Nutaaq camp. The diamond drill program targeted the Lac 50 Deposit area with the objective of generating enough data needed to support a mineral resource estimate (Dufresne and Sim, 2011). A total of 107 drillholes were completed. Of these holes, 103 drillholes targeted the Lac 50 Deposit, and 88 drillholes intersected anomalous uranium mineralization (Dufresne et al., 2013).

During 2011, airborne and ground geophysical surveys, rock and soil sampling programs, diamond drilling, as well as continued environmental monitoring were completed on the Property. A helicopter mounted DIGHEM MAG, frequency domain EM, and radiometric survey was completed. The survey defined major conductive trends on the Property (Dufresne et al., 2012). A two-phase gravity ground survey program at seven major target areas on the Property was completed to aid drill planning. Weak to moderate gravity lows were observed at the VGR northeast, Yat and IM76 target areas, while the MM64 grid showed no anomalous results. The gravity results for the IM76 and VGR grids indicated potential for unconformity associated clay alteration and uranium mineralization. The Yat grid yielded a weak gravity anomaly associated with a conductive fault zone. Follow-up RC drilling on the "bullseve" gravity low at VGR proved that the anomaly was caused by clav alteration of bedrock (Dufresne et al., 2012). MAG and VLF-EM ground surveys at 24 target areas on the Property was conducted. Grids surveyed during the ground geophysical program yielded VLF-EM conductors of interest with at least minor uranium mineralization on surface apart from one or two conductors (Stacey and Barker, 2012). The only new conductor identified by the survey was spatially associated with the AG Showing (Dufresne et al., 2012; Stacey and Barker, 2012). The aim of the 2011 sampling program was to discover new mineral occurrences, to revisit areas of interest identified by the 2010 field program and to identify mineralization and geological trends on the Property. The rock sampling program identified the Nine Iron, Dipole, and Ag showings on the Property (Dufresne et al., 2012; Stacey and Barker, 2012). A reconnaissance RC drill program was completed on the Property, where 88 RC holes were completed. Anomalous intersections in the Lac 50 Deposit area were followed-up with diamond drilling. A total of 153 diamond drillholes were also completed targeting the Lac 50 Main Zone along with it's eastern and western offset extensions, and reconnaissance drilling targeting the Blaze, Ag, J9, Joule-Mushroom Lake, Pulse and Spark prospect areas.

Exploration work completed during 2012 included geophysical surveys, prospecting, geological mapping, diamond and RC drilling, rock sampling, and continued environmental baseline monitoring. Condor Consulting Inc. (Condor) was contracted in spring 2012 to complete a review of all previous geophysical data to aid in the planning of additional geophysical surveys in 2012 (Dufresne et al., 2013). The results of this review are presented in detail in Condor Consulting Inc. (2012) and Dufresne et al. (2013). The ground geophysical surveys completed on the Property included a gravity survey, capacitively coupled resistivity (OhmMapper), magnetics, VLF-EM, and multi-channel radiometric surveys (Dufresne et al., 2013). The gravity method was used to test the detection of anomalies due to density variations of rock types that contain uranium mineralization, clay alteration or fault zones. Weak gravity anomalies were identified at the Yat target grid that are associated with a conductive fault zone (Dufresne et al., 2013). The purpose of the magnetics, VLF-EM and resistivity (OhmMapper) surveys was to supplement previous work and better define subsurface conductors and magnetic bodies as priority target areas. Multi-channel ground radiometric surveys were completed as well with the purpose of testing the potential to identify subtly elevated background radioactivity. Overall, the results of the radiometric

survey were deemed to be ineffective or inconclusive at most targets, with some moderate to strong anomalies being identified at the Forte and Nine Iron targets in association with known outcrops and structures with uranium mineralization (Dufresne et al., 2013; Stacey and Barker, 2013).

A helicopter supported geological mapping and prospecting program was also carried out. The goal of the geological mapping program was to examine in detail the areas of interest identified during 2010 to 2011 prospecting programs, to follow up on geophysical anomalies (resistivity, VLF-EM, EM, gravity) identified by airborne and ground surveys completed between 2008 and 2012 and to produce a new geological map of the area relating known mineral showings to geological features such as faults, shear zones or specific rock units (Dufresne et al., 2013). The geological mapping program resulted in the identification of three structurally and lithologically distinct domains in the Property area: the Central/Western Gneissic Belt, the Volcanic Block, and the Southeastern Compressive Zone (Stacey and Barker, 2013). Within the Central Gneissic Belt, mapping identified several slices of metavolcanic rocks, which are a part of the Archean Henik Group (Dufresne et al., 2013). The Dipole target occurs within one of these greenstone belts. The geological mapping program focused on the J4-Ray area of the Lac 50 Deposit within the Volcanic Block, which has relatively good outcrop exposure (Dufresne et al., 2013). This detailed mapping resulted in the better understanding of the structures and mineralized vein systems present at the J4-Ray area (Dufresne et al., 2013). The Southeastern Compression Zone, which hosts the Nine Iron showing is located to the southeast of the Volcanic Block (Dufresne et al., 2013). The geological mapping program identified strong compressional fabrics through the area, which are interpreted as being a result of Proterozoic deformation (Dufresne et al., 2013; Stacey and Barker 2013). At the Nine Iron showing, several rock grab samples returned significant Au values of up to 14.4 g/t Au. A total of 95 rock grab samples were collected from in-situ bedrock as well as from cobbles and boulders found in glacial till. Samples were sent for multi-element geochemical assay and whole rock lithogeochemical characterization. A total of 19 samples returned assays more than 0.1% U<sub>3</sub>O<sub>8</sub>, with many yielding significant concentrations of Aq, Cu, Mo, Pb and Zn. Samples with assays more than 0.5% U<sub>3</sub>O<sub>8</sub> were obtained from the target areas: J4, Nine Iron, and Yat (Dufresne et al., 2013). The diamond drill program targeted the Lac 50 Main Zone, the J4/Ray zone, the Pulse zone, and the Nine Iron zone with a total of 172 drillholes completed. Thirty-eight RC drillholes were completed as an exploration tool to target areas with geophysical or geochemical anomalies identified in previous exploration programs.

Exploration during the 2013 field season included ground geophysical surveys, prospecting, soil sampling and diamond drilling. A soil sampling program was carried out with the objective of identifying surface anomalies relating to bedrock conductors to guide further drilling, as well as to test the effectiveness of the Enzyme Leach analytical method. Samples were collected for Enzyme Leach analysis, focusing on the Lac 50 Deposit area, the KU target, and the Nine Iron trend. The KU target is located within the Proterozoic Angikuni Basin south of the Lac 50 trend. The KU soil sampling grid identified an anomalous uranium in soil trend over an area of historical trenches that were dug in the 1980's. The soil sampling program at the Nine Iron trend identified multiple uranium-in-soil anomalies. Most of these uranium-in-soil anomalies are spatially correlated with the northeast-southwest oriented geophysical signature, identified in the April 2013 ground geophysical program, that strikes beneath the Angikuni basin in the Nine Iron trend area. At the KU target area sample highlights included two samples that returned 12,800 ppm U and 9,480 ppm U respectively. The 2013 soil sampling program primarily focused on the Lac 50 trend, where abundant uranium-in-soil anomalies were identified that correlate well with known mineral showings and associated geophysical signatures. At the Hot trend, a significant and broad uranium-in-soil anomaly of up to 2,880 ppb U was identified. In addition, the soil sampling program identified a uranium-in-soil anomaly that extends along the J4 VLF-EM northwest-southeast oriented conductor. The soil sampling program was successful in confirming the effectiveness of the enzyme leach method, as well defining anomalous uranium-in-soil trends associated with geophysical conductors in the Lac 50 deposit area. Several ground geophysical surveys to expand previous survey grids in areas of interest were completed. OhmMapper data was collected at the Lac 50 and KU grids. MAG and VLF-EM survey data were acquired from grids over the KU, Nine Iron and Dipole trends. A total of 9.5 kilometres of Extremely Low Frequency (ELF) data was collected in the Lac 50 trend area. Twelve drillholes targeting the J1 Zone, Mushroom Lake (ML), and J4 West Zone were also completed. Four drillholes were completed at the ML Zone with two of the drillholes targeting the ML "EM" conductor intersecting intervals of anomalous uranium mineralization, including a 1.2 metre core-length interval of  $1.42 \% U_3O_8$  in hole 13-ML-001. Seven diamond drillholes targeted the J1 zone, which is an approximate one-kilometre-long VLF-EM conductor that is located 800 metres to the west of the J4 deposit.

In 2014, a VTEM+ airborne geophysics survey and a soil sampling program was conducted (Figure 6-2). The goal of the soil sampling program was to identify anomalies below surface overburden using the enzyme leach analytical method. Soil samples were collected from sampling grids over multiple target areas with significant uranium-in-soil anomalies identified at the Dipole, RIB, Hot, KU, and Nine Iron trends. This sampling program successfully identified a several kilometre long uranium-in-soil trend over the Dipole target that coincides with a northeast-southwest trending electromagnetic (EM) conductor. A uranium-in-soil anomaly at the RIB trend was also confirmed to coincide with a linear EM conductor trend. Geotech Airborne Geophysical Surveys (Geotech) completed an airborne VTEM survey on two grids over the Dipole-RIB trend and the KU-Nine Iron area. The survey successfully identified several large conductors and EM anomalous zones at the Dipole and RIB trend, which were subsequently confirmed by the enzyme leach soil sampling program that followed, and identified anomalies at the KU-Nine Iron trend zone. The results of the 2014 airborne VTEM survey were integrated with previous survey results obtained to produce a Total Magnetic Intensity Map covering most of the Property.



Figure 6-2: Location Map of Exploration Target Areas (Airborne VTEM Survey TMI 2014)

Exploration work completed in 2015 included soil sampling and prospecting, and diamond drilling. A sampling program over the RIB and Yat target zones, which targeted historical showings, explored for new occurrences of uranium mineralization, and followed up on anomalies identified by previous geophysical surveys. The 2015 soil sampling program at RIB in-filled and extended the previous sampling grid from 2014. This expansion better delineated the several kilometre long uranium-in-soil anomalies spatially associated with the northeast-southwest oriented EM conductors identified by previous airborne and ground geophysical surveying. During the prospecting program at the Dipole-RIB trend, a rock grab sample from within the RIB soil grid returned 6.27% U<sub>3</sub>O<sub>8</sub>, 0.26% Cu, 1.16% Mo, and 144 g/t Ag. Another sample returned 0.76% U<sub>3</sub>O<sub>8</sub>, 0.30% Mo, and 14.9 g/t Ag and was sampled approximately 5 kilometres southwest along strike of the Dipole trend. Three boulders at Yat were sampled in 2015, and two returned significant polymetallic results including 1.82% U<sub>3</sub>O<sub>8</sub>, 6.8 % Cu, 211 g/t Au, and 80.900 g/t A and 7.07 % U<sub>3</sub>O<sub>8</sub>, 1.68 % Cu, 0.5 g/t Au, and 244 g/t Ag. A small enzyme leach soil sampling program was completed over the Yat area, successfully identifying a uranium-in-soil anomaly, confirming the mineralized grab sample from 2011. The 2015 diamond drill program focused on the Dipole target, with the objective of testing a prominent VLF-EM conductor and coincident uranium-in-soil anomaly. The drillholes successfully delineated a 25 to 48-metre-wide area of steeply dipping zones of mineralization that extend approximately 150 metres along strike, with multiple mineralized intervals being encountered in all holes. Hole 15-DP-009 returned the highest assay interval of 2.34 % U<sub>3</sub>O<sub>8</sub>, 1.14 % Mo, and 44 g/t Ag over 1.3 metres.

In 2016, exploration work included a soil sampling program, heavy mineral sampling, trenching, channel sampling, as well as rock sampling. A soil sampling program targeting the Yat and Dipole zones was conducted. The results from Yat greatly expanded on the previous sampling done in 2015 showing uranium-in-soil anomaly trends coincident with northeast-southwest oriented EM
conductors that transect the Yat area, with enzyme leach samples returning up to 129 ppb U along with minor Ag anomaly trends also identified along the same conductor. Additional samples were collected from the Yat for conventional geochemical analysis, which also highlighted uranium-in-soil anomalies where soil samples returned up to 269 ppm U. Rock sampling within the soil sampling grid over the strong magnetic low zone returned multiple anomalous geochemical assay results for U and Ag including 26,000 ppm U and 3200 ppm Ag, as well as 201,000 ppm U and 358 ppm Ag.

The 2016 soil program at the Dipole trend was designed to extend upon the 2014 enzyme leach sampling grid. Results of the soil program identified uranium-in-soil anomalies northeast of the 2014 soil sampling grid, expanding the uranium-in-soil anomaly zone at Dipole to over approximately 3.5 kilometres. This new extended uranium anomaly overlays the central Dipole EM conductor, as well as overlaying a parallel EM conductor approximately 1.5 kilometres to the east. The trenching program involved the re-trenching of 3 historical trenches and the digging of eight new trenches in the Yat area. A total of 49 channel samples were also collected from the trenches for geochemical analysis. Radioactive, brecciated carbonate veining with sulphides, secondary yellow uranium staining and malachite was identified in several trench areas. Mineralization occurs as 1.0- to 1.5-metre-wide structural zones of narrow veins and stringers in sandstone, conglomerate and Christopher Island volcanics of the Proterozoic Angikuni Basin, striking northeast and parallel to the larger Yat EM conductor. Veining, adjacent wall rocks, and mineralized boulders encountered while excavating were sampled. In addition to the trenching program, rock and soil sampling were completed at the Yat target area. The heavy mineral sampling program ran concurrently with the trenching program, and 39 till samples were collected with the purpose of testing the heavy mineral expression in tills down ice of circular magnetic signatures to determine if they could be kimberlitic in origin.

No work was completed by Kivalliq Energy Corp. in 2017.

A summary of the specific work completed on the project by year can be found in Table 6-2.

Kivalliq Energy Corporation announced in 2018 that the company's name was changed to ValOre Metals Corp.

Year	Drilling		Drilling Geophysics			
	# Of Holes	Meterage (m)				
2000			5,620 line-km of airborne TDEM, magnetics and Radiometrics	Property wide prospecting and mapping		
2008			140 line-km of ground magnetics, radiometrics and VLF-EM			
2009	16	1,745	621,2 line-km of magnetics and VLF-EM (over IOL parcel RI30-001)	Relogging of historic core		
2010	107	16,600		290 outcrop and glacial float samples, baseline monitoring, Construction of Nutaaq camp		
			5,470 line-km airborne EM-Mag	273 rock grab samples		
2011	241	30,500	1,605 station ground gravity	348 soil samples		
			1,597.5 line-km magnetics and VLF-EM	RC drilling		
			309 line-km magnetics, VLF-EM and resistivity	Geophysics compilation		
2012	211	38,856	2,556 station ground gravity	Geological mapping		
			196 line-km ground radiometrics	95 rock grab samples		
				RC Drilling		
			591.6 line-km resistivity			
2013	14	2,100	300.9 line-km of magnetics and VLF-EM	1,538 soil samples		
			9.5 km of ELF-EM			
2014			1344.2 line-km VTEM+	1,514 soil samples		
2015	0	059		Prospecting		
2013	9	900		408 soil samples		
2016			504 soil samples			
				trenching, till sampling		

#### Table 6-2: Summary of Kivalliq Activities Between 2008 and 2016

## 6.4 ValOre Metals Corp. Exploration (2018 to 2022)

No work was completed by ValOre Metal Corp. between 2018 and 2021.

Exploration work completed on the Property in 2022 included geophysical surveys, a soil sampling program, RC drilling and diamond drilling.

A soil sample program was conducted across three priority targets: Lac 50 East grid, Dipole grid and the Noranda East traverse, totaling 896 samples. The goal of the soil geochemical survey was to classify and prioritize bedrock conductors for drilling by identifying conductors with associated surface geochemical anomalies. Results of the sampling program highlighted several uranium-in-soil anomalies within the Lac 50 and Dipole grids. Five samples collected from the far southwest extent of the Noranda East traverse line also returned anomalous uranium values. Ground magnetics and VLF-EM surveys over several priority grids was also conducted across the Property. A twenty-seven hole, 3,165 metre RC program was conducted during the spring of 2022 focusing on Dipole, J4 West and Yat zones. A total of seventeen RC holes were completed at the Dipole target with the objective to test the extension of mineralization along strike to the northeast along the coinciding VLF-EM conductor and uranium-in-soil trends, as well as testing the down-dip extension of the shallow uranium mineralization encountered in the 2015 diamond drillhole program (ValOre News Release, 2022). Fourteen out of 17 holes drilled intersected shallow uranium mineralization ranging in interval widths of 1.5 to 22.9 metres along with wide zones of Ag-Mo-Cu mineralization in multiple holes. A total of six RC holes were completed at the J4 West target. Mineralization at J4 West was observed to be associated with a sheared section of hematite-altered, graphite and sulphide bearing tuff hosted within a foliated basalt and gabbro sequence (ValOre News Release, 2023a). Four of the six RC drillholes encountered anomalous uranium mineralization at the central and western zones, with two RC holes drilled at the eastern extent which did not intersect anomalous uranium mineralization. RC holes RC22-J4W-001 and RC22-J4W-002 intersected U<sub>3</sub>O<sub>8</sub> intervals above 0.20%.

Four RC holes were completed at the Yat target. The objective of the Yat program was to test at depth the high-grade polymetallic Pd-Pt-Au-Ag-U results returned from the trench channel and boulder sampling program carried out in 2016. Three out of four drillholes intersected shallow zones of Cu-Ag mineralization as well as local zones of anomalous uranium mineralization (ValOre New Release, 2023a). The high-grade polymetallic mineralization encountered in the 2016 sampling program is interpreted to be confined to discrete, discontinuous veins hosted in the Proterozoic sedimentary and volcanic rocks of the Angikuni Basin.

A twenty-six hole, 3,590 metre diamond drillhole program was completed in the summer of 2022 focused on the Dipole and J4 West zones. At the Dipole target, a total of sixteen diamond drillholes were completed. The objective of the drill program was to test the extension potential northeast along strike of the drilling completed in 2015, as well as following up on the diamond drilling in 2015 and RC drilling in 2022 to test mineralization extension at depth. Fourteen holes encountered anomalous uranium mineralization (>0.01% U<sub>3</sub>O<sub>8</sub>), while the remaining two holes were discontinued at 16 and 6 metres depth due to poor drilling conditions (ValOre New Release. 2023b). The 2022 diamond drilling results strengthened the interpretation that Dipole is geologically similar to the Lac 50 Deposit area, where the uranium mineralization is associated with sheared to brecciated pitchblende-sulphide bearing graphitic tuffs hosted within sequences of Archean mafic-intermediate volcanics (ValOre New Release. 2023b). Intervals of uranium mineralization were encountered at vertical depths of approximately 15 to 250 metres. At the J4 West target, ten diamond core holes were completed. The objective of the diamond drill program was to further test the potential for a sinistral off-set and continuation of mineralization to the southwest of the J4 deposit. Detailed logging of core from J4 West identified mineralization styles, alteration assemblages, and host lithologies bearing strong similarity to those observed at the J4 deposit.

# 6.5 Latitude Uranium Inc. Exploration (2023)

Exploration work completed on the Property by Latitude Uranium Inc. (LUR) included a high resolution radiometric and aeromagnetic airborne survey during the spring of 2023 and diamond drilling completed in the summer of 2023 (Dufrense et al 2024).

A low-level, tight drape, high resolution radiometric and aeromagnetic airborne survey was flown totalling 10,856-line kilometres over the portion of the Property covered by previous VLF-EM surveys (Figure 6-3). The goal of the survey was to identify new targets inside and outside the Lac 50 Trend and to assess the correlation with the existing soil sampling for future program planning.

Interpretation of the survey identified the most prospective conductors coincident with structures having the potential to host uranium mineralization both within and outside of the Lac 50 Deposit area (Figure **6-4**). Numerous high priority areas were identified that showed good correlation with previous soil survey results and were deemed high priority drill targets. The survey also highlighted new prospective areas requiring follow up surface sampling and mapping.







Figure 6-4: Airborne Radiometrics 2023 U Total Count.

Between July 4 and September 4, 2023, LUR completed a diamond drill program in the Lac 50 Deposit area specifically targeting the Main Zone. The 2023 drilling program successfully increased the extent of known mineralization and identified new mineralization horizons. A total of 18 diamond drillholes, with 3 restarts, were completed totalling 5,662 metres. A location map of 2023 drillhole collars and traces is presented in Figure 6-5.



The east and central areas of the Main Zone were tested with eleven holes designed to test the continuity and extension of known mineralization.

- Drillholes 23-LC-001 and 23-LC-003 were drilled to test the potential continuity of mineralization from the most eastern end of the Main Zone to potential link with mineralization in the Eastern Zone. The holes targeted a coincident magnetic high with a low to moderate VLF anomaly. Drillhole 23-LC-003 was located approximately 60 metres from historical drillhole 11-LC-014 in the Main Tuff Horizon and was favorably associated with structure and alteration. Drillhole 23-LC-003 intersected weak uranium mineralization.
- The best result from the 2023 campaign was obtained from drillhole 23-LC-005, which tested mineralization continuity approximately 50 metres down-dip from historical hole 10-LC-089 and infilled a 100-metre gap in the historical drilling. Hole 23-LC-005 intersected 7.54% U3O8 over 1.6m starting at 218.0m, demonstrating mineralization continuity downdip.
- Drillholes 23-LC-002, 23-LC-007, 23-LC-009, and 23-LC-010 were designed as infill holes, step outs from known mineralization and to test the down-dip and up-dip potential of plunging mineralization trends within the Main Zone. All holes intersected uranium mineralization in either the tuff unit associated with the Main Zone or proximal parallel tuff horizons.
- Drillhole 23-LC-013 located within an east-northeasterly, cross-cutting structural corridor intersected mineralization within the Main tuff horizon at depth, as well as multiple shallow mineralized intervals within the Main Zone hanging wall.
- Drillholes 23-LC-004, 23-LC-006 and 23-LC-008 are located centrally along the southern side of the Main Zone within an east-northeasterly cross-cutting structural corridor. The

holes were designed to target mineralization associated with a prominent tuff layer in the hanging wall of Main Zone and assess the influence of the east-northeast trending, crosscutting structures. All three holes intersected shallow uranium mineralization and defined a new lens of near surface mineralization hosted within a parallel tuff horizon. Additional drilling is required to further delineate the parallel hanging-wall mineralized horizon.

The west side of the Main Zone was targeted with seven drillholes designed to test mineralization continuity along strike and at depth.

- Drillhole 23-LC-011 was drilled within a 100-metre gap along strike and 40 metres downplunge of historical hole 09-LC-006, intersecting mineralization and confirming down-dip continuity.
- Drillholes 23-LC-012 and 23-LC-014 intersected multiple zones of mineralization at depth in the Main Tuff Horizon. The highest grades of coincident Cu and U<sub>3</sub>O<sub>8</sub> in drillholes 23-LC-012 and 23-LC-014 were observed in the shallowest intervals associated with a fault zone at the base of a mappable conglomeritic unit.
- Four holes (23-LC-015, 23-LC-016, 23-LC-017 and 23-LC-018) located at the far west side of the Main Zone were all successful in expanding the footprint of mineralization intersecting anomalous mineralization at greater depths than historical drilling

### 6.6 Historical Resource Estimates

An initial maiden Inferred Mineral Resource Estimate (MRE) was completed for Kivalliq Energy (ValOre) in 2010 and subsequently updated in 2012 and 2013 based on additional drilling completed over that period. The most recent mineral resource estimate was completed for the Angilak Project by Robert Sim, P.Geo, with the assistance of Dr. Bruce Davis, FAusIMM, and published as a current resource in 2013 (Dufresne et al., 2013).

The construction and estimation process for the historical MRE generally follows current CIM standards and guidelines (CIM, 2014 and 2019) and uses the current CIM classification framework, even though it was constructed in 2013. However, there would be changes required to the financial information utilized in 2013 and there is insufficient information provided by Mr. Sim and Mr. Davis in Dufresne et al. (2013) to assess how the reasonable prospects for eventual economic extraction (RPEEE) were evaluated. It is unclear whether the historical MRE from 2013 would change by applying constraints such as an open pit and in particular constraining underground shapes to bracket the underground portion of the MRE. For this reason, the Author and ATHA have classified the 2013 MRE as a historical MRE and therefore are not treating it or any part of it as a current MRE.

The 2013 historical MRE was calculated for six mineralized zones: Lac 50 Main, Lac 50 Western Extension, Lac 50 East Extension, J4 Upper, J4 Lower and Ray (Table 10.8). Nominal block sizes measuring 5 metres x 5 metres x 5 metres were used for the Lac 50 portion of the MRE and 5 metres x 3 metres x 3 metres block sizes were used for the J4 portion of the estimate. Grade (assay) and geological information were derived from work conducted by ValOre during the 2009, 2010, 2011 and 2012 field seasons including substantial drilling at the time. Although extensive drilling was conducted on the Lac 50 Deposit in the early 1980's and much of the core remains on the Property, this older dataset could not be properly validated due to unknown collar locations and drillhole orientations. As a result, none of the historical drilling prior to 2009 was used during the development of the resource models for the 2013 historical resource (Dufresne et al., 2013).

The Lac 50 MRE block model was generated from 256 drillholes and 6,173 samples with a total core length of 3,188 metres, all of which were competed by ValOre from 2009 to 2012. The J4/Ray

resource block model was generated from a total of 79 drillholes and 1,363 samples with a total core length of 725 metres, with all holes completed between 2009 to 2012.

The bulk density database contained a total of 1,579 samples that were collected and measured during the 2010, 2011 and 2012 drilling programs. Within the mineralized domains, composited bulk densities at Lac 50 range from 2.35 t/m<sup>3</sup> to 3.77 t/m<sup>3</sup>, with a mean of 2.85 t/m<sup>3</sup>. At J4, composited bulk densities range from 2.52 t/m<sup>3</sup> to 3.52 t/m<sup>3</sup>, with an average of 2.84 t/m<sup>3</sup> (Dufresne et al., 2013).

Block model  $U_3O_8$  grade interpolation was completed using ordinary kriging (OK). Estimates for silver, molybdenum and copper were completed using an inverse distance weighting method (ID<sup>2</sup>, Dufresne et al., 2013).

Table 6-3 provides the historical inferred MRE for the Lac 50 Deposit, broken out into 3 different areas, and the J4/Ray deposits, also broken out into 3 different areas at a cut-off grade of 0.2%  $U_3O_8$  (Dufresne et al., 2013).

	Tonnoo	Crada	Grada	Grade Mo%	Grade Cu%	Metal Content			
Zone	(kt)		Ag g/t			U₃O8 (MIbs)	Ag (koz)	Mo (Mlbs)	Cu (MIbs)
Lac 50 Main	892	0.83	13.5	0.23	0.17	16.2	387	4.5	3.3
Lac 50 W Ext.	709	0.51	17.5	0.04	0.33	7.9	399	0.7	5.2
Lac 50 E Ext.	304	0.57	20.1	0.17	0.28	3.8	197	1.1	1.9
J4 Upper	592	0.70	23.3	0.15	0.28	9.1	443	1.9	3.7
J4 Lower	258	0.94	45.8	0.28	0.24	5.3	379	1.6	1.4
Ray	76	0.53	29.9	0.37	0.10	0.9	73	0.6	0.2
Total	2,831	0.69	20.6	0.17	0.25	43.3	1878	10.4	15.6

Table 6-3: Historical 2013 Inferred MRE Summary by Zone at a 0.2% U<sub>3</sub>O<sub>8</sub> Cut-Off (After Dufresne et al., 2013)

The Author of this Technical Report, and ATHA are treating this 2013 estimate as a "historical mineral resource" and the reader is cautioned not to treat it, or any part of it, as a current mineral resource. The mineral resource estimate was calculated in accordance with NI 43-101 and CIM standards at the time of publication and predates the current CIM Definition Standards for Mineral Resources and Mineral Reserves (May, 2014) and CIM Estimation of Mineral Resources & Mineral Reserves Best Practices Guidelines (November, 2019).

The Author of this Technical Report has not done sufficient work to classify the historical estimate as a current mineral resource. A thorough review of all the 2013 resource information and drill data, along with the incorporation of subsequent exploration work and results, which includes infill drilling and some drilling around the edges of the historical MRE subsequent to the publication of the resource, along with a full review of the economic parameters utilized to determine current RPEEE would be required in order to produce a current MRE for the Property. Any future mineral resource will need to evaluate the open pit and/or underground potential taking into consideration the current cost and pricing conditions or constraints, along with continuity of the resource blocks.

The historical MRE summarized above has been included simply to demonstrate the mineral potential of the Lac 50 Deposit and the Angilak Project. The Author of this Technical Report considers the 2013 MRE to be relevant to the further development of the Project; however, is not treating the historical estimate as a current mineral resource.

### 7 GEOLOGY AND MINERALIZATION

### 7.1 Regional Geology

The Angilak Project is within the Churchill province, a large Archean craton. The Churchill province is welded to the Superior province by the Trans-Hudson orogen, a northwest-dipping subduction zone and to the Slave province and Buffalo Head Terrane by the Thelon/Taltson orogen, an east-dipping subduction zone.

The Churchill Province is comprised of the Rae Domain to the northwest and the Hearne Domain to the southeast, sutured together along the northeast-trending Snowbird Tectonic Zone (Figure 7-1 and Figure 7-2) The Rae Domain is characterized by Mesoarchean basement upon which late Archean supracrustal rocks of the Prince Albert Group were deposited (Hoffman, 1990; Zaleski et al., 2000). While the Hearne Domain is composed mainly of late Archean juvenile tholeiitic greenstone belts with associated plutonic and sedimentary rocks (Sandeman et al., 2004). No in situ Mesoarchean crust has yet been identified in the Hearne Domain (MacLachlan et al., 2005), but inherited zircons (Henderson and Loveridge, 1990) and Nd isotopic signatures (Aspler et al., 2000; Sandeman et al., 1999) indicate at least some involvement of Mesoarchean crust in the vicinity of the Snowbird Tectonic Zone.





\*The Rae Domain is northwest of the Snowbird Tectonic Zone (STZ); the Hearne Domain is southeast of the STZ.



Figure 7-2: Geology of the Thelon/Baker Lake Area (Dufresne et al., 2013)

\*The star is the centre of the compilation area. Modified after Miller et al. (1987), Peterson and Rainbird (1990) and Gall et al. (1992). DB, YB and AB are Dubawnt, Yathkyed and Angikuni Sub-basins respectively.

The Snowbird Tectonic Zone is a major crustal feature that stretches over 3,000 kilometres from Hudson Bay to southern Alberta, and which has undergone a protracted, polyphase tectonic history (Mills et al., 2000). Various researchers have suggested that the Snowbird Zone is representative of an Archean intracontinental fault structure (Hanmer et al., 1994a, 1994b) while others maintain that it is a Proterozoic collisional suture (Hoffman, 1988). While the timing and tectonic significance of this structure are poorly understood, the fault zone likely played a major role in accommodating far-field stresses established by both the Thelon-Taltson and Trans-Hudson Orogeny's. During these orogenic events, the Churchill Province underwent significant crustal shortening and uplift, followed by northeast-directed "tectonic escape" and gravitational collapse (Peterson et al., 2002). This gravitational collapse led to the formation of the rift basins that host the Baker Lake Group (Rainbird et al., 2003) and may have had a significant influence on magmatic activity and metallic mineralization in the area.

In Nunavut, syn- to post-orogenic sedimentation occurred throughout the Thelon-Taltson/Trans-Hudson hinterland from approximately 1.83 to 1.75 billion years ago (Ga), beginning with deposition of the Baker Lake Group and culminating in the deposition of the Thelon Formation (Rainbird et al., 2003).

Volcanic and sedimentary rocks of the Thelon and Baker Lake basins have been assigned to the Dubawnt Supergroup, which has in turn been subdivided into the (oldest to youngest) Baker Lake, Wharton and Barrensland groups (Table 7-1). Deposition of the Dubawnt Supergroup seems to have begun around 1.83 Ga and was probably completed by ca. 1.72 Ga (Peterson et al. 2002). Unconformities are present at the bases of all three formations of the Dubawnt Supergroup.

Age (Ma)	Group	Formation	Lithology
ca. 1270	MacKenzie Dykes		Diabase and gabbro dykes
ca. 1720	Barrensland Group		
		Lookout Point	Dolostone
		Kuungmi	Subaerial Basalt
Minimum 1720		Thelon	Arenitic Pink Sandstone
ca. 1750	Nueltin Suite		Rapakivi A-Type Granite
ca. 1760	Wharton Group	Pitz	Fluorite-bearing Rhyolite
ca. 1830	Martell Syenite		Mafic Syenite; Carbonatite?
ca. 1830	Dyke Swarm	Christopher Island?	Lamprophyre & Minette
ca. 1850-1810	Hudson Suite		A-Type Granite
ca. 1840-1785	Baker Lake Group		
		Kunwak	Red-bed sandstone
		Christopher Island	Ultrapotassic minette lavas; volcaniclastics
		Kazan	Red-bed sandstone
		South Channel	Conglomerate, sandstone; regolith
Paleoproterozoic; >2100 Ma	Hurwitz and Amer Groups	Various	Quartzite, dolomite, arkose, iron- formation
	Tulemalu-MacQuoid		Gabbro and diabase dykes
Archean; >2500 Ma	Various	Various	Granitoid rocks (Snow Island Intrusive Suite)
			Greenstone Belts
			Gneissic granitoids

Table 7-1: Seg	uence and Timin	a of Regional (	Geology Events	and Lithologies	(Dufresne et al., 2013	3)
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The Baker Lake Group, which is restricted to the Baker Lake basin system, consists of the South Channel, Kazan, Christopher Island and Kunwak formations. The ~1,800 metre thick South Channel formation consists of conglomerate with minor lenses of sandstone. The ~1,000-metre-thick Kazan Formation (locally called the Angikuni Formation) is dominated by red sandstones, with local mudstones, which commonly have desiccation cracks (Blake, 1980). The sandstone is geochemically similar to the overlying Christopher Island Formation, suggesting that early potassic volcanic rocks were eroded to form the lowermost sediments within the basin (Cousens, 1999). The Christopher Island Formation (CIF) is up to 2,500 metres thick, and is composed of potassic to ultrapotassic, dominantly subaerial lava flows with lesser pyroclastic rocks, debris flows and conglomerates (Peterson and Rainbird, 1990; Rainbird and Peterson, 1990). This formation is interpreted as the extrusive equivalent of the more widespread minette (a variety of lamprophyre) dykes (LeCheminant et al., 1987). A widespread suite of mafic syenitic plugs, the Martell Syenite, is also thought to feed the CIF (Smith et al., 1980). The Kunwak Formation (up

to 2 km thick) is a coarse red-bed sequence with lesser interlayered debris flows and conglomerates (Rainbird and Peterson, 1990; Gall et al., 1992).

The Baker Lake group is unconformably overlain by the Wharton group, which consists principally of the Pitz Formation. This formation is up to 200 metres thick, erratically distributed between the Thelon and Baker Lake basins and consists of grey to red rhyolite to dacite with lesser sedimentary rocks, typically red beds (Gall et al., 1992).

Rhyolites of the Pitz Formation are commonly ignimbritic, and locally contain fluorite and/or topaz (LeCheminant et al., 1980). Widespread granites, which display rapakivi textures and contain fluorite (i.e., are A-type granites), are interpreted as intrusive equivalents to Pitz Formation volcanics (Gall et al., 1992). These granites have been assigned to the 1.76 Ga Nueltin Suite (Peterson and van Breeman, 1999; Peterson, 1996). Available ages for the Pitz Formation cluster in the 1.76 to 1.75 Ga range, almost 100 million years (Ma) later than CIF (Miller et al., 1989). The Barrensland Group overlies the Wharton Group and is mostly restricted to the Thelon Basin. The Amer/Hurwitz groups are early Proterozoic in age and were deposited prior to 1.83 Ga, when deposition of the Baker Lake Group commenced (Rainbird et al., 2003).

Uranium dominated polymetallic showings are abundant in the Baker Lake basin system. Mineralization including U-Cu  $\pm$  Ag  $\pm$  Au  $\pm$  Pb  $\pm$  Mo  $\pm$  Zn occurs in fractures in Dubawnt Supergroup rocks or Archean basement, U-Cu-Ag  $\pm$  Mo mineralization occurs in Kazan Formation red-beds adjacent to lamprophyre dykes, minor U-Cu-Ag-Au mineralization is associated with the unconformity at the base of the Thelon Basin, and minor U-Cu-Zn mineralization occurs associated with diatreme breccias (Miller, 1980; Miller et al., 1986).

The main diatreme breccia occurrence is east of Baker Lake and consists of angular, closepacked to sparse, clasts of Archean gneiss in a matrix of phlogopite-porphyritic, mafic "syenite" similar in appearance to flows of the CIF. The breccia cuts Archean gneiss and is variably carbonatized, chloritized and/or hematized, and contains a 10 metre wide pod of pitchblende, chalcopyrite and minor sphalerite and pyrite (Miller, 1980). Similar breccias with no mineralization occur elsewhere. Red-bed copper mineralization is known in the Angikuni sub-basin at the base of the CIF (Miller, 1993).

Low grade REE-U-Th mineralization occurs near some of the alkalic dykes associated with the CIF (LeCheminant et al., 1987) and one syenite intrusion southwest of Dubawnt Lake contains up to 1% zirconium (Miller and Blackwell, 1992). Minor base metal (Pb-Cu  $\pm$  Ag  $\pm$  Zn) mineralization occurs in fluorite-bearing veins cutting the CIF spatially associated with a rapakivi granite (LeCheminant et al., 1980). Microdiamonds have been documented in minette dykes southeast of Baker Lake and have been reported from an interpreted diatreme near Dubawnt Lake.

## 7.2 Property Geology

The Lac 50 Uranium Deposit is located adjacent to the northeastern margin of the Angikuni Lake sub-basin and is hosted in Archean metasedimentary and metavolcanic rocks of the Henik Group (Dufresne and Sim, 2011; Figure 7-3). In the deposit area the dominant outcropping lithology is massive and pillowed propylitized metabasalt-meta andesite (Figure 7-4).



#### Figure 7-3: Geology of the Angilak Property (Modified after Stacey and Barker, 2013)



#### Figure 7-4: Geology of the Lac 50 Deposit Area (Modified After Stacey and Barker, 2013)

Prospecting and mapping completed by Bridge et al. (2010) around the Lac 50 Deposit has identified northeast striking fracture-controlled pitchblende-hematite-carbonate veins cutting east-southeast striking Archean metavolcanics that outcrop north and east of the overlying conglomerates of the Angikuni Sub-Basin. The geology of the Project area has been compiled from exploration geological mapping campaigns, historical assessment reports and regional mapping programs by the Geological Survey of Canada (Stacey and Barker, 2013). A schematic stratigraphic column for the Property is presented in Figure 7-5 with crosscutting relationships verified by field observations. Mapping by ValOre personnel took place during the summer field seasons of 2010 to 2012 and expanded on initial work performed by GeoVector in 2008 and 2009. ATHA completed an additional surficial mapping campaign in 2024. The programs were designed to validate existing maps and geological knowledge as well as providing a geological context for the various uranium showings on the Property (Stacey, 2010; Stacey and Barker, 2012 and 2013).



#### Figure 7-5: Generalized Schematic Stratigraphic Section for the Angilak Property (Dufresne et al., 2013).

The Angilak Project is situated between two very large fault systems: the Snowbird Tectonic Zone to the northwest, and the Tyrrell Shear Zone to the southeast. These fault zones initially formed during the assembly of the Archean Rae-Hearne sub-Provinces and were reactivated periodically in response to Proterozoic orogenic events. Transpressional tectonics between these two fault zones had a profound effect on the crustal geometry of the region, establishing an overall northeast-trending structural fabric defined by faults, isoclinal folds and shear zones. Many of these faults were reactivated with the initiation of extensional tectonics in the Mid Proterozoic, resulting in the northeast trending sedimentary basins of the Baker Lake Group. Archean basement rocks have undergone upper greenschist to lower amphibolite-facies metamorphism, while the sedimentary cover sequences are essentially unmetamorphosed.

Stacey and Barker (2013) have defined three structural domains within the boundaries of the Angilak Project based on evidence from field relationships, new geological mapping, and

geophysical surveys. These comprise the central/western gneissic belt, the Volcanic Block, and the southeastern compressive zone (Stacey and Barker, 2013). These three domains are structurally and lithologically distinct, having undergone related, but variable degrees of deformation and metamorphism.

The dominant structural fabric is defined by major 1<sup>st</sup>-order fault zones in the central/western gneissic belt and trends northeast-southwest (NE-SW). Regional mapping completed by the Geological Survey of Canada suggests that the largest of these structures root in the Snowbird Tectonic Zone near Angikuni Lake to the southwest (Tella et al., 2007). All rock fabrics in the gneissic basement trend NE-SW and dip steeply toward the NW or SE. Crystalline basement in this area is composed of granitoid gneiss, gabbro, and granitoid intrusions. Geological mapping in 2012 identified the presence of mafic volcanic rocks imbricated with gneissic basement in the central gneissic belt and was able to correlate these with Henik Group volcanics in the Volcanic Block. This correlation was previously unrecognized due to higher strain and metamorphic grade of the greenstones in the central gneissic belt (Stacey and Barker, 2013).

The eastern half of the Property is partially underlain by mafic to felsic volcanic rocks of the Yathkyed greenstone belt (termed the "Volcanic Block" by the Company). In contrast to the western part of the Property, this structural domain trends east-southeast and dips moderately (50°-70°) toward the south. The Volcanic Block is bounded by major fault zones: these faults are currently designated as "2<sup>nd</sup>-order" faults, but they may in fact be 1<sup>st</sup>-order faults that have been folded or faulted around a major synformal axis centered in the middle of the Property. If this were the case, then the southwest- and east-southeast -trending segments of the greenstone belt may define the limbs of a regional fold structure.

The geometry of greenstone packages in the central gneissic belt suggests that at least some of these rocks were imbricated with gneissic basement rocks during Archean and/or Proterozoic "thick-skinned" thrust faulting. It is therefore possible that the Volcanic Block started out as a northeast-trending thrust slice which was rotated around to an east-southeast orientation during Proterozoic dextral deformation, possibly related to Trans-Hudsonian orogenesis. It should be noted that the metamorphic grade of the Volcanic Block is somewhat lower than those observed in the western and far southeastern parts of the Property. Within this part of the belt, greenschist-grade mineral assemblages dominate, while the western half of the Property is more representative of lower to middle amphibolite-facies metamorphism. The far southeastern part of the Angilak Project is characterized by high-pressure, moderate-temperature metamorphism in the upper amphibolite facies. The mechanism responsible for this discrepancy in metamorphic grade is not well understood, but it is thought that the Volcanic Block occupied a higher structural position in the crust (i.e., closer to surface) than the surrounding higher-grade rocks during peak metamorphism (Stacey and Barker, 2013).

The third structural domain is located in the far southeastern part of the Property, in what is known as the Nine Iron (formerly BIF) area. In contrast to the Volcanic Block, this part of the Property is composed largely of metasedimentary rocks of turbiditic affinity, with very few mafic volcanic flows. Rock fabrics trend northeast and dip moderately (50° to 70°) toward the southeast. Metamorphic mineral assemblages and rock fabrics in this area indicate that this domain underwent extreme compressive deformation, largely unaccompanied by lateral shearing (Stacey and Barker, 2013). This is evidenced by the extreme flattening fabric visible in the rocks, as well as a general lack of lineations which would be apparent if strike-slip shearing had been a significant contributor to deformation in this zone. The presence of undeformed leucosomatic

partial melt material parallel to the flattening fabric is further evidence that lateral shearing did not occur during peak metamorphism in this domain (Stacey and Barker, 2013).

Within each of these structural domains, several orders of faults and shear zones are present, ranging from 1<sup>st</sup> order domain bounding faults to 4<sup>th</sup> and even 5<sup>th</sup> order structures (Stacey and Barker, 2013). Most higher-order structures can be deduced from geophysics and air photo lineaments, but many of the smaller lower-order faults are only observed in drill core. 1st and 2nd order faults may have originated in the Archean, and in most cases were reactivated as strikeslip faults during Proterozoic deformation. Late brittle faults (E-W to NW-SE-trending) transect and locally offset domain boundaries. Uranium mineralization can be correlated with fault zones at all scales, excepting the latest episodes of east-west brittle faulting. In the central/western gneissic belt, uranium mineralization seems to be associated with NE- to E-W-trending 1<sup>st</sup> to 2<sup>nd</sup> order faults. Within the Volcanic Block, uranium mineralization is exemplified by the Lac 50, Blaze and Joule (J4, Ray) deposits, which seem to be contained in 2<sup>nd</sup> to possibly 3<sup>rd</sup> order faults and breccia zones. In the southeastern compressive zone, uranium mineralization seems to be contained in narrow northeast-trending veins, which are parallel to 1<sup>st</sup> order fault structures and S1 foliations in this domain. However, the distribution of uranium mineralization in the Nine Iron area suggests that 3<sup>rd</sup> order faults at high angles to S1 may be a focus mechanism for mineralizing fluids, which then diffused into structures parallel to the foliation (Stacey and Barker, 2013).

A detailed overview of the geology and main lithologies encountered within the Angilak Project are provided in detail in Dufresne and Sim (2011) and Stacey and Barker (2012; 2013). The critical lithologies are summarized below with much of the information taken from Stacey and Barker (2012; 2013).

### 7.2.1 Archean Basement

The Archean component of the Property is dominated by felsic to intermediate gneiss, granitic to tonalitic intrusive rocks and gabbros, which extend northeast-southwest across the property. In general, basement rocks underlying the northwestern half of the property comprise granite and granitic gneisses, while those underlying the southeast half of the property are more granodioritic to tonalitic in composition and tend to be more massive rather than gneissic. The more massive granitoid rocks are interpreted to be younger than the gneisses, and have been assigned by Peterson (1994, 1996) to the ca. 2.6 Ga Snow Island Intrusive Suite. Migmatitic textures have been observed in basement gneisses at several locations on the property, indicating that metamorphic grades were locally high enough to induce at least some degree of partial melting.

Archean volcanic and metasedimentary rocks assigned to the Henik Group (Eade, 1986) are found in the eastern part of the property, where they underlie much of the northern part of the Angikuni Sub-basin. An Archean age of 2485  $\pm$  62 Ma (K-Ar, hornblende) is indicated for the Henik Group in this area (Miller et al, 1986). Known collectively as the "Volcanic Block" or the "Yathkyed-Angikuni Greenstone Belt," the lithological package extends southwestward beneath the sub-basin to Angikuni Lake. Immediately north of the central part of the Angikuni Sub-basin, mafic volcanic rocks are metamorphosed to amphibolite facies, while the main part of the Volcanic Block northeast of the sub-basin does not exceed greenschist facies metamorphism. Primary volcanic textures such as pillows, breccias, and lapilli are preserved at greenschist and lower amphibolite grades but are largely destroyed where metamorphic grades are higher and structural deformation is more severe. Deformation is strongest along the northwest and southeast margins of the greenstone belt, where mylonite zones separate metavolcanic rocks from adjacent gneissic and granitic basement. The Henik Group in the project area is composed primarily of massive to pillowed basalt and subvolcanic gabbro, with local thin pyroclastic horizons comprising felsic to intermediate to mafic tuff. Fragmental, ashy, and water-lain tuffs can be interpreted where primary rock textures are preserved in outcrop and drill core. Basaltic sequences can be several tens to hundreds of metres thick, while tuff layers rarely exceed ten metres in thickness. All layers are transposed parallel to the steep regional foliation; possibly as a result of isoclinal folding associated with Archean tectonics and the Proterozoic Hudsonian Orogeny. Mineralogy in the basalt comprises chlorite + actinolite ± hornblende assemblages; garnet is locally found adjacent to quartz monzonitic dykes. The general absence of garnet and the prevalence of chlorite-actinolite assemblages indicate that metamorphic conditions less than middle amphibolite facies were predominant. Sheared metasedimentary rocks, including psammite-semipelite, wacke, and iron-formation, are observed along the southeast flank of the Volcanic Block.

In the eastern part of the Angilak property, the east-southeast structural orientation of the Volcanic Block differs greatly from the regional northeast-southwest trend exhibited by most basement units. The exact mechanism by which the Volcanic Block has rotated is poorly understood.

### 7.2.2 Hudsonian Granitoid Intrusions

Though Hudsonian-aged intrusions are found throughout the Western Churchill Province, large expanses of this granite are not particularly common on the Angilak Project. However, the faulted northern boundary of the Volcanic Block and several large northeast-trending fault systems to the west seem to have been loci for sheet-like intrusion of pink, equigranular granite and rare pegmatite interpreted as being related to Hudsonian plutonism. Rather than forming discrete plutons, this granite has only been observed as dyke-like bodies, sometimes intruded in a stockwork fashion in proximity to major faults.

### 7.2.3 Helikian Paleosurface Breccia (Unconformity Surface)

The term Helikian Paleosurface Breccia ("Hpb") was coined by Urangesellschaft personnel in the mid 1970's to describe the strongly paleo weathered angular "lag conglomerate" locally exposed at the base of the Dubawnt Unconformity. The term is descriptive and highly appropriate, due to the fact that the horizon was developed in situ from the weathering of rocks directly below the unconformity. The Hpb has been observed on top of both mafic volcanic rocks of the Henik Group, and rare occurrences on top of basement gneisses are noted further to the west. Clast composition of the Hpb is highly dependent on the underlying lithology. A common feature of the Hpb, which is independent of clast composition, is a sandy matrix rich in iron carbonate and hematite. The matrix presumably formed during paleoweathering and is of a composition and texture which is unique to the Hpb. The carbonate-rich matrix may represent caliche-type evaporative cement and could be an indication of weathering in an arid environment.

The Paleosurface Breccia tends to have higher background radioactivity than the underlying basement (500 to 1000 counts per second) but is essentially unmineralized. Elevated background radioactivity of the Hpb is interpreted to be the result of uraniferous fluids migrating along the unconformity surface and precipitating minor amounts of uranium around clasts, in fractures, and in the matrix of the Hpb. This unit is not considered to be prospective for significant uranium mineralization.

The unit provides direct evidence of paleoweathering prior to deposition of the Dubawnt Supergroup and serves as a recognizable marker horizon within the overall stratigraphic sequence. In contrast to the Sub-Athabasca Unconformity in Saskatchewan, the Angilak Property did not undergo deep regolith weathering.

### 7.2.4 Baker Lake Group (Dubawnt Supergroup)

The Baker Lake Group is represented in the project area by the parallel Yathkyed (north) and Angikuni (south) Sub-basins, which extend northeast-southwest across the property. Though regional maps by Eade (1986), Peterson (1994), and Tella et al. (2007) all show the sub-basins to be comprised completely of volcanic rocks of the Christopher Island Formation (CIF), more detailed mapping by Miller (1993), Company personnel, and other exploration companies has proven that conglomerate and sandstone of the South Channel and Kazan Formations are present as well. The Late Proterozoic Thelon Formation is not found in the project area. Historically, the Helikian Paleosurface Breccia and the coarse-grained conglomeratic units directly above the unconformity are grouped with the South Channel Formation, while overlying finer-grained sandstone, siltstone, and mudstone units define the Kazan Formation. For the purposes of this report, the Paleosurface Breccia is defined as a separate entity, rather than being lumped with the South Channel Formation.

### 7.2.5 South Channel Formation (SCF)

The South Channel Formation (SCF) is the lowermost unit of the Baker Lake Group and directly overlies the Helikian Paleosurface Breccia. The transition from Hpb to South Channel rocks is quite sharp, though coarse clasts of re-sedimented Hpb can be found in the lowermost levels of the SCF. South Channel sediments mainly comprise poorly sorted, coarse to very coarse fluvial and fanglomerate-type conglomerates which display a wide variety of clast compositions. Clasts are rounded to subrounded granitic and gneissic rocks which have been transported a significant distance from their source. Rounded white vein quartz pebbles are also common. In proximity to Archean greenstone basement, a significant portion of the clasts (20 to 50%) comprise angular, hematite-altered volcanics, which suggests both distal and proximal sources of sedimentation for the SCF. Trachytic clasts are also observed in some areas, indicating that at least some local sedimentation was derived from the Christopher Island Formation. The matrix of the basal conglomerates is composed of angular, coarse to very coarse feldspathic sand and gravel containing up to 50% quartz grains. In other areas the matrix is mainly feldspathic.

The SCF varies between several metres and several tens of metres in thickness, and fines upwards into coarse pebbly sandstones with conglomeratic lenses or channels. Local siltstone and mudstone layers sandwiched between coarse-grained conglomerates are indications that parts of the SCF were deposited in a quiescent lacustrine to deltaic environment. The coarsergrained conglomerate was presumably laid down in a fluvial setting, suggesting subdued paleotopography crossed by relatively high-energy braided streams.

The boundary between the SCF and the overlying Kazan Formation is conformable and gradational and is typically defined where coarse conglomerate and poorly-sorted coarse sandstone give way to well sorted, fine-grained arkosic sandstone, siltstone, and mudstone.

### 7.2.6 Kazan Formation (KF)

The Kazan Formation (KF) unit is composed primarily of fine to medium-grained, moderately to well sorted, pink to maroon sandstone, siltstone, and mudstone. Vein quartz pebbles persist in coarser pebbly sandstone layers, in contrast to quartz-poor Christopher Island Formation sediments. Siltstone layers commonly contain mud cracks, indicating periods of subaerial desiccation. Local finely interbedded sandstone, siltstone, and mudstone varves are indications of seasonally-variable sedimentation in lacustrine settings.

Kazan sediments are flat lying to gently dipping (typically less than 5°), though rare fault blocks can be tilted as much as 30° and local warping has been observed in immediate proximity to fault

zones. Bedding is typically massive, and channel-fill sedimentary structures are noted locally. Fault-related deformation within the Kazan Formation seems to have occurred almost entirely within the brittle strain field, leading to widespread fracturing and local brecciation around faults but almost no folding. In some cases, faults cutting through the Baker Lake Group may be related to the reactivation of pre-existing basement faults and as such present a highly attractive target for unconformity-style uranium mineralization.

Radiometrically, the Kazan Formation exhibits higher background radioactivity than the underlying basement rocks. Background levels of 250 to 350 counts per second (CPS) are the norm, though individual hematitic fractures and bedding planes can run as high as several thousand CPS. Hematite-altered radioactive fractures may have formed during the mobilization of uranium through the sedimentary package, whereas the origin of radioactive beds is more ambiguous. These beds may have been mineralized by uraniferous fluids percolating laterally along the unconformity (epigenetic) or through syngenetic deposition from uranium-rich source rocks. The widespread presence of red-bed-type copper mineralization may provide an indication that some uranium mineralization is epigenetic and possibly related to the fluid event(s) that deposited copper-bearing minerals in the sandstones.

### 7.2.7 Christopher Island Formation

The Christopher Island Formation ("CIF") is composed primarily of trachytic to andesitic volcanic flows, pyroclastic fragmental volcanics and agglomerate, syenitic intrusions and volcaniclastic sedimentary rocks. Though the CIF largely overlies the Kazan Formation, significant overlaps of the depositional units exist, and in some areas CIF flows and sediments are complexly interfingered with Kazan-type sediments. A criterion for identification of parent lithology is the presence or absence of white vein quartz pebbles: quartz pebbles are not found in the CIF but may be present in rocks of Kazan parentage. In the absence of quartz pebbles, it can be very difficult to assign a specific parentage to sedimentary rocks which contain trachytic clasts; however, Kazan sediments typically contain at least some quartz in the matrix, while CIF sediments are primarily feldspathic. Trachytic agglomerates can be coarse to very coarse grained and in some cases clasts can exceed one m in diameter. Clasts are angular and supported by a trachytic microcrystalline to aphanitic groundmass. Typical CIF agglomerates have clast sizes on the order of 20 to 30 centimetres, composed primarily of trachyte with some andesitic clasts. Coarser-grained agglomerates may be associated with vent-proximal volcanic facies, though the relationship between texture and vent proximity is poorly understood.

In contrast to the volcaniclastic sediments and agglomerates, volcanic flows are easily identified by their composition and texture. Trachytes are pink to red and tan coloured and andesites are purplish-brown to grey. Both are fine-grained and variably porphyritic: trachytes tend to contain K-feldspar phenocrysts and local biotite phenocrysts, whereas andesites are primarily biotite-phyric. Vesicular and/or amygdaloidal textures are commonly observed in andesitic rocks. Coarse K-feldspar-phyric syenite porphyry dykes are found throughout the property and are especially common in and around fault zones. Several U-Cu-Ag-Au showings may be hosted by or partially derived from trachytic bodies intruding CIF volcanics, CIF/Kazan sediments and gneissic basement, respectively. CIF dykes generally seem to be less than a few metres in width but can be much wider in places.

Uranium mineralization within the CIF has so far been limited to hematitic fracture fillings and occasional high-grade pitchblende  $\pm$  hematite  $\pm$  Cu-sulphide veins. Radiometrically, the CIF has the highest background signature of any rocks in the study area, commonly averaging 350 to 450 CPS in outcrop. Most of this background radioactivity is related to the highly potassic composition

of the CIF, though background levels of uranium are slightly higher in the CIF than in the Kazan and South Channel Formations. Though the hydrothermal circulation system in the area is not fully understood, CIF volcanism may have been a significant contributor of fluid to the system and may also have been a source of uranium for remobilization to other areas on the property.

## 7.2.8 Syenite, Lamprophyre and Carbonatite (CIF)

Syenitic bodies throughout the property constitute the feeder system for Christopher Island volcanism. Dykes and stocks of syenitic composition are concentrated around major fault zones. Two conspicuously large intrusions occur on the northern and southern boundaries of the property and are interpreted as large, possibly zoned, alkalic complexes.

Lamprophyre dykes and stocks are common throughout the property and are related to CIF volcanism. The dykes are a distinctive brown colour and contain fine to coarse biotite and hornblende phenocrysts in a quartz-free, massive, fine-grained feldspathic matrix. Lamprophyric dykes were presumably emplaced during regional crustal extension and trend northeast-southwest throughout the property. To date, no significant uranium mineralization has been observed in proximity to lamprophyre dykes, though occasional radioactive, hematite-altered hairline fractures have been noted.

## 7.3 Mineralization

The Baker sequence records the initial and principal phases of development of the Baker Lake basin (Rainbird et al., 2003). Aspler et al. (2004) expanded on this idea and proposed that basin formation by strike-slip cannot be ruled out; however, a more appropriate model is likely regional uplift and extension within the west portion of the Western Churchill province due to terminal collision and post-collision convergence in the Trans-Hudson orogen. The base of the Baker Lake Group consists of coarse alluvial red beds from the South Channel Formation that are overlain by finer grained distal equivalents from the Kazan Formation (Donaldson, 1965; Rainbird et al., 2003). In the Angikuni sub-basin, the Kazan Formation is equivalent to a similar sedimentary succession called the Angikuni Formation (Blake, 1980). The Christopher Island Formation (CIF) is a suite of ultra-potassic lava flows and volcaniclastic deposits that have been found intercalated with overlying the strata of the South Channel and Angikuni Formations (Eade, 1986; Rainbird et al., 2003). Aspler et al. (2004) interpreted the conformable contact with the CIF and lack of volcanic detritus in the section to indicate that the Angikuni Formation was deposited between and during periods of active volcanism. SHRIMP U-Pb geochronological studies have yielded age groupings at 2.7 and 2.6 Ga for the 1.84 – 1.79 Ga Baker sequence (Rainbird and Davis, 2007). These ages are consistent with a proximal uplands source, and have been correlated to the northwestern Hearne domain (Rainbird and Davis, 2007)

Numerous mineral showings were discovered by various exploration companies during the late 1970's and early 1980's. Most of the showings occur close to the northern boundary of the Angikuni sub-basin, within both Archean basement and later basin-fill sedimentary and volcaniclastic material. A partial reason for the distribution of known mineralization could be that the most intense exploration effort was focused in this area, and it is likely the area of the unconformity with the most amount of outcrop. The important regional U-Cu-Au-Ag showings are discussed and located on maps and summarized in the history section above and are discussed in detail in Setterfield (2007), Dufresne (2008) and Dufresne and Sim (2011).

The Lac 50 Uranium Deposit is structurally and stratigraphically controlled and is hosted within a graphite-chlorite tuffaceous metasediment interlayered within the Archean basement metavolcanics. Mineralization consists of disseminated pitchblende with sulphides and as

fracture-controlled, brecciated hematite-pitchblende-quartz-carbonate veins within the tuff. Uranium and sulphides occur in widths up to 16.4 metres within a sheared tuffaceous host unit up to 17.4 metres wide. The deposit strikes southeast at 110 to 120° and dips south, variably between -45 and -80°. Mineralization occurs as southwest plunging shoots within the plane of the tuff unit and has been traced by drilling to a vertical depth of approximately 400 metres and along a strike length of 3.5 kilometres. Lac 50 Deposit is described as a basement hosted, vein-hydrothermal type, unconformity associated uranium deposit.

Mineralization within the Lac 50 Deposit occurs within or very proximal to graphite and sulphide bearing horizons. Generally, a number of sulphides are present within these horizons and may accompany uranium mineralization including pyrite, chalcopyrite, molybdenite, galena and sphalerite. Uranium mineralization generally consists of pitchblende (uraninite) and coffinite along with minor amounts of uranium oxide ( $U_3O_7$ ), brannerite, uranophane, potassium uranyl fluoride hydrate [ $K_3(UO_2)_2F_7\cdot 2H_2O$ ] and richetite (PbU<sub>4</sub>O<sub>13</sub>·4H<sub>2</sub>O) based on mineralogical work conducted by Morton and Grammatikopoulos (2011).

Mineralization at the Lac 50 Deposit and proximal showings can be divided into four types: (1) disseminated pitchblende with base metals in intensely fractured carbonaceous-sulphide-chert exhalite and adjacent tuffaceous metasediments; (2) carbonate + pitchblende + hematite  $\pm$  chlorite breccias, in which pitchblende aggregates on clast and breccia margins; (3) discrete pitchblende veins that cut across exhalite tuff metasediments and; (4) quartz + carbonate + sulphides and pitchblende gash veins. The discrete pitchblende veins tend to be found throughout the hanging wall basalt and tuffs horizons. These "gash veins" range in size from a few millimetres to up to a metre across and can be almost barren to hosting several percent U<sub>3</sub>O<sub>8</sub>. Some of the largest gash veins can be correlated between drillholes on the same drillhole fence.

The elemental signature of the Lac 50 Deposit is U+Ag+Mo+Cu+Pb+Zn. The mineralization is accompanied by complex alteration involving hematization, chloritization, carbonatization, silicification and albitization. The deposit is described as a vein-type hydrothermal derived deposit which resembles the classical uranium bearing veins of the Beaverlodge District in Saskatchewan (Miller et al., 1986; Setterfield, 2007). Banerjee et al. (2010) and Bridge et al. (2010), indicate that the alteration associated with the Lac 50 Deposit is low temperature hydrothermal and consists of widespread pervasive hematite - chlorite alteration in and around the deposit along with carbonate in and around veins within the main zone. Bridge et al. (2011) have dated the main Lac 50 uranium mineralization at  $1,828 \pm 30$  Ma with slight resetting at  $1,437 \pm 31$  Ma.

# 8 DEPOSIT TYPES

The following is reproduced, with minor formatting changes, from a previous Technical Report completed on the Property by Dufresne et al. (2013) and summarizes the most likely mineral deposit types that might be encountered on the Angilak Project. These interpretations are based on examining historical assessment reports and field visits to key outcrops and mineral occurrences. The region is host to numerous polymetallic showings that contain variable amounts of  $U \pm Cu \pm Ag \pm Au$ , which were discovered in the late 1970's but have received minimal attention since that time. The most important deposit type discovered to date and host to the Lac 50 Deposit is the Beaverlodge-type vein or structure hosted uranium deposit.

## 8.1 Beaverlodge-Type Uranium Deposits

The primary target of exploration on the Angilak Project is Precambrian Beaverlodge-type vein or structure hosted uranium deposits. The past-producing Beaverlodge uranium district is located in northern Saskatchewan and produced over 68 million pounds of uranium up until production ceased in 1982 (Beck, 1986). These types of deposits are commonly referred to as "vein-type" hydrothermal uranium deposits due to mineralization being hosted in near-vertical vein-like structures associated with faults and shear zones. Uranium ore minerals are typically pitchblende and uraninite and grades are typically on the order of 0.1 to  $0.5\% U_3O_8$ . Beaverlodge deposits were relatively small and low grade compared to the more prolific "unconformity-related" uranium deposits found in the Athabasca and Thelon Basins. For example, published resource estimates on the Kiggavik Deposit near Baker Lake are approximately 127.3 million pounds of  $U_3O_8$  (Areva Resources Canada Inc., 2009).

A number of exploration companies and government scientists have compared the uranium occurrences in the Baker Lake and Angikuni Basins to the Beaverlodge examples and suggested they formed in similar environments. Al Miller of the Geological Survey of Canada described several uranium showings from IOL Parcel RI30-001 in a paper published in 1986, including the Lac 50 Uranium Deposit (Miller at al., 1986). Similarities between the classic Beaverlodge occurrences and Lac 50 include: 1) narrow, pod-like uranium shoots hosted in discrete fault zones, 2) age of host rocks and hydrothermal alteration assemblages, and 3) grade and distribution of uranium minerals. The overall characteristics of the Lac 50 Uranium Deposit appear similar to the Beaverlodge examples, however, when considered in a regional context the Lac 50 Deposit may represent just one of many mineralization styles in the area whose formation can be attributed to magmatic processes associated with iron oxide – copper – gold deposits, or a variant on high grade basement hosted deposits, similar to Eagle Point in the Athabasca region of Saskatchewan.

# 8.2 Iron Oxide Copper Gold (IOCG) Deposits

Historical uranium exploration in the Project area occurred prior to the development of IOCG deposit models. The best-known example of this class of ore deposit is the prolific Olympic Dam poly-metallic deposit located in Australia and discovered by Western Mining Corporation (WMC). The regional geology of the Yathkyed area shares many geological similarities with known IOCG districts, including: age of host rocks, the presence of an extensional tectonic regime that produced continental-derived mafic and felsic rocks, ultrapotassic magmatism and craton-scale structural breaks. WMC recognized these similarities and conducted an exploration program 10 kilometres south of IOL Parcel RI30-001 in 1995. However, WMC focused their efforts within the Angikuni basin itself and had purposely avoided uranium occurrences due to economic and political conditions at that time. Most if not all of these regional characteristics have been recognized in the Angilak Project as outlined by Dufresne (2008). On a deposit scale there are

many distinctive features of ICOG deposits however, there can be extreme variability in the presence or absence of key characteristics.

In 2007, Kaminak personnel conducted a one-week reconnaissance field program which covered RI30-001 and Archean basement rocks north and east of IOL Parcel RI30-001. At the outcrop scale, Kaminak recognized a number of key textural features of the IOCG deposit class: including the presence of brecciated and silicified felsic intrusive rocks displaying strong hematite and carbonate alteration. Overall, metal content of the mineralized zones (Au-Cu-U-Ag) and the composition of alteration assemblages (Si-Na-K-Ba-P) are consistent with accepted IOCG characteristics.

## 8.3 Unconformity-Related Uranium Deposits

The concentration of showings proximal to the unconformity between basement and the (Mid-Proterozoic) Angikuni sub-basin would suggest that an unconformity-related uranium deposit model (Jefferson et al., 2007) is applicable to this area. Indeed, this was the model used by previous exploration companies in the late 1970's, and much of the mineralization noted to date, including the Lac 50 Uranium Deposit, probably relates to this model. However, many of the showings, particularly within the basin, have significant amounts of Cu and Ag. Miller (1993) suggested a possible red bed Cu mineralization model to explain this mineralization.

Unconformity-related uranium deposits are characterized by small tonnage but very high-grade Uranium grades (sometimes over  $25\% U_3O_8$ ). Some of the world's most prolific uranium deposits fall within this category of mineral deposits and include the Athabasca and Thelon Basins of northern Canada. A key factor in the formation of these deposits is the presence of the unconformity that separates Mid-Proterozoic clastic sandstone rocks from underlying Lower-Proterozoic graphitic pelites and associated Proterozoic "basement" rocks.

## 8.4 Unconformity-Related Banded Iron Formation Uranium Deposits

Since 2011, surface exploration work recognized a southwest uranium mineralized trend located about 10 kilometres southeast of the Lac 50 Deposit, referred to as the Nine Iron trend and formerly known as the "BIF Zone" (ValOre News Release, 2012). Unlike the Volcanic Block, the package of mafic igneous rocks hosting the Lac 50 Deposit, the Nine Iron Zone is predominantly hosted by intermediate to felsic tuff and volcaniclastic metasedimentary rock, with subordinate mafic volcanic flows (Stacey and Barker, 2012 and 2013). The Nine Iron trend is outlined by a distinct, 9-kilometre-long magnetic geophysical anomaly extending below the contact or 'unconformity' with the Angikuni sub-basin.

The uranium mineralization at Nine Iron trend is unconformity-related and associated with a banded iron formation (BIF). The emplacement of mineralization is structurally controlled and related to competency contrasts between the sedimentary and igneous layers. Uranium mineralization along the Nine Iron trend occurs over a 3 kilometre long reactivated shear zone on the margin of the Yathkyed Greenstone Belt and within a package of mylonitized iron formation and tuffaceous volcano-sedimentary rock (Stacey and Barker, 2012 and 2013; ValOre News Release, 2012). Five surface samples have returned grades between 15% and  $30.3\% U_3O_8$ . In keeping with the geochemical signature of uraniferous veins throughout the Property, strong uranium mineralization in the Nine Iron Zone is accompanied by significant Cu, Zn, Pb and Ag values (Stacey and Barker, 2012 and 2013).

## 8.5 Carbonatite-Related Deposits

In 2011, ValOre prospectors discovered a number of carbonatite occurrences in outcrop and float on the Angilak Project. Unlike hydrothermal carbonate veins, carbonatite bodies are emplaced in a molten or semi-molten state and have mineral assemblages that reflect their magmatic origin. Mineralogy can be highly variable, but is dominated by various carbonate minerals (calcite, ankerite, magnesite, etc.) with subordinate silicate minerals. Carbonatite bodies are typically associated with zoned alkalic intrusive complexes, though they are also found as veins, dykes, or small isolated plugs. Carbonatite is a very highly fractionated, late-stage magmatic phase, and as such tends to become enriched in incompatible elements. Notable carbonatite occurrences with economic concentrations of Rare Earth Elements (REEs), phosphates, copper, iron, precious metals, and/or other commodities include: Oka, Québec; Mountain Pass, California; Jacupiranga, Brazil; and Palabora, South Africa (Verwoerd, 1986; Bell, 1998). In Canada, carbonatites are relatively common and have been mapped throughout the Canadian Shield and British Columbia.

The presence of carbonatite on the Angilak Project is not unusual, considering the enormous volume of alkalic magma that was produced during the Christopher Island volcanic event. In outcrop, carbonatite is spatially associated with subvolcanic syenite and lamprophyre and was probably emplaced in the waning stages of CIF volcanism. At this early stage of exploration, the size, distribution, and mineral tenor of carbonatites on the Property are poorly understood; however, the richness of some carbonatite deposits elsewhere in the world makes the Angilak occurrences an attractive exploration target. The association of carbonatite with zoned alkalic complexes is favourable from a geophysical standpoint, as they typically form concentric magnetic anomalies which are easily targeted for prospecting and drilling.

## 8.6 Red Bed Copper Deposits

Miller (1993) described a number of copper occurrences in the Angikuni Sub-basin which he attributed to red bed copper mineralization. These showings contain disseminated, stratiform and stratabound copper sulphide at or near the contact between the uppermost Kazan and lowermost Christopher Island Formations. Visually, copper-bearing strata are easily identified by their bleached grey to light pink colour, which contrasts sharply with orange-pink to maroon colours in unmineralized rock. This is characteristic of redox alteration: minerals associated with bleaching include chlorite, carbonate, and rare albite, formed when oxidized strata were invaded by copperbearing reducing fluids. Elevated radioactivity locally accompanies copper mineralization, but most of these occurrences are non-radioactive, and spatially associated uranium may have formed through different processes than that which deposited copper in the rocks. This idea is reinforced by the fact that uranium tends to be concentrated in discontinuous fractures or veinlets, while copper sulphides are disseminated. If uranium and copper were deposited during the same fluid event, the uranium should be stratiform/stratabound and disseminated, rather than concentrated in discrete veinlets. However, the mechanisms of uranium emplacement in the sandstone packages are not well understood, and contemporaneous copper and uranium mineralization could have occurred on a local scale.

Though red bed copper occurrences on the Property are interesting and provide insight into the fluid history of the region, they are not considered a high-priority exploration target at this time. This may change if evidence for large-tonnage deposits is uncovered, but the showings described by Miller (1993) have so far proven to be of limited areal extent and the potential for large red bed copper occurrences is considered to be low.

### 8.7 Archean Mesothermal Gold and VMS Deposits

The potential for Archean mesothermal gold mineralization on the Property is considered low to moderate. The Kivalliq region is host to several significant gold deposits of this type, most notably Meadowbank and Meliadine. Portions of the Property are underlain by Archean pillowed mafic volcanic rocks that Eade (1986) has correlated with the Archean Henik Group. Similar rocks located 60 kilometres to the southeast are host to high grade (>10 g/t Au) surface occurrences known as the "SY" group of showings. Nonetheless, no significant shear zones or domains of high strain have been documented on the Property to date, and the observed mafic volcanic rocks are essentially devoid of important alteration minerals that are indicative of Archean mesothermal gold deposits (i.e., sulphides, quartz veining and carbonate). For these reasons the mesothermal gold potential is downgraded, however the presence of Archean metavolcanic sequences suggests gold may be present as a by-product in other deposit types.

As with mesothermal gold, the potential for volcanogenic massive sulphide (VMS) mineralization is considered low. These deposits are typically rich in copper, zinc and lead and are associated with bi-modal (mafic to felsic) volcanic centers. Important examples of this deposit type in Nunavut are the High Lake and Izok Lake deposits located in the central Kitikmeot. Occurrences of these types of deposits in the Kivalliq district are rare but small occurrences have been documented in the Kaminak Lake area approximately 150 kilometres east of the Property. However, no VMS-like known occurrences are known in the Property region and as a result the potential for this style of mineral deposit is considered low.

# 9 EXPLORATION

Exploration activities carried out on the Angilak Project by ATHA in 2024 includes Mobile MagnetoTellurics (MobileMT), bedrock mapping and a soil sampling survey. Drilling completed in 2024 is summarized in Section 10, work prior to 2024 exploration activities is summarized in Section 6.

## 9.1 Airborne Geophysical Surveys

ATHA conducted a Mobile MagnetoTellurics (MobileMT) survey between August 26<sup>th</sup> and September 27<sup>th</sup>, 2024. A total of 5,815 line-kilometres were flown by Expert Geophysics Limited at 150 metre line spacing and a tie line spacing of 1,500 metres (Figure 9-1). Terrain clearance for the helicopter and instrumentation was 150 to 160 metres. The data recording rate of ten times per second allows for magnetotelluric, radar, magnetic and GPS measurements to be acquired approximately every 2.2 meters along the survey lines.. At the time of this report, final processed data from the 2024 MobileMT survey have not been recieved, therefore preliminary interpretation and recommendations are pending an internal review of the final dataset.



## 9.2 Geochemical Surveys

A helicopter-supported supplemental soil survey was conducted from August 2<sup>nd</sup> to August 25<sup>th</sup>, 2024, focused on completing gaps along the Lac 50 trend not captured in previous soil surveys executed by ValOre from 2008 to 2022 (

Figure 9-2). The geochemical survey anomalies coincident with known Very Low Frequency Electromagnetic (VLF) anomalies may highlight and focus future exploration targeting. A total of 3,584 sites were visited and a total of 3,291 samples of the A horizon were collected for analysis, including 130 duplicate samples; 293 sites did not yield any soil samples due to the presence of bedrock outcrop. At the time of this report, analytical results for the soil samples are pending final processing by the Saskatchewan Research Council (SRC) Geoanalytical Laboratory.



#### Figure 9-2: Angilak Property Soil Survey Grid Coverage

### 9.3 Geological Surveys

Concurrent with the soil sampling program, a helicopter-supported bedrock mapping program was also completed (Figure 9-3). The program aimed to define structures of interest, identify alteration zones, and verify radiometric anomalies identified in the 2023 airborne radiometric survey (low-level, tight drape, high resolution radiometric and aeromagnetic airborne survey was flown by Inertial, a division of Special Projects Inc. (SPI) out of Calgary, AB on behalf of LUR, from April 28 to May 8, 2023). Five property zones were a focus for the 2024 program:

- Mushroom Lake (ML)
- J4/Ray
- Hot
- Pulse

Nine Iron



Figure 9-3: 2024 Bedrock Mapping Scintillometer Results (1000 to 65,535 cps)

Bedrock exposure was poor in most areas with the exception the ML Zone, which became the primary focus of the program. One day of mapping was allocated to the Nine Iron area. No rock samples were collected during this program.

The results of the ground program show that the fault system observed in the ML area aligns well with a strike-slip fault regime, consistent with the Riedel shear model. This likely has a significant influence on the control of uranium mineralization in this immediate area and the Lac 50 Deposit. High radioactive anomalies associated with pitchblende-bearing quartz-carbonate breccias are spatially correlated with the main ESE-WNW fault zones, especially where they intersect with northeast trending faults.

# 9.4 Exploration Target Model

UMR provided ranges for potential uranium quantity and grade as a target for further exploration on the Lac 50 Deposit. The ranges were derived from a block model approach using interpreted vein wireframes, drill core assays, grade interpolation via Ordinary Kriging, and applied uncertainty bandwidths. The stated potential quantity and grade is conceptual in nature, and there has not been sufficient exploration to define a mineral resource, and it is uncertain if further exploration will result in the target being delineated as a mineral resource. The drill hole database provided to UMR contains reverse circulation and core drilling. The reverse circulation drilling results were deemed to be imprecise relative to the validated core drilling results, and, thus, the reverse circulation drilling was not considered in the exploration target model. A total of 615 drill holes were considered for the exploration model, representing 105,015 m of drilling and 12,427 assay samples. Of the 615 drill holes, 453 drill holes were used to define the wireframes.

The wireframes were modelled in Sequeent's Leapfrog Geo software (version 2024.1.1) using the assay results and a grade intercept limit equal to or greater than a minimum grade of 0.01 %  $U_3O_8$ , although lower grades were incorporated in places to maintain continuity and represent the structural setting of the mineralized system. Extension distance for the mineralized wireframes was halfway to the next hole, or 200 m in areas of no drilling, representing the potential at the deposit. No minimum thickness was used for the modeling purposes. In total, 34 wireframes were created to represent the Lac 50 Deposit: 14 for Main Zone, 6 for Western Extension, 4 for J4 Zone, 3 for Blaze, 3 for Pulse, 2 for Mushroom Lake, 1 for Hot Zone, and 1 for the Eastern Extension (Figure 9-4 and Figure 9-5).







Figure 9-5: Oblique View (azimuth 30 and plunge of +26) of Wireframes Underlain with Drill Hole Traces

The wireframes were exported from Leapfrog and imported into Maptek's Vulcan software (version 2023.1). In Vulcan, the assays were composited to 4 m lengths within the mineralized boundaries which, in most instances, resulted in the composite representing the entire width of the vein. The composite size was originally selected to reflect the size of the parent block (4 m by

4 m by 4 m), but the resulting composites also largely constrain the numerical modelling to two dimensions. Assays were composited in Vulcan starting at the first mineralized wireframe boundary from the collar and resetting at each new wireframe boundary. Composites less than 50 % of the composite length, which were located at the bottom of the mineralized intercept, were added to the previous composite. Drillhole locations with no or missing values were assigned a value of  $0.0 \ \ensuremath{W} U_3O_8$ .

Where the assay distribution is skewed positively or approaches log-normal, erratic high grade assay values can have a disproportionate effect on the average grade of a deposit. One method of treating these outliers in order to reduce their influence on the average grade is to cut or cap them at a specific grade level. UMR is of the opinion that the influence of high-grade assays must be reduced or controlled. The uncapped composited data within the domains was globally reviewed in probability plots, histograms, and cartesian space for stationarity and outliers (Figure 9-6). Upon review, a capping level of  $5 \% U_3O_8$  was selected for the global distribution, as well as a High Yield Limit (HYL) threshold of  $2.5 \% U_3O_8$  (Figure 9-7). The HYL function restricts the influence of high-grade samples by limiting the size of their respective search ellipses during grade interpolation. In the case of Angilak, the search was restricted to 50% of the search ellipses (or equivalent to the variogram range).





Note: red line denotes proposed capping level.





UMR performed spatial continuity analysis on the capped composite grades from the largest main zone domain. The resulting experimental variogram is relatively unstable, but representative and useable for variogram modelling. The modelling process is visualized in Figure 9-8 and the model is summarized in Table 9-1. Notably, the variogram ranges are larger than those created in the Athabasca Basin, but after review of the continuity, UMR believes these are representative.

Figure 9-8: Main Zone Experimental and Model Variogram



Туре	Туре	Sill	Major	Semi	Minor	Bearing	Plunge	Dip
Main Zone	Nugget	0.1	-	-	-	-	-	-
U₃O <sub>8</sub> %	Spherical	0.9	100	145	65	116	0	-65

Table 9-1: Variogram Model Parameters

A block model was constructed to encompass the wireframes using a parent block of 4 m (strike direction) by 4 m (thickness direction) by 4 m (vertical direction) with 0.5 m by 0.5 m by 1 m subblocks. The parent block size was selected to approximate the size of an underground drift round, and sub-blocks were used to adequately capture the majority of geologic features of the modelled domains. The block model is rotated 15 degrees (absolute bearing of X axis around Z axis) with an origin of 525,424.402 (Easting m), 6,937,840.358 (Northing m), and (383.52 Elevation m). The block model extends 467, 2,565, and 156 parent blocks in the X, Y, and Z directions, respectively.

The grade variable was interpolated within the block model using ordinary kriging in a single pass. The basis of the estimate is the constructed variogram, the capped composites, and the blocks within the hard boundaries of each domain. The orientation of the Main Zone grade variogram model was altered to match the continuity directions of the other domains that did not have sufficient data to construct a variogram. The search orientations were set to mimic the modified orientation of the variogram models. The search ellipse was set to 150 m (strike direction) by 220 m (down-dip direction) by 90 m (thickness), which is a 50% increase from the variogram ranges. The interpolation was restricted to a maximum of 6 samples per interpolation and max of 2 samples per drill hole per interpolation. At least 2 drill holes are needed for interpolation and a maximum of 5 drill holes can be used per interpolation. Blocks that did not meet the search and sample criteria were not interpolated. In the distal part of the wireframes, due to lack of informing samples, there is little smoothing of grades and grades from one block to the next change abruptly producing artificial discontinuities. UMR is of the opinion that this is acceptable for a conceptual exploration target model.

UMR applied an uncertainty bandwidth to define a range for potential uranium using the block model as the midpoint. The well-informed portions of the wireframes with < 50 m drill hole spacing used a bandwidth of  $\pm$  5 % tonnes and  $\pm$  15 % metal content. An uncertainty bandwidth of  $\pm$  10 % tonnes and ± 30 % metal content was used for the lesser informed wireframes with a spacing greater than 50 m. The grade uncertainty was back calculated from the ranges in tonnes and metal content.

The exploration target model is summarized in Table 9-2. The stated potential quantity and grade is conceptual in nature, and there has not been sufficient exploration to define a mineral resource, and it is uncertain if further exploration will result in the target being delineated as a mineral resource.

Table 5-2. Lac 50 Tabulated Exploration Target Model Nanges								
Lac 50 Exploration Target								
Cutoff Tonnes Grade Metal Content								
(% U₃O <sub>8</sub> )	(Mt)	(% U <sub>3</sub> O <sub>8</sub> )	(MLbs U <sub>3</sub> O <sub>8</sub> )					
0.1	7.4 - 9.3	0.37-0.48	60.8-98.2					

Table 9.2: Les 50 Tabulated Exploration Target Medal Banges

Notes:

1. The stated potential quantity and grade is conceptual in nature, and there has not been sufficient exploration to define a mineral resource, and it is uncertain if further exploration will result in the target being delineated as a mineral resource.

2. The ranges were derived from a block model approach using interpreted vein wireframes, drill core assays, grade interpolation via Ordinary Kriging, and applied uncertainty bandwidths.

3. An assumed cut-off of 0.1% U<sub>3</sub>O<sub>8</sub> was used for the tabulation of the exploration target model.

### 10 DRILLING

ATHA conducted a 10,052-metre helicopter-supported diamond drill program between June 4 to August 22, 2024. A total of twenty-five drillholes were completed, not including one lost drillhole. ATHA drillhole targeting focused on expansion of the mineralization footprint of the Lac 50 Deposit and testing of high-priority targets on parallel structures to Lac 50 trend that were previously identified as being prospective to host uranium mineralization. The project objectives are described below:

- To test along strike, down-dip and up-dip, and expand on existing mineralized lenses in the Western Extension, Eastern Extension and Main Zone area;
- To expand down-plunge and along strike of mineralized lenses in the J4 and Ray zone; and
- Test parallel mineralized corridors and VLF anomalies in close proximity to the main Lac 50 trend with limited historical drillholes (i.e. Hot, Pulse and Mushroom Lake Zones).

The project location, target areas, and 2024 drill hole traces are shown in Figure 10-1. Table 10-1 summarizes the drillhole parameters for the 2024 program. Select strip logs from the program are available in Appendix A.



#### Figure 10-1: 2024 Drill Target Area and Historical VLF Survey

	1					lo Botallo			
Hole ID	Zone	Azi (º)	Dip (°)	Easting (m E)	Northing (m N)	Elev (m)	Final Depth (m)	Start Date	End Date
MZ-DD-174	Main Zone	25	-79	518906.8	6939921.1	212.7	600.0	03-Jun	14-Jun
BLZ-DD-034	Blaze	24	-58	516495.6	6940468.9	226.4	390.0	06-Jun	13-Jun
MZ-DD-175	Main Zone	25	-50	518105.2	6940336.7	230.0	471.0	17-Jun	24-Jun
EEX-DD-052	Eastern Extension	25	-70	520313.3	6939521.3	194.9	427.3	17-Jun	24-Jun
J4R-DD-085	J4-Ray	23	-68	522376.8	6938726.7	216.7	490.8	25-Jun	29-Jun
EEX-DD-053	Eastern Extension	23	-65	520222.9	6939569.0	193.1	360.0	25-Jun	28-Jun
WEX-DD-079	Western Extension	25	-55	517815.1	6940690.9	236.1	334.8	29-Jun	05-Jul
J4R-DD-086	J4-Ray	25	-50	522603.5	6938605.8	207.6	468.5	30-Jun	06-Jul
J4R-DD- 087/J4R-DD- 087A	J4-Ray	25	-55	522231.4	6938765.4	217.3	40.9	07-Jul	10-Jul
MZ-DD-176	Main Zone	30	-50	519760.1	6939494.0	196.3	373.8	07-Jul	13-Jul
J4R-DD-088	J4-Ray	25	-55	522212.1	6938776.4	217.0	419.4	10-Jul	12-Jul
PL-DD-030	Pulse Zone	25	-55	519604.9	6940622.6	213.2	360.2	13-Jul	17-Jul
HOT-DD-008	Hot Zone	25	-55	522339.2	6940447.7	184.6	355.8	16-Jul	20-Jul
PL-DD-031	Pulse Zone	30	-55	519286.2	6940859.7	225.3	380.1	17-Jul	22-Jul
J4R-DD-089	J4-Ray	22	-50	522640.9	6938566.4	204.0	502.9	21-Jul	27-Jul
PL-DD-032	Pulse Zone	25	-50	519670.5	6940525.5	212.5	416.0	23-Jul	30-Jul
HOT-DD-009	Hot Zone	30	-50	522570.4	6940589.5	183.8	450.0	28-Jul	03-Aug
PL-DD-033	Pulse Zone	30	-50	519445.8	6940710.4	220.9	392.0	31-Jul	04-Aug
ML-DD-009	ML Zone	25	-50	523760.1	6938816.2	211.4	351.1	04-Aug	08-Aug
J4R-DD-090	J4-Ray	25	-52	521922.6	6938952.3	203.2	395.0	05-Aug	11-Aug
ML-DD-010	ML Zone	25	-50	523873.3	6938704.2	209.4	389.1	09-Aug	12-Aug
HOT-DD-010	Hot Zone	25	-50	522710.6	6940280.4	185.7	452.0	12-Aug	17-Aug
ML-DD-011	ML Zone	25	-50	523594.8	6939040.6	209.8	400.5	13-Aug	17-Aug
HOT-DD-011	Hot Zone	25	-50	523094.6	6940095.4	199.1	400.0	18-Aug	22-Aug
ML-DD-012	ML Zone	25	-50	523426.3	6939165.7	207.9	430.3	18-Aug	22-Aug
				Total Me	ters	10,051.45			

#### Table 10-1: Summary of 2024 Drillhole Details

## Main Zone Drilling

The Lac 50 Main Zone mineralization is structurally and stratigraphically controlled within a sulphidic-chloritic-graphitic tuffaceous metasediment and/or volcaniclastic interlayered within Archean basement metavolcanics, of which the protoliths are typically massive basalt, pillowed basalt and subvolcanic gabbro. This lithostructural characteristics are typical of all deposits and showings in the Lac 50 area. The objective was to evaluate along strike and downdip and expand the footprint of mineralization in the Main Zone area.

Three drillholes were completed in this area: MZ-DD-174, MZ-DD-175 and MZ-DD-176, for a total of 1,444.8 metres (Figure 10-2). Drilling results show narrow intercepts of veined and tuff-associated mineralization extending into the hanging wall and along strike of areas tested in the Main Zone.



MZ-DD-174 tested the down-dip potential of hanging wall mineralization associated with a prominent tuff layer and possible north-east cross-cutting structures found in historical drillholes MZ-DD-159, MZ-DD-161, and MZ-DD-163. The latter which contained several lenses of  $0.04\% - 0.25\% U_3O_8$  associated with the upper tuff layer. MZ-DD-174 intercepted  $0.07\% U_3O_8$  over 0.5 metres from 30.6 metres,  $0.10\% U_3O_8$  over 0.5 metres at 253.3 metres associated with increased fracturing and veining in basalt host rock and  $0.04\% U_3O_8$  over 0.5 metres from 466.6 metres. This is interpreted as resulting from enhanced fracturing caused by a cross-cutting structure.

MZ-DD-175 and MZ-DD-176 tested the western and eastern boundary of the Main Zone respectively. MZ-DD-175 tested down-plunge and to the west of 2023 drillholes MZ-DD-173 and MZ-DD-170. These holes followed up high-grade mineralization in and near the footwall in MZ-DD-170 (up to 2.88% U<sub>3</sub>O<sub>8</sub> over 0.5 metres at 299.1 metres) and structure suggesting influence from the north-east cross-cutting faults. MZ-DD-175 intercepted multiple mineralized lenses with a total composite thickness of 7.4 metres highlighted by intervals of 0.43% U<sub>3</sub>O<sub>8</sub> over 0.5 metres from 372.7 metres. MZ-DD-176 intersected multiple weakly mineralized lenses with a total composite thickness of 6.5 metres highlighted by 0.11% U<sub>3</sub>O<sub>8</sub> over 0.5 metres.
# Blaze Zone

Within the Blaze Zone, mineralization is associated with faults and breccia zones where the dominant northwest mineralization trend is cross-cut by a north-east trending structure. This may be the cause of significant normal faulting and large damage zone around mineralization.

One drillhole, BLZ-DD-034, tested the continuity of the mineralization at depth (Figure 10-3). Two zones of mineralization were intersected with grades of  $0.37\% U_3O_8$  over 2.0 metres from 94.0 metres, including  $0.99\% U_3O_8$  over 0.5 metres from 94.5 metres and  $0.17\% U_3O_8$  over 0.5 metres from 164.0 metres. These intersections were identified as an extension of the main Blaze Zone. The mineralization is hosted within a quartz-carbonate-hematite breccia in the basalt host rock.



# Eastern Extension

The Eastern Extension has similar geological characteristics and mineralization controls to the Main Zone. Mineralization is associated with structural disruption concentrated along tuff horizons cross-cut by more discrete north-east trending faults with associated quartz-carbonate veining and uranium mineralization. The objective of the 2024 drilling was to test the down-dip extension of mineralization at depth outside of the historical mineral resource footprint.

Two drillholes, EEX-DD-052 and EEX-DD-053 for a total of 787.3 metres, targeted down-dip of historical drilling EEX-DD-023 to EEX-DD-030 (Figure 10-4). These drillholes exhibit grade intervals up to 2.66%  $U_3O_8$  over 1.75 metres from 190.7 to 192.4 metres in EEX-DD-026 and 4.34%  $U_3O_8$  over 0.72 metres from 88.8 to 89.5 metres in EEX-DD-030. EEX-DD-052 intercepted

mineralization with 0.25%  $U_3O_8$  over 0.5 metres in a quartz-carbonate-hematite vein at 346 metres. This occurred within a damage zone approaching the brecciated tuff horizon intersected from 365.6 to 366.1 metres. Another mineralized interval was intersected below the tuff unit within a quartz-carbonate-hematite veining with 0.1%  $U_3O_8$  over 1.1 meters.

EEX-DD-053 targeted approximately 110 metres to the southeast and at depth, along strike of the general mineralized trend. Mineralization was intercepted with 0.36%  $U_3O_8$  and 0.27% Cu over 0.5 metres at 111.2 metres associated with a brecciated, hematized quartz-carbonate vein. Additionally, 0.04%  $U_3O_8$  over 1.1 metres was intercepted at 305.3 metres. This mineralization is associated with bleached veins and shears within the tuff unit intersected between 304.6 and 307.9 metres. Overall, mineralization was successfully extended at depth within the Eastern Extension and remain open in all directions.





# Western Extension

One drill hole was completed in the Western Extension and was designed to test for potential mineralized structures within the footwall of the Western Extension (Figure 10-5). WEX-DD-079 was drilled to 334.8 metres and intersected mineralization with  $0.04\% U_3O_8$  over 1.7 metres from 39.8 metres, and  $0.04\% U_3O_8$  over 0.5 metres from 60.6 metres.



#### Figure 10-5: 2024 Western Extension Drilling

## Pulse Zone

Regional cross-cutting structures extend from the Blaze area through the Western Extension and into the Pulse area. VLF and magnetic signatures in the area indicate disrupted lithologies and presumably favorable conditions for structural traps to mineralization. Historical drilling in the Pulse area previously identified several intercepts of uranium mineralization within a fence of the drillholes PL-DD-10 and PL-DD-13 ranging from  $0.17\% U_3O_8$  over 0.4 metres to  $0.63\% U_3O_8$  over 0.63 metres. In another section approximately 50 metres to the east-southeast, historical drillhole PL-DD-16 intersected  $0.4\% U_3O_8$  over 0.92 metres, thus showing continuity between the aforementioned drill sections. Four drillholes were completed in the Pulse area (Figure 10-6) during the 2024 drill campaign, designed to test the continuity of mineralization and potential for a mineralized shoot related to the cross-cutting structures.

PL-DD-031 and PL-DD-033 tested the western and eastern end, respectively, of a structurally bound tuff horizon. PL-DD-031 verified continuity of the mineralized lens to the west intersecting  $1.06 \% U_3O_8$  over 0.5 metres at 215.0 metres. PL-DD-033 intersected several zones with elevated radioactivity above background levels and one mineralized interval from 150.8 to 151.3 metres with 0.03%  $U_3O_8$ .

PL-DD-030 and PL-DD-032 tested the VLF response in an approximate 340 metre gap where both VLF and magnetic data suggest the mineralized horizon is proximal to an off-setting northeast structure. PL-DD-030 intersected mineralization of 0.26%  $U_3O_8$  over 5.0 metres from 262.5 metres, including 1.29 %  $U_3O_8$  over 1.0 metre 262.5 to 263.5 metres, with an additional upper zone of Cu mineralization encountered from 261.0 t 262.5 metres grading 1.0% Cu. Drill

hole PL-DD-032 encountered mineralization of  $0.08\% U_3O_8$  from 28.8 to 29.3 metres, and  $0.12\% U_3O_8$  from 63.3 to 63.8 metres. All mineralization is associated with an increase in fracturing and veining and in general these results suggest potential for multiple mineralized, parallel horizons within the Pulse Zone.



# Mushroom Lake

The ML Zone has seen limited historical drill testing to date, however mineralized intercepts have been recorded in this area up to  $0.45\% U_3O_8$  over 4.35 meters (ML-DD-005). The mineralization is structurally controlled, occurring within sheared graphitic tuffaceous metasediments with carbonate infill interlayered with Archean basement metavolcanics. The protolith of the metavolcanics are predominantly massive basalt. The objective of the 2024 drilling program was to test the continuity of mineralization along strike, following the VLF-EM conductor and stepping east and west from ML-DD-005.

Four drill holes were completed in this area: ML-DD-009, ML-DD-010, ML-DD-011, and ML-DD-012, for a total of 1,571 metres (Figure 10-7). Drilling results show intercepts of mineralized veins and hydrothermal breccias along the Mushroom Lake VLF-EM anomaly and along strike from the mineralization intersected in ML-DD-005.

ML-DD-009 and ML-DD-010 tested the continuity of the mineralized structure eastward from ML-DD-005 and along the VLF-EM conductor. ML-DD-009 intersected mineralized lenses with grades of 0.08%  $U_3O_8$  over 1.0 metre from 22.9 metres, 0.08%  $U_3O_8$  over 0.5 metres from 89.1 metres, 0.14%  $U_3O_8$  over 0.5 metres from 96.1 metres and 0.77%  $U_3O_8$  over 0.5 metres from 102.5

metres. These intervals are within a hydrothermal breccia hosted within the main basalt package. Drill hole ML-DD-010 intersected several zones of elevated radioactivity compared to background, including  $0.01\% U_3O_8$  from 127.1 to 128.1 metres.

ML-DD-011 and ML-DD-012 tested the continuity of the mineralized structure westward from ML-DD-005 and along the VLF-EM conductor. ML-DD-011 intercepted a mineralized interval of 0.05%  $U_3O_8$  over 1.0 metres at 252.1 metres, and ML-DD-012 intercepted a mineralized interval of 0.19%  $U_3O_8$  over 0.5 metres at 190.3 metres. Both mineralized intervals are associated with hydrothermal breccias containing carbonate veins.



# Hot Zone

The Hot zone was drilled by ValOre in 2012, intercepting mineralization of up to  $0.84\% U_3O_8$  over 3.0 metres in historical drill hole HOT-DD-004. Mineralization in this zone is structurally controlled and hosted in veins within Archean basement metavolcanics, with protoliths typically consisting of basalt. Four drill holes were complete within the Hot Zone in 2024: HOT-DD-008, HOT-DD-009, HOT-DD-010, and HOT-DD-011, for a total of 1,657.8 metres (Figure 10-8). These holes targeted the extension of mineralization along the VLF-EM anomaly on strike from historical hole HOT-DD-004.

HOT-DD-008, HOT-DD-010, and HOT-DD-011 tested the continuity of the mineralized structure to the southeast from historical drill hole HOT-DD-005. HOT-DD-008 intercepted a mineralized interval with  $0.4\% U_3O_8$  and 0.22% Cu over 0.5 metres at 123.2 metres,  $0.08\% U_3O_8$  over 0.5

metres from 127.7 metres and  $0.06\% U_3O_8$  over 0.5 metres from 294.6 metres. This mineralized interval is associated with increased veining and hydrothermal breccia. HOT-DD-010 intercepted mineralized lenses with the highest grade of  $0.20\% U_3O_8$  and 0.19% Cu over 0.4 metres at 290.2 metres. HOT-DD-011 intercepted a mineralized lens of  $0.03\% U_3O_8$  over 0.5 metres at 113.3 metres. The mineralized intercepts in both drillholes are associated with hydrothermal breccias within deformed structural intervals similar with features observed in HOT-DD-008.

HOT-DD-009 tested a coincident magnetic tilt with a VLF anomaly following an east-west mineralized structure located at the surface to the north-northeast. Mineralized intervals were intercepted, including  $0.02\% U_3O_8$  over 3.0 meters metres at 171 metres, and  $0.04\% U_3O_8$  over 0.5 metres at 210.7 metres. These intervals are associated with carbonate veins and hydrothermal breccias with hematite alteration halos.



#### Figure 10-8: 2024 Hot Zone Drilling.

#### J4/Ray Zone

Mineralization within the J4/Ray Zone (Figure 10-9) is structurally and lithologically controlled, occurring within sulphidic-graphitic tuffaceous metasediments and/or volcaniclastic rocks interlayered with Archean basement metavolcanics. The protoliths of the metavolcanics are predominantly massive basalt, pillowed basalt, and subvolcanic gabbro. The objective of the 2024 drilling was to test along strike and downdip to expand the footprint of mineralization in the southern part of the J4/Ray area.

Five drill holes were completed in this area: J4R-DD-085, J4R-DD-086, J4R-DD-088, J4R-DD-089, and J4R-DD-090, for a total of 2,276.55 metres. Drill hole J4R-DD-087 was moved and re-

started as J4R-DD-088 due to drilling-related issues with the original setup which necessitated restarting the drill hole.

J4R-DD-085 tested the down-dip continuity of a mineralized northeast trending structure associated with a graphitic-sulphidic tuff layer proximal to historic holes J4R-DD-012 and J4R-DD-060. J4R-DD-085 intersected of  $5.85\% U_3O_8$  over 0.5 metres at 111.8 metres within the upper graphitic tuff layer. A second mineralized horizon intersected mineralization of 0.56%  $U_3O_8$  over 2.0 metres from 428.1 metres, including 1.52%  $U_3O_8$  over 0.5 metres at 429.1 metres. A final mineralized horizon of 0.2%  $U_3O_8$  was intersected from 456.9 to 458.9 metres including 0.63%  $U_3O_8$  over 0.5 from 457.4 metres. Mineralization is associated with a hematized carbonate breccia cross-cutting a graphitic tuff layer.

J4R-DD-086 and J4R-DD-089 tested mineralization continuity up to 115 metres to the southeast from historical drillholes J4R-DD-015 and J4R-DD-073. J4R-DD-015 returned up to 0.29% U<sub>3</sub>O<sub>8</sub> over 0.4 metres at 57.0 metres. Drill hole J4R-DD-086 intersected a mineralized zone grading 0.09% U<sub>3</sub>O<sub>8</sub> from 34.0 to 37.5 metres, including 0.62% U<sub>3</sub>O<sub>8</sub> from 35.5 to 36.0 metres. A second mineralized interval was encountered from 92.5 to 93.0 metres grading 0.15% U<sub>3</sub>O<sub>8</sub>. The main J4 Zone mineralized zone was intersected from 393.0 to 395.5 metres with an average grade of 0.87% U<sub>3</sub>O<sub>8</sub>, including 3.92% U<sub>3</sub>O<sub>8</sub> from 393.5 to 394.0 metres. Drill hole J4R-DD-089 intersected mineralization from 9.2 to 9.7 metres grading 0.13% U<sub>3</sub>O<sub>8</sub>, from 403.6 to 404.4 metres with an average grade of 1.24% U<sub>3</sub>O<sub>8</sub>, from 410.4 to 410.9 metres with a grade of 0.1% U<sub>3</sub>O<sub>8</sub>, and from 422.0 to 422.5 metres with a grade of 0.17% U<sub>3</sub>O<sub>8</sub>.

J4R-DD-088 tested the continuity of the mineralization 80 metres to the west from historical holes J4R-DD-007, J4R-DD-008, J4R-DD-009, and J4R-DD-010. J4R-DD-088 intersected a mineralized interval with  $0.03\% U_3O_8$  over 0.5 metres at 331.0 metres.

J4R-DD-090 tested the continuity of the mineralization in the hanging wall 350 metres to the northwest from J4R-DD-088, and 120 metres to the southeast from historical RC holes J4W-RC-010 and J4W-RC-011. J4R-DD-090 intercepted 0.45 % U<sub>3</sub>O<sub>8</sub> over 0.4 metres at 132.3 metres.



# 10.1 2024 Drill Contractor and Equipment

The 2024 drilling campaign was completed by Base Diamond Drilling using two X10 Diamond Drills mobilized to the Angilak Project in April 2024, staffed with a standard drill crew consisting of a supervisor, four drillers, four helpers and a 5<sup>th</sup> man/pad builder. Drilling was performed to the end of the hole with NQ rods (480 mm core diameter) and a 4.2 metre core (hexagonal) barrel. All drill casing and drill anchors were removed after final drilling on drill pad.

# 10.2 Drill Hole Surveying

Each drill was aligned using the Devialigner, a north-seeking gyro system designed to accurately measure relative to true north, inclination of the drillhole, and the roll angle of the drill. The system includes a smartphone connection which displays the drill set-up information and is operated by the driller, helper and/or foreman.

During drilling, the drill hole deviation was recorded using the DeviGyro OX MINI and DeviCounter. The DeviGyro OX Mini is an overshot surveying tool used to track the orientation of the drill hole every 50 metres, with one continuous survey conducted at the end of the hole. For continuous surveys, the DeviGyro OX Mini and the DeviCounter is connected to the DeviGyro app which provides representative depth measurements. The tool collects azimuth and dip data while descending and ascending the hole. This information is then correlated with the depths recorded by the DeviCounter. Finally, the data is displayed on the smartphone app to visualize the deviation, azimuth average, inclination average, survey parameters, and to confirm whether the survey has been properly completed. Each drill was equipped its own DeviGyro, DeviCounter, and two smartphones to connect to the tools. The equipment was operated by the driller and

helper and the information sent via an Excel file to the project geologist for approval and uploading to the database.

Core orientation was measured using the CHAMPORI NQ equipment. This equipment consists of four components: a smartphone with the CHAMPOri app, two magnetically activated tools that link to the smartphone, and a level with a magnet to activate the tools. Each tool is attached to the end of the core barrel, activated, and linked to the smartphone to record the original orientation. Once each drill run is completed and the core barrel extracted, the drill helper rotates the barrel to align the core until the smartphone confirms the correct orientation, after which the bottom of the hole is marked. Each drill was equipped with its own core orientation kit, with an additional spare system located in camp.

Once drilling was complete, holes were probed using a 40-TGU probe equipped with a Nal(TI) gamma detector of 0.5 x 1.5 inches. The probe was connected to an MX winch with a cable length of either 500 or 1000 metres. The winch system connects to a SCOUT PRO acquisition system and laptop running the Logger suite software. The system collects real-time data to ensure proper functionality at the start of each test. Down hole surveys were completed by the geological team, logging both down and up hole at a speed of 4-10 metres per minute, ensuring slower speeds were used over the mineralized intervals. Upon completion of the surveys, logging files were converted into industry standard .LAS file formats and reviewed by the geological team to ensure probe peaks aligned with radioactivity scintillometer profiles obtained directly from the drill core.

# 10.3 Drill Core Handling and Logging Procedures

Upon completion of a drill run, the core was removed from the core tube by the drill contractors and placed directly into an NQ-sized wooden core box which holds approximately 4.5 metres of continuous drill core. Each drill run was separated by a wooden block labeled with the appropriate depth meterage. Intervals of lost core were identified with separate block indicators providing the interval from and to position of the lost core interval, however core recovery at the Angilak Project is very good due to the competent nature of the host rocks in the Lac 50 Deposit area. At the end of each 12-hour drill shift the core was transported via helicopter to the core shack located at Nutaaq Camp.

Once core was received at the logging facilities, the geologist and geological technician organize the boxes on the core tables and verify the depths recorded on the wooden blocks at the end of each run. Each drill run is then oriented by projecting the orientation mark from the CHAMPORI equipment to the remaining core. The technician typically marks the core at one-metre intervals and records geotechnical data such as core recovery, fracture breaks, and Rock Quality Designation (RQD). Magnetic susceptibility and conductivity are measured every three metres using a KT-20 physical property measuring system, and radioactivity is assessed with a handheld scintillometer (RS-120). The geotechnician takes scintillometer readings throughout the drillhole at 3 metre intervals in non-mineralized areas and values are averaged for each interval. In mineralized zones where scintillometer values exceed five times the background (approximately 500 counts per second with RS-120), readings are recorded at 10-centimetre intervals. The Geotechnician also labels the core trays with aluminum tags and felt markers.

The geologist logs the core for lithology, alteration, mineralization, structural intervals, point structures, defines sample intervals, and photographs the core. Core is stored in core racks in a designated, non-fenced core storage area away from the main camp site.

The sampling of the drill holes is divided into four categories: Composite, Reflectance, Density and Assay samples. Composite and Reflectance samples are collected from the same depth intervals and represent typical background (non-mineralized) core. Composite samples are sent to the SRC for a comprehensive geochemical analysis; Reflectance samples are collected and sent off-site for spectral analysis to identify the mineralogy of the sampled rock type. Assay sample intervals are determined based on the observed geology and scintillometer readings, and sent to the SRC for geochemical analysis and  $U_3O_8$  Wt % assay. For more details concerning sampling procedures, see Sample Methods below.

The logging and sampling data is entered into the MXDeposit online database platform where it can be viewed in real-time by the project geologist, who ensures that the information is complete and accurately recorded in the database.

## Sample Method: Composite samples

Composite geochemical samples are taken throughout each drill hole, excluding areas where assay or density samples are collected. Each sample covers an interval of approximately 10 metres. The samples consist of 1 to 2 centimetre discs of core collected from the bottom of each row in the core box over the specified interval. No lithological contacts or boundaries are crossed within a single sample. The samples are bagged and sealed in plastic bags with the corresponding sample tag, then sealed for shipment in plastic pails.

#### Sample Method: Assay samples

ATHA submits assay samples for mineralized core intervals where core recovery allows. Mineralized core is scanned using a handheld scintillometer (model RS-120). To minimize contamination from ambient background radiation, the core is removed from the core box for scanning, and the results are recorded in counts per second (cps). After scanning, the core is returned to its original location and orientation in the core box. Core registering values over 500 cps are marked as anomalous and later split for laboratory assay. Samples collected in 2023 by LUR had variable intervals ranging from 0.3 to 1.0 metres in length, while samples from 2024 were predominately collected at 0.5 metre intervals. Additionally, barren samples of 0.5 metres in length were taken at both ends of the mineralized intervals, extending to cover a total length of 2 metres beyond the mineralized interval.

All assay samples are split using a hydraulic core splitter according to the sample intervals previously marked on the core by the geologist. One half of the core is returned to the core box for reference, while the other half is bagged and sealed in a plastic bag with the corresponding sample tag. Samples are sealed for shipment in plastic or metal pails, depending on the radioactivity level. The samples were shipped to SRC via air transport, accompanied by Transport of Dangerous Goods (TDG) documentation completed by qualified personnel.

## Sample Method: Samples for Spectra Analysis

Rock chip samples are collected at the same intervals as the composite samples. Each sample consists of a 1 to 2-centimetre core disk with a fresh surface. The samples are bagged, tagged, and sealed in small plastic bags for analysis. They are then analyzed for mineral identification using reflectance spectroscopy at the Nutaaq camp. The samples are organized and stored in plastic pails at the logging facility on-site.

## Sample Method: Density samples

Density samples are primarily taken from mineralized intervals and regionally from unaltered and unmineralized rock. Core samples approximately 10 centimetre in length are marked, tagged, and

collected for density measurement. Field density measurements are determined using the water immersion method, weighing the dry core in air and then when immersed in water. The measurements are entered into MXDeposit, and the sample is dried and sealed in a plastic bag with the corresponding tag. Depending on the radioactivity level, density samples are stored in plastic or metal pails and shipped to SRC via air transport, accompanied by Transport of Dangerous Goods (TDG) documentation completed by qualified personnel.

# 11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

# **11.1 Sample Preparation**

## 11.1.1 ValOre (Kavalliq) Diamond Drilling (2009 to 2022)

Core samples collected during the 2009 to 2012 diamond drilling programs as well as the 2013, 2015 and 2022 drilling campaigns, comprised half split NQ drill core. Drill core from these programs were logged, sampled and stored at the Nutaaq logging facilities. Sample intervals were selected based upon both lithology and radiometrics. Sample thickness ranged from 0.5 to 1.5 metres. Mineralized zones were completely sampled along with one or more 0.5 to 1.0 metre wall rock buffer samples usually collected on either side of intersected mineralized zones.

The samples were accepted in Yellowknife by Discovery Mining Services and then loaded onto trucks for transportation to the SRC Laboratory in Saskatoon, Saskatchewan. The samples were first analyzed by SRC's inductive coupled plasma-optical emission spectroscopy (ICP-OES) multi-element uranium exploration ICP1 method. The method analyzed for multi-elements include Ag, Mo, Cu, Pb, Zn and a suite of rare earth elements. ICP results U>1000 parts per million (ppm) were analyzed using SRC's U<sub>3</sub>O<sub>8</sub> Assay method.

## 11.1.2 ValOre Soil Sampling (2022)

Soil samples were collected from the B horizon within 3 metres of the proposed GPS coordinates. Samples were described, photographed and recorded at each site. A total of 926 samples were sent for analysis during the program; 880 of which were soil samples, along with 16 duplicates and 30 QA/QC samples. Batches of samples were placed within 20-litre pails and sealed with a tamper proof lid. All samples were sent to Activation Laboratories Ltd. (ActLabs) in Ancaster, Ontario for Enzyme Leach Analysis.

## 11.1.3 ValOre Reverse Circulation Drilling (2022)

Geological samples were collected over five-foot drill runs with a small portion used for logging in Nutaaq camp. A total of 401 samples were collected in plastic pails at the drill and 21 QA/QC samples were added to the sample batches. All sample pails were flown to Baker Lake and forwarded on cargo planes to Yellowknife. From Yellowknife, the sample pails were transported by a contracted carrier, Manitoulin, from Discovery Mining's warehouse to Vancouver and Saskatoon, respectively.

A total of 135 RC samples were sent to ALS Laboratories (ALS) in North Vancouver, BC, and 266 RC samples were sent to the SRC in Saskatoon, SK.

## 11.1.4 LUR Diamond Drilling (2023)

Core samples collected during LUR's 2023 diamond drilling program comprised half split NQ drill core. Intervals were selected based upon mineralization, radiation, lithology and structure. Sample lengths ranged from 0.2 to 1.2 metres, and where radioactivity was present buffer samples of 0.2 to 1.2 metres in length were taken above and below the radioactive samples. Core was split using a hydraulic core splitter and half the core was collected for sampling.

Samples were placed in plastic bags with identification tags, sealed with secure plastic ties and subsequently packed into plastic pails sealed with tamper proof lids. If the outside surface of the plastic pail measured greater than 5,000 CPS, the core was packed into an IP3 steel drum for shipping. The IP3 drums were put into crates in Baker Lake to facilitate further transport. Radioactive core was packed into the center of the drum surrounded by non-radioactive core on

all sides. Sample submittal forms were filled out to include shipment numbers along with sample sequences and total numbers of samples.

A total of 838 core samples were flown to Baker Lake and forwarded on cargo planes to either Yellowknife or Winnipeg and then road transported to the SRC laboratory in Saskatoon, Saskatchewan.

There were no significant issues identified concerning sample shipments or sample security during 2023 drilling program.

11.1.5 ATHA Diamond Drilling (2024)

Core samples collected during ATHA's 2024 diamond drilling program include; 1) half-split NQ drill core for assay samples, 2) 10-metre composite samples comprised of 1 to 2 centimetre discs of core taken from the bottom of each row in the core box over 10-metre intervals, and 3) 10 centimetre-core lengths for density samples. All core was logged, sampled, and stored at the Nutaaq Camp logging facilities. Splitting areas at the camp were thoroughly cleaned of dust and rock chips between samples to prevent cross-contamination during the splitting process. The samples were placed in sample bags and sealed in plastic or metal pails, depending on the radioactivity level.

All samples were flown to Baker Lake, then transported by cargo planes to Winnipeg before being road transported to the SRC. Sample shipments were accompanied by Transport of Dangerous Goods (TDG) documentation completed by qualified personnel. A request for analysis form was prepared prior to shipment, detailing each batch of samples, sample types, preparation codes, and analysis codes.

All samples for assay, density, or geochemical analysis for the 2024 drilling campaign were submitted to the SRC Laboratory in Saskatoon, Saskatchewan.

There were no significant issues identified concerning sample shipments or sample security during 2024 drilling program.

## 11.2 Analyses

11.2.1 Drill Core Geochemical Analyses and Assay

## ICP1 (Uranium multi-element exploration analysis by ICP-OES)

In ICP-OES analysis, the atomized sample material is ionized, and the ions then emit light (photons) of a characteristic wavelength for each element, which is recorded by optical spectrometers. Calibrations against standard materials allow this technique to provide a quantitative geochemical analysis.

The analytical package includes 63 analytes (47 total digestion, 16 partial digestion), with nine elements analyzed for partial and total digestions (Ag, Co, Cu, Mo, Ni, Pb, U, V, and Zn). Samples may also be analyzed for gold by fire assay, upon request. The ICP1 analytical package includes the following analytes.

Total Digestion: Ag, Al2O3, Ba, Be, Cd, CaO, Ce, Cr, Co, Cu, Dy, Er, Eu, Fe2O3, Gd, Ga, Hf, Ho, K2O, La, Li, MgO, MnO, Mo, Na2O, Nb, Nd, Ni, P2O5, Pb, Pr, S, Sc, Sm, Sn, Sr, Ta, Tb, Th, TiO2, W, U, V, Yb, Y, Zn, Zr.

For total digestion analysis, an aliquot of pulp is digested in a hot block digestor system using a mixture of concentrated HF,  $HNO_3$ , and  $HCIO_4$ . The dried residue is then dissolved in 15 mL of dilute  $HNO_3$  and analyzed using the same instrument(s) as for partial digestion.

Partial Digestion: Ag, As, Bi, Co, Cu, Ge, Hg, Mo, Ni, Pb, Sb, Se, Te, U, V, Zn.

For partial digestion, an aliquot of pulp is digested in a digestion tube using a mixture of  $HNO_3$  and HCl in a hot water bath for approximately one hour, then diluted to 15 mL with deionized water. The samples are then analyzed using a Perkin Elmer ICP-OES instrument.

In addition, boron is determined by ICP-OES analysis after fusion with NaO<sub>2</sub>/Na<sub>2</sub>CO<sub>3</sub>.

## **ICP-MS Exploration Package**

This analytical package includes the analysis of 54 elements and oxides using a three-acid total digestion method (HF:  $HNO_3$ :  $HCIO_4$ ) and a suite of 44 elements using a two-acid partial digestion method ( $HNO_3$ : HCI). The package also includes the analysis of lead isotopes (<sup>204</sup>Pb, <sup>206</sup>Pb, <sup>207</sup>Pb, and <sup>208</sup>Pb). PerkinElmer instruments are currently used. The samples analyzed by this package are generally non-radioactive, non-mineralized sandstones and basement rocks with low uranium concentrations (<100 ppm).

The package consists of three separate analyses:

- 1. ICP-MS analysis on the partial digestion includes the following elements: Ag, As, Be, Bi, Cd, Co, Cs, Cu, Dy, Er, Eu, Ga, Gd, Ge, Hf, Hg, Ho, Mo, Nb, Nd, Ni, <sup>204</sup>Pb, <sup>206</sup>Pb, <sup>207</sup>Pb, <sup>208</sup>Pb, Pb, Pr, Rb, Sb, Sc, Se, Sm, Sn, Ta, Tb, Te, Th, U, V, W, Y, Yb, Zn, and Zr.),
- 2. ICP-OES analysis for major and minor elements on the total digestion (Al<sub>2</sub>O<sub>3</sub>, CaO, Fe<sub>2</sub>O<sub>3</sub>, K<sub>2</sub>O, MgO, MnO, Na<sub>2</sub>O, P<sub>2</sub>O<sub>5</sub>, TiO<sub>2</sub>, Ba, Ce, Cr, La, Li, Sr, S, V, and Zr),
- 3. ICP-MS analysis for trace elements on the total digestion ((Ag, Be, Bi, Cd, Co, Ćs, Cu, Dy, Er, Eu, Ga, Gd, Hf, Ho, Mo, Nb, Nd, Ni, <sup>204</sup>Pb, <sup>206</sup>Pb, <sup>207</sup>Pb, <sup>208</sup>Pb, Pb, Pr, Rb, Sc, Sm, Sn, Ta, Tb, Th, U, W, Y, Yb, and Zn.

For partial digestions, an aliquot of pulp is digested in a mixture of ultra-pure concentrated nitric acid (HNO<sub>3</sub>:HCl) in a digestion tube placed in a hot water bath. The solution is then diluted to 15 mL with de-ionized water prior to analysis.

For total digestion, an aliquot of pulp is digested in a hot block digestion system using a mixture of ultra-pure concentrated acids (HF:HNO<sub>3</sub>:HClO<sub>4</sub>). The dried residue is dissolved in 15 mL of 5% nitric acid (HNO<sub>3</sub>) and brought to volume with de-ionized water prior to analysis.

## U<sub>3</sub>O<sub>8</sub> wt% Assay by ICP-OES

When the uranium partial values from ICP1 are  $\geq$ 500 ppm, sample pulps are re-assayed for U<sub>3</sub>O<sub>8</sub> using SRC's ISO/IEC 17025:2017-accredited method for determining U<sub>3</sub>O<sub>8</sub> (wt%). In the case of uranium assays conducted by ICP-OES, a pulp is already generated during the initial phase of sample preparation and assaying. For analysis by aqua regia, an aliquot of the sample pulp is digested in a 100 mL volumetric flask using a mixture of HCI:HNO<sub>3</sub> in a 3:1 ratio on a hot plate for approximately one hour. The solution is then diluted to volume with de-ionized water for analysis by ICP-OES.

# Fire Assay

During fire assay an aliquot of sample pulp was mixed with standard fire assay flux in a clay crucible and a silver inquart was added. The mixture was fused in a fire assay oven. The fusion melt was poured into a metal form and cooled. The lead bead was recovered and put into the oven for cupellation until only the precious metal bead remained. The bead was parted in a solution heated in a boiling water bath until the silver dissolved. The solution containing the silver was decanted, leaving the gold in the test tube. Aqua Regia was added to the gold in the test tube and heated in the boiling water bath until the gold dissolved. The sample was diluted to volume and analyzed by ICP-OES. This method is suitable for all pulverized and core samples for the determination of gold. The detection limit for Au using this method is 1 ppb.

# Density by Dry Bulk Method

Drill core samples collected for dry bulk density measurements are sent to SRC. Upon receipt, the samples are first weighed and then submerged in de-ionized water for re-weighing. Afterward, the samples are dried until a constant weight is achieved. They are then coated with an impermeable layer of wax and weighed again while submerged in de-ionized water. The weights are entered into a database, and the bulk density of each sample is calculated. Additionally, the water temperature at the time of weighing is recorded and used in the bulk density calculation.

11.2.2 ValOre Soil Sampling Analysis (2022)

All samples were analyzed using Enzyme Selective Extraction (ESE) and analyzed by inductively coupled plasma mass spectrometry (ICP-MS).

11.2.3 ValOre Reverse Circulation Sampling Analysis (2022)

The reverse circulation samples were prepared and analyzed for partial digestion (ICP1), total digestion (ICP1), Au fire assay (Au 2), and  $U_3O_8$  assay. The partial digestion, total digestion,  $U_3O_8$  assay and Au fire assay analyses are the same as described in the section 11.2.1 Drill Core Geochemical Analyses and Assay.

# 11.3 Security

In 2024, as each hole was drilled, drilling contractor personnel placed the core in boxes at the drill site and secured core boxes with lids screwed on, tied, or nailed to the box. Core was then delivered to the core processing facility via helicopter daily, twice a day, or when weather conditions permit. All core was logged, sampled and stored at the Nutaaq Camp logging facilities. On site sample preparation consists of core splitting by geological technicians under the supervision of geologists. One half of the core is placed in sample bags with a sample number tag and the other half is returned to the core box, which is later stored at the core storage area located near the logging facility. The bags containing the split samples are then placed in buckets with lids for transport.

All samples were flown to Baker Lake, then transported by cargo planes to Winnipeg, before being road transported to SRC. The samples were accompanied by Transport of Dangerous Goods (TDG) documentation completed by qualified personnel. A request for analysis form was prepared prior to shipment, detailing each batch of samples, sample types, preparation codes, and analysis codes.

Samples were received at SRC either as dangerous goods requiring appropriate Transport of Dangerous Goods (TDG) documentation or as exclusive-use samples (with no radioactivity documentation attached). Upon arrival, all information pertaining to a received shipment of samples is verified by sample receiving personnel, including sample numbers, number of pails,

sample type/matrix, condition of samples, and request for analysis. After the completion of analyses, data are sent securely via electronic transmission to ATHA. These results are provided as a series of PDFs and an Excel spreadsheet.

SRC places a large emphasis on confidentiality and data security. Appropriate steps are taken to protect the integrity of samples at all processing stages. Access to the SRC premises is restricted and monitored. SRC is an ISO/IEC 17025/2005 and Standards Council of Canada certified analytical laboratory and is independent of the Author and the issuers.

In reviewing previous documentation on the project, the Author is of the opinion that sample handling, shipment, and security for samples collected between 2009 and 2023 was completed in a similar manner to that of the ATHA procedure outlined above.

## 11.4 Quality Assurance and Quality Control

## 11.4.1 Protocols

# Historical Drill Core QA/QC Protocols (2009 to 2022)

The 2009 and 2010 core drilling programs used barren gabbro from hole DDH 09-775-01 as blank material and inserted it into the sample stream. During the 2011 drill program additional nonmineralized gabbro drill core was sourced from DDH 10-LC-061 and inserted as blank material. Blank material during the 2012 program comprised of non-mineralized gabbro or basalt from hole DDH 10-LC-061 or DDH 11-LC-006. Similarly, blank material for the 2013 and 2015 drill seasons was sourced from non-mineralized gabbro or basalt drill core in drillholes DDH 10-LC-061 (2013) or DDH 11-LC-112 (2015). The 2022 diamond drilling program used certified coarse blank material from OREAS and inserted randomly using a pre-assigned tag number at the rate of one in every 50 samples.

ValOre (Kivalliq) purchased certified reference material (CRM or standard) for insertion into the sample stream during 2011 and 2012 from the Canada Centre for Mineral and Energy Technology in Ottawa, Ontario. Four certified uranium CRMs were used: BL2-A, BL4-A, BL5, and CUP 1. For the 2013-2015 drill programs, three certified uranium CRMs were used: BL4-A, BL5, and CUP 1. In 2022, ValOre purchased certified reference material for insertion into the sample stream from OREAS. Four certified uranium CRMs were used: Oreas 120, Oreas 122, Oreas 123 and Oreas 124.

# LUR Drill Core QA/QC Protocols (2023)

Quality control samples were inserted into the core sample stream as CRMs and certified coarse blanks. Duplicate samples were split from half split core with a hydraulic splitter. Blanks, certified reference materials, and repeats were inserted into the sample stream at regular intervals by LUR and the SRC in accordance with quality assurance/quality control (QA/QC) procedures. Geochemical assay data were subject to verification procedures by qualified persons employed by LUR prior to disclosure.

LUR purchased certified reference material for insertion into the sample stream from OREAS North America, Sudbury, Ontario, Canada. Seven certified uranium CRMs were used: OREAS 23b, OREAS 90, OREAS 120, OREAS 121, OREAS 122, OREAS 123 and OREAS 124. The performance of the standards was evaluated using the criterion that assay results fell within 3 standard deviations from the certified value based on the standard deviation reported by the manufacturer. Results for all standards fall within control limits. There is no indication of systematic analytical errors in the uranium or copper assays. For detailed results, refer to Dufresne et al., 2024.

A total of 86 duplicate core samples were collected to assess sample preparation bias. Duplicate core samples were taken at random approximately every 25th sample by splitting the remaining core in half, leaving one quarter core for reference in the core box. The comparison returned a correlation coefficient of 0.7624 which is considered low. In the Author's opinion, the low correlation is due to the exceedingly low grades of the samples selected for duplicate analysis. The dataset has an approximate range of 0.1 to 300 ppm U and a median of ~8 ppm U. A sample measured at 8 ppm can have a 1 ppm change in the duplicate yet represent a 12.5% change in U.

## ATHA Drill Core QA/QC Protocols (2024)

Standard Operating Procedures (SOPs) ensure consistency and quality control in the selection and preparation of core samples, safeguarding data integrity at the Angilak Project. The sampling procedures define the frequency at which control samples are inserted into the core sample stream by ATHA personnel. Control samples include blanks, standards, and duplicates. Duplicate samples are split from half-split core using a hydraulic splitter. Blanks and standards are certified reference materials (CRM).

ATHA purchased certified reference materials (CRMs) for insertion into the sample stream from OREAS North America, located in Sudbury, Ontario, Canada. Five certified uranium CRMs were used: OREAS 120, OREAS 121, OREAS 122, OREAS 123, and OREAS 124 (Table 11-1). The performance of these standards was evaluated based on the criterion that assay results fall within three standard deviations of the certified value, as reported by the manufacturer. For CRMs where total digestion techniques (i.e. 4-acid digestion) used for certified values vary from SRC's total digestion technique (i.e. 3-acid digestion), CRM mean and standard deviations have been determined directly from SRC analytical results and used for quality control purposes typically resulting in more stringent control criteria. Additionally, three certified blank CRMs were used: OREAS coarse sand (silica), OREAS 22h, and OREAS 90.

## 11.4.2 QA/QC Results

Results of the QA/QC program have been well documented by ATHA, LUR, and ValOre. UMR has relied on documentation provided by ATHA in addition to review of the QA/QC data.

Results from the QA/QC samples are continually tracked by ATHA as certificates for each sample batch are received, checking for batches that exceed the failure criteria. Standard reference materials fail when results are more than three standard deviations from the expected value. Blank samples fail when results are greater than 10 times the lower detection limit. If QA/QC samples of a sample batch pass within acceptable limits, the results of the sample batch are imported into the master database. If the QA/QC sample fails, the entire batch is reanalyzed.

## Historical Drill Core QA/QC Results (2009 to 2022)

All historical certificates were reimported into ATHA's database, with various blanks and standards verified for any failures. Any minor errors were corrected, and the correction was recorded in the sample table. Lab standards used were BL2, BL2-A, BL4A, BL5, CAR110, CAR218, CG51509, and SRCUO2. Field standards used were BL2, BL4A, BL5, CUP 1, MPb1b, OREAS 120, OREAS 122, OREAS 123, and OREAS 124. Z-scores of these field standards are shown in Figure 11-1. Of the 1181 of the historic standards measured, only four fell outside of the acceptable range of the mean plus or minus 3 standard deviations. Of these, three of the standards were from the 2012 drilling season and one was from the 2022 season. Three of the failed standards are considered low grade (BL2A and OREAS122) and one is considered high grade (BL5). ATHA and UMR considers this to be acceptable for historical data, but further

investigation will be conducted to identify the cause of the failures. Note that some standards have no record in the database to their source. Work is currently in progress to source these standards.

Blank material (Table 11-1) from 2009 to 2015 was sourced from non-mineralized gabbro or basalt from drill holes completed on site. The follow up drill program in 2022 used certified coarse blank material from OREAS. Of the 518 blank samples measured historically (Figure 11-2), three blanks fall as outliers. The reason for these could potentially be due to cross contamination of lab equipment or because the blank sources historically were field samples assumed to be non-mineralized but potentially could have been weakly mineralized. Further investigation will continue relating to these blanks, but ATHA and UMR considers this dataset to be acceptable.

CRM Code	Sample Decomposition	Analytical Method	Element	Unit	Certified Values	Standard Deviation	Certified Value Source
BL2A	HF:HNO3:HClO4	ICP1-OES2	U	ppm	4264	32.5	Lab
BL2A	HCI:HNO3	U3O8-ASSAY	U3O8	wt %	0.502	0.0031	Lab
BL3	HCI:HNO3	U3O8-ASSAY	U3O8	wt %	1.21	0.0067	Lab
BL4A	HF:HNO3:HClO4	ICP1-OES2	U, ICP	ppm	1260	20	Lab
BL4A	HCI:HNO3	U3O8-ASSAY	U3O8	wt %	0.147	0.001	Lab
BL5	HF:HNO3:HCIO4	ICP1-OES2	U	ppm	71200	350	Lab
BL5	HCI:HNO3	U3O8-ASSAY	U3O8	wt %	8.36	0.0133	Lab
CAR110	HF:HNO3:HCIO4	ICP1-OES2	U, ICP	ppm	3350	85	Lab
CAR218	HF:HNO3:HCIO4	ICP1-OES2	U	ppm	3014	36	Lab
CG51509	HF:HNO3:HClO4	ICP1-OES2	U, ICP	ppm	2	0.6667	Lab
CUP 1	HF:HNO3:HClO4	ICP1-OES2	U, ICP	ppm	1272	19	Company
CUP 1	HCI:HNO3	U3O8-ASSAY	U3O8	wt %	0.149	0.0012	Company
DCB01	HF:HNO3:HClO4	ICP1-MS2	U	ppm	124	3.7415	Lab
KEC Blank	HF:HNO3:HClO4	ICP1-OES2	U, ICP	ppm	4	5	Company
OREAS 120	HF:HNO3:HClO4	ICP1-OES2	U	ppm	39.82	0.64	Company
OREAS 120	HCI:HNO3	U3O8-ASSAY	U3O8	wt %	0.005	0.0005	Company
OREAS 121	HF:HNO3:HCIO4	ICP1-OES2	U	ppm	208.3	1.53	Company
OREAS 121	HCI:HNO3	U3O8-ASSAY	U3O8	wt %	0.0245	0.0005	Company
OREAS 122	HF:HNO3:HClO4	ICP1-OES2	U	ppm	415.8	4.61	Company
OREAS 122	HCI:HNO3	U3O8-ASSAY	U3O8	wt %	0.048	0.001	Company
OREAS 123	HF:HNO3:HCIO4	ICP1-OES2	U	ppm	849	5.66	Company
OREAS 123	HCI:HNO3	U3O8-ASSAY	U3O8	wt %	0.0987	0.001	Company
OREAS 124	HF:HNO3:HCIO4	ICP1-OES2	U	ppm	1796	14.46	Company
OREAS 124	HCI:HNO3	U3O8-ASSAY	U3O8	wt %	0.212	0.0025	Company
OREAS 22h	HF:HNO3:HCIO4	ICP1-OES2	U	ppm	1	0.02	Company
OREAS 23b	HF:HNO3:HClO4	ICP1-MS2	U	ppm	6.28	0.08	Company
OREAS 90	HF:HNO3:HClO4	ICP1-MS2	U	ppm	3.5	0.1	Company
OREAS CS Blank	HF:HNO3:HClO4	ICP1-MS2	U	ppm	0.79	0.71	Company
OREAS CS Blank	HF:HNO3:HClO4	ICP1-OES2	U	ppm	1.14	0.65	Company
OREAS CS Blank	HCI:HNO3	U3O8-ASSAY	U3O8	wt %	0.0006	0.0002	Company
SRCU02	HCI:HNO3	U3O8-ASSAY	U3O8	wt %	1.58	0.03	Lab

Table 11-1: Certified Reference Material Details

# Drill Core QA/QC Results (2023 – 2024)

In 2023 and 2024, LUR and ATHA utilized a range of standard reference materials sourced from OREAS to ensure the quality and accuracy of analytical results. As the SRC laboratory does not provide certified values for its analytical methods in conjunction with these standards, in-house certified values are being established. Field control limits were calculated from the 2023 and 2024 assay results and applied retroactively; any significant deviations from the expected values are promptly flagged and addressed. Figure 11-3 to Figure 11-6 illustrate the performance of all field

standards and blanks from the 2023 and 2024 field seasons. Of the 391 standards measured in 2023-2024, only three standards fall outside of the acceptable range of mean plus 3 standard deviations. Two of the standards are related to Oreas 121 and one is related to Oreas 120, which are both low grade standards. ATHA and UMR considers these results acceptable. ATHA has communicated that re-analysis will be completed on the failed standards. Of the 193 blanks measured in 2023-24 no samples fall outside of the accepted range.

## SRC Lab Standards

SRC completes their own QA/QC before returning results, and they are verified a second time by ATHA. Any certificates that include a standard sample that fall outside of 3 standard deviations (SD) is returned for re-analysis. As well, any certificate that includes two successive samples that fall outside 2 SD are also returned for re-analysis. All laboratory control samples fall within control limits.

#### SRC Lab Duplicates

One in every 40 samples is analyzed in duplicate by the laboratory. 2023 data (Figure 11-7) shows a high reproducibility of lab duplicates within the acceptable 10% tolerance, with one lab repeat falling outside the 10% tolerance range which requires further follow-up. The 2024 (Figure 11-8) results also show the same high reproducibility, with one lab repeat plotting outside of the 10% tolerance range. However, it should be noted the analytical result for this specific lab repeat is still pending from the laboratory. UMR believes the laboratory's reproducibility meets or exceeds industry standards.

## LUR and ATHA Field Duplicates

Core duplicates are prepared by collecting a second sample of the same interval, through splitting the original sample (quarter core samples), and are submitted as an independent sample. Duplicates are typically submitted at a minimum rate of one per 25 samples. Variability observed when comparing field duplicates to original assay results (Figure 11-9) is attributed to several factors, including mineralization heterogeneity associated with narrow-vein style mineralization, sample size reduction (i.e. quarter core samples from NQ diameter drill core) and analytical error. As well, the 2023 data was predominately collected from low grade (less than 100 ppm) samples which also contributes to the observed variability within the field duplicate results.



Figure 11-1: Z-Scores of all field standards used historically (2009-2023) for ICP1 OES, Total Digestion

Figure 11-2: Historical (2009-2023) Blank Results (ICP1 OES, Total Digestion) using Non-Mineralized Gabbro or Basalt Drill Core





#### Figure 11-3: Z-Scores of all Field Standards used in 2024, for ICP1 OES Total Digestion





#### Figure 11-5: 2024 Blank Results (ICP1 OES, Total Digestion) using the CS OREAS Standard





Figure 11-7: Lab Repeats from 2023 Show an Acceptable 10% Tolerance for ICP1 OES Total Digestion







# 11.5 QP Comment on Section 11

The QP has reviewed the 2009 to 2024 data and is of the opinion that the procedures and systems employed to collect and manage this information meets industry best practice. UMR considers that the QA/QC results demonstrate acceptable levels of accuracy and precision at the laboratories.

# **12 DATA VERIFICATION**

## 12.1 Site Visit

A site visit to the Angilak Property was carried out August 14-15, 2024, by UMR's Qualified Person, Matt Batty, MSc, P. Geo. The two-day site visit included:

- Review of drill core from an ongoing drill hole,
- Review of mineralized drill core from eleven historic and recent drill holes.
- Confirmation of three drill hole collar locations.
- Review and verification of the geological setting / environment of the Project, •
- Review of drilling, logging, sampling, analytical and QA/QC procedures, and •
- Review of overall site facilities.

UMR reviewed (1) the entirety of available core from ML-DD-010 (0 to 329.7 m), which was being drilled at the time of the visit, and (2) mineralized intervals from drill holes 11-LC-97, 23-LC-004, MZ-DD-175, EEX-DD-053, 11-LC-083, 12-J4-030, 12-774-011, 23-LC-005, J4R-DD085, and J4R-DD-086 (Figure 12-1). The selected drillholes provided examples of low- and high-grade uranium mineralization, an overall sense of the Property's geology, spatial representation, and different drill programs. A comparison of the drill logs and assay results with the drill core showed that the information recorded in the drill database matched well with the drill core. As part of the review, UMR verified the occurrences of mineralization visually and by way of a hand-held scintillometer (Figure 12-2).



Figure 12-1: Angilak Core Review



Figure 12-2: Confirmation of Mineralization via a RS 121 Scintillometer

The locations of three drillhole collars were confirmed visually and with a handheld Garmin GPS, inclusive to MZ-DD-176, J4R-DD-087, and DDH 774-003. The database records were within 3 metres of the less accurate handheld measurements; and therefore, were deemed acceptable. The collar locations for the holes were demarked with tree branches or timbers inserted into the ground near the drill collar (Figure 12-3).

Figure 12-3: Drill Collar MZ-DD-176



# 12.2 Database Validation

ATHA verified the available exploration data for the Angilak Project, including soil and rock geochemical data along with airborne, ground magnetics, VLF-EM and radiometric geophysical data and all drilling data including work conducted by ValOre (formerly Kivalliq) from 2008 to 2022, LUR (formerly Labrador) in 2023, and ATHA in 2024.

The soil and rock sampling data collected by ValOre were provided in Excel spreadsheets and ESRI shapefile formats. Data was imported into ArcGIS software to check for any obvious geospatial errors. All sample sites appeared to be correctly located. The soil and rock datasets were compared against copies of the laboratory certificates and found to be free of errors.

Airborne and ground geophysical data from work conducted between 2008 and 2016 were provided as either Geosoft Montaj<sup>™</sup> databases or as ASCII line data. All data was reviewed for completeness. The airborne and ground geophysical images from the various surveys completed over the years were all brought into ArcGIS software for review and verification. The 2022 ground magnetics and VLF-EM geophysical data were provided as line data and were processed by APEX personnel and brought into ArcGIS software for review and verification. Similarly, the 2023 airborne radiometric survey data was imported into ArcGIS and plotted by means of the Geosoft extension for review and verification. The QA/QC procedures applied during the processing were deemed sufficient to provide quality data.

Drilling data collected by ValOre was originally compiled in digital format as a Microsoft Access database in 2017. This database contained a combination of historical data compilations from Kivalliq and ValOre, as well as original assay certificate data and geological logs from the 2009 to 2015 drilling programs. The drillhole database included collar coordinates, downhole survey information, geological interval data, and assay information. In addition, ValOre provided the drillhole database compiled by Mr. Rob Sim, the QP responsible for the prior historical resource estimates. A total of 471 drillholes for 78,806 metres of diamond drilling were identified in the database. All of the 2022 drilling data collected by ValOre at the end of the 2022 season was captured in raw Excel and pdf formats.

Data acquired in 2023 by LUR was provided in Excel spreadsheet format, Access Databases, and ESRI shapefiles. Data was imported into MXDeposit<sup>™</sup>, and ArcGIS software was used to check for geospatial errors. Some drill holes with erroneous elevation values were corrected using an accurate topographic analogy and this correction was recorded in MXDeposit<sup>™</sup>.

ATHA personnel designed and oversaw the import of previous geological data into MXDeposit<sup>™</sup>. This included database constraints to ensure proper data entry, identification and correction of errors in data from previous drilling campaigns, and developing workflows to ensure both field, and laboratory control samples were properly verified for importing geochemical certificates. All drilling and sampling data collected by ATHA during the 2024 drilling campaign was logged directly into the MXDeposit<sup>™</sup> database.

ATHA personnel completed an internal audit of the Angilak Project drill hole database as part of the 2024 exploration program. All data collected by LUR in 2023 was checked and validated against pdf hard copy assay certificates and geological logs. Data collected by ValOre from 2009 and 2022 was verified by comparing 10% of the database entries to original hardcopy drill logs, assay certificates and collar coordinate survey information. Minor typos and column mismatches were found and rectified, but overall, the data integrity met or exceeded industry standards. However, the reverse circulation drilling results were deemed to be imprecise relative to the validated core drilling results, and possibly inaccurate; thus, the reverse circulation drilling was not considered in ATHA's evaluations. UMR agrees with this conclusion and did not use the reverse circulation information in the exploration target model.

In the Author's opinion, the Angilak Project exploration data are free of any material or systematic errors and are considered well validated and of sufficient quality for use in this Technical Report.

12.2.1 Additional Database Validation by UMR

UMR further validated the diamond drilling database via the following digital queries:

• Header table: searched for incorrect or duplicate collar coordinates and duplicate hole IDs.

- Survey table: searched for duplicate entries, survey points past the specified maximum depth in the collar table, and abnormal dips and azimuths.
- Lithology, alteration, and structure tables: searched for duplicate entries, intervals past the specified maximum depth in the collar table, overlapping intervals, negative lengths, missing collar data, missing intervals, and incorrect logging codes.
- Geochemical, density, and assay tables: searched for duplicate entries, sample intervals past the specified maximum depth, negative lengths, overlapping intervals, sampling lengths exceeding tolerance levels, missing collar data, missing intervals, and duplicated sample IDs.

No significant issues were identified.

## 12.2.2 Validation Limitations and Adequacy of the Data

The QP reviewed the adequacy of the exploration information and the visual, physical, and geological characteristics of the mineralization of the Property and found no significant issues or inconsistencies that would cause one to question the validity of the data provided by ATHA.

Based upon the evaluation of the drilling, sampling and QA/QC programs completed by previous operators and ATHA it is Mr. Batty's opinion that the Angilak drill and assay data are appropriate for use as presented in this technical report.

## 13 MINERAL PROCESSING AND METALLURGICAL TESTING

## 13.1 SGS Mineralogy Analysis

In February, 2013 SGS provided ValOre a mineralogical characterization of 14 samples (Grammatikopoulos and Morton, 2013). Ten samples were collected from radioactive mineralized intersections representative of mineralization of the Lac 50 Deposit, in addition to four samples from the Blaze Zone (Table 13-1). The purpose of the investigation was to determine the overall mineral assemblage with an emphasis on the characterization of uranium minerals and their associated minerals. The mineralogical investigation included analyses with QEMSCAN<sup>™</sup> technology (Quantitative Evaluation of Materials by Scanning Electron Microscopy), Scanning Electron Microscope equipped with an Energy Dispersive Spectrometer (SEM-EDS), optical microscopy, X-ray Diffraction (XRD) and Electron Microprobe Analysis (EMPA).

The mineralogical investigation revealed that the samples consist mainly of carbonates (calcite, ankerite and dolomite), feldspars (plagioclase and K-feldspars), quartz, chlorite, hematite, mica, apatite, zircon, barite and kaolinite (Table 13-2). Sulphides included pyrite, chalcopyrite, galena, molybdenite, bornite and covellite; although sulphides show an erratic distribution, it was shown that carbonate rich rocks have very low sulphide content (Grammatikopoulos and Morton, 2013). The overall mineral abundances determined from the mineralogical work are provided in Table 13-3 below with a picture of their spatial distribution provided in the QEMSCAN<sup>™</sup> as Figure 13-1.

Sample		Erom	To (m)	Interval	Sampla	Description
ampie #		(m)	10 (11)	(m)	Type	Description
π		(11)		(111)	туре	
90001	11-LC-036	185.5	185.6	0.1	Petrograph	Hematite altered U-carbonate veining within moderate to
					0 1	strongly altered fine grained basalt with trace sulphides.
90002	11-LC-075	103.3	103.36	0.06	Petrograph	Sheared, brecciated basalt; silica-carbonate-hematite
						alteration
90003	11-LC-102	92.64	92.7	0.06	Petrograph	Mafic tuff; chlorite-albite-quartz-epidote alteration; trace
						sulphides; hematite-altered U mineralization
90004	11-BZ-005	52.82	52.89	0.07	Petrograph	Fine grained pillowed, amygdaloidal basalt; moderate
						hematite-carbonate-graphite alteration; 3% fine grained
00005		40.0	40.00	0.00	Detressues	pitchbiende within veinlets
90005	11-BZ-010	49.8	49.88	0.08	Petrograph	Hematite-altered, oxidized, U-mineralized basalt, quartz-
00006	11_B7_010	00 65	00 7	0.05	Petrograph	Fine grained moderately bematite altered basalt: guartz
30000	11-02-013	33.03	55.1	0.05	reliograph	carbonate stringers- minor I I-minerals
90007	11-BZ-017	68.6	68 68	0.08	Petrograph	Hematite-altered basalt with sulphides-carbonate-
				0.00	. ett egi apri	quartz-hematite alteration
90008	11-LC-030	99.15	99.2	0.05	Petrograph	Quartz-carbonate-hematite altered basalt with quartz-
					0 1	carbonate-sulphide-U veining
90009	11-LC-043	112.9	112.97	0.07	Petrograph	Brecciated and sheared basalt; quartz-carbonate-
						hematite-sulphide alteration associated with U veining
90010	11-LC-056	100.6	100.66	0.06	Petrograph	Pitchblende bearing veinlet within weakly hematized,
00044	44 1 0 000	407.44	407 40	0.07		foliated fine grained basalt
90011	11-LC-083	127.11	127.18	0.07	Petrograph	Brecciated and sheared basalt; silica-hematite-sulphide
00010	11 1 0 066	02.06	02 12	0.06	Detrograph	Sheared and braceisted baselt/tuff: strong bemetite iron
90012	11-LC-000	92.00	92.12	0.00	Fellograph	carbonate chlorite alteration associated with L
						mineralization
90013	11-LC-094	191.13	191.2	0.07	Petrograph	Brecciated, foliated mafic tuff: guartz-carbonate-epidote-
						pyrite-graphite-albite alteration: U minerals
90014	11-LC-116	297.7	297.75	0.05	Petrograph	Shear zone; hematite-carbonate-sulphide alteration;
					<b>U</b> 1	80% carbonate veining

Table 13-1: Samples Collected for Mineralogical Analysis Conducted at SGS.

#### Table 13-2: Summary of Modal Mineralogy

Sample ID	90001	90002	90003	90004	90005	90006	90007	80008	60006	90010	90011	90012	90013	90014
Sulphides	2.9	8.2	10.8	2.2	5	0.6	16	1.1	0.3	0.2	2.9	0.1	15.2	0.2
U-Minerals	58.1	0.6	25.9	0.2	8.4	0.4	21.1	18.2	8.9	12.4	2.9	0.1	8.8	0.6
Feldspars	19.7	42.9	6.8	10.7	38.4	24.6	2.1	3.3	0.4	1.1	17.3	27.4	5.4	0.3
Quartz	2.5	4.5	21.3	8.9	1.9	11.6	1.9	9.5	2.8	2.1	13.6	10.1	51.1	5.6
Micas/Clay	5.3	13.1	3.6	16.8	11.3	17.9	2.9	2.3	3.4	6.8	8.9	14.1	5.2	3.7
Chlorite	0.7	0.9	0.2	39.3	17.8	28.4	7.9	2.3	5.3	17.7	20.1	6.3	0	5.1
Carbonates	6.7	23.1	30.2	13.2	13.8	6.6	32	53.9	77.7	58.3	30.1	31.8	13.4	82.8
Fe-(Ti)-Oxides	0.5	3.1	0.3	2.7	1.7	3.5	13.2	8.2	0.3	0.2	0.2	2.7	0.1	0.2
Apatite	1.2	0.2	0	0.3	0.5	0.2	0.6	0	0.1	0.2	2.3	1.1	0	0
Other	2.4	3.5	0.8	5.6	1.4	6.3	2.4	1.3	0.8	1.1	1.7	6.2	0.7	1.4

Figure 13-1: QEMSCAN™ Pseudo Image of Sample 90001 Illustrates Structural Control of Uranium Mineralization among Silicates and Carbonates.



Sa	mple	90001	90002	90003	90004	90005	90006	90007	90008	90009	90010	90011	90012	90013	90014
Fra	ction	-1000/+3um													
Mass Size D	Distribution (%)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Calculated ESD Particle Size		14642	9741	6196	4302	7228	13851	16002	15205	15746	11597	9359	15353	12855	10569
		Sample													
Mineral Mass	Chalcopyrite	0.0	0.0	8.4	0.7	0.1	0.0	0.5	0.8	0.0	0.0	2.6	0.0	0.1	0.0
(%)	Pyrite	2.2	7.9	1.5	1.2	2.4	0.5	8.3	0.0	0.0	0.0	0.1	0.1	13.0	0.0
	Molybdenite Galena Sphalerite	0.2	0.0	0.2	0.0	2.4	0.0	7.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0
	Other Sulphides	0.5	0.0	0.3	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.7	0.1
	Uraninite	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Brannerite	0.0	0.3	0.4	0.2	0.0	0.0	0.1	0.2	0.2	0.1	0.2	0.0	0.2	0.0
	Coffinite	57.8	0.6	25.8	0.2	7.1	0.3	20.9	18.1	8.7	12.2	2.2	0.1	8.6	0.6
	K-Feldspar	0.2	0.0	0.1	0.0	1.2	0.0	0.2	0.1	0.3	0.2	0.7	0.0	0.2	0.0
	Plagioclase	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Quartz Micas/Clay Other-	2.0	5.1	2.5	1.8	0.5	2.1	0.1	0.0	0.0	0.0	0.1	8.4	3.3	0.0
	Silicates Chlorite	17.7	37.8	4.3	9.0	37.8	22.5	2.0	3.2	0.4	1.1	17.2	19.0	2.1	0.3
	Calcite Ankerite	2.5	4.5	21.3	8.9	1.9	11.6	1.9	9.5	2.8	2.1	13.6	10.1	51.1	5.6
	Dolomite	5.3	13.1	3.6	16.8	11.3	17.9	2.9	2.3	3.4	6.8	8.9	14.1	5.2	3.7
	Fe-(Ti)-Oxides	1.0	3.4	0.4	5.2	1.1	6.1	0.8	1.0	0.7	0.9	1.1	5.8	0.5	1.1
	Apatite Gypsum	0.7	0.9	0.2	39.3	17.8	28.4	7.9	2.3	5.3	17.7	20.1	6.3	0.0	5.1
	Fluorite	6.3	19.1	30.1	12.4	13.6	6.5	12.5	50.8	75.8	57.6	30.0	22.6	10.0	81.7
	Barite Zircon	0.4	2.1	0.0	0.3	0.2	0.1	5.1	3.1	1.8	0.7	0.0	1.0	0.9	1.1
	Other	0.0	1.9	0.0	0.5	0.0	0.0	14.4	0.0	0.0	0.0	0.0	8.2	2.5	0.0
Mean Grain	Chalcopyrite	71	22	131	30	27	24	42	42	26	23	50	30	28	22
Size by	Pyrite	25	55	44	39	26	44	30	22	22	22	22	33	117	23
Frequency (µm)	Molybdenite	24	22	32	23	38	24	51	22	23	22	23	24	29	25
	Galena Sphalerite	23	22	23	22	22	23	23	24	31	27	24	23	23	40
	Uther Sulphides	23	33	22	37	0	22	22	0	0	0	0	22	28	23
	Brannerite	22	23	23	23	22	23	23	23	49	33	23	24	22	22
	Coffinite	96	24	60	22	37	29	59	52	58	58	27	25	35	39
	K-Feldspar	24	23	26	0	24	24	25	27	25	25	24	22	24	25
	Plagioclase	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Quartz Miess/Clay Other	26	27	28	32	25	33	34	24	22	22	24	29	29	22
	Silicates Chlorite	57	70	31	42	65	48	35	40	29	46	65	35	29	40
	Calcite Ankerite	27	26	73	36	26	40	26	35	30	31	68	31	213	33
	Dolomite	27	30	33	32	27	33	27	27	30	29	29	29	34	33
	Fe-Oxides/Ti-	23	24	25	25	23	25	25	24	24	23	23	24	23	24
	Oxides	24	24	24	71	37	50	64	38	53	78	64	30	23	68
	Apatite Gypsum	51	47	115	39	69	38	34	117	283	189	82	41	54	263
	Fluorite Barite	27	25	29	23	23	22	27	29	28	25	22	25	26	26
	Zircon Other	24	32	31	29	22	22	41	22	22	22	25	44	40	22

## Table 13-3: Mineral Abundance (wt. %) for Each Sample.

The detailed analyses determined that the most abundant uranium minerals in the Lac 50 Deposit are uraninite (commonly known as pitchblende) and coffinite, with trace amounts of brannerite and uranophane (Grammatikopoulos and Morton, 2013). Uranium mineralization is closely associated with mainly carbonates, chlorite and sulphides (particularly pyrite, chalcopyrite and galena).

The occurrence of uranium is complex and shows dissolution and re-crystallization textures. Uranium mineral grains exhibit rugged outlines, irregular grain boundaries and form fine grained outliers within the associated gangue minerals. Uranium minerals are generally fine grained but form coarse polycrystalline aggregates, layers or distinct domains. The mesoscopic appearance of the uranium minerals is characterized as patchy and disseminated. Microscopically, uranium minerals reveal net veining, discontinuous thin (micrometre in nature) layers that area clearly secondary in nature. Other textures include discontinuous rims and fine-grained inclusions in micro-fractures (Grammatikopoulos and Morton, 2013).

# 13.2 SRC Metallurgical Test Work

In June 2012, ValOre engaged the SRC to perform a second phase alkaline leaching program for the Lac 50 Deposit using sulphide flotation to optimize the alkaline leach (Zhang, 2013). The SRC program was intended to follow up on first phase metallurgical testing initiated in 2010 by SGS Mineral Services (SGS), a division of SGS Canada Inc. of Lakefield, Ontario. SGS was engaged to examine uranium recovery from a composite of laboratory pulp rejects from drillcore submitted to SRC for geochemical analysis during ValOre's 2009 drilling program (Brown and Todd, 2011; Dufresne and Sim, 2011). SGS examined a variety of leach conditions and sample grinds. Uranium extraction results were good, with up to 98% dissolution from acid leach tests and up to 94.7% dissolution from alkaline leach tests. Acid consumption, attributed to a high carbonate content in the Lac 50 composite, with rates up to 489 kg/t was considered high.

Alkaline leaching is typically preferred for high carbonate content uranium deposits. The 2012 SRC metallurgical testing program was designed to investigate uranium alkaline leaching optimization after the removal of sulphide minerals by flotation (Zhang, 2013). The testing was expanded in late 2012 to include a preliminary evaluation of the purity levels of the yellowcake product. A summary of the work conducted by the SRC is provided below and is taken from Zhang (2013).

There are two reasons to float the sulphide minerals. First, the sulphide minerals consume reagents during the alkaline uranium leaching. The removal of sulphides from the alkaline leach feed will reduce reagent consumption. In addition to uranium, the Lac 50 Deposit contains elevated contents of Ag, Mo, Cu, Zn and Pb. The majority of these metals occur as sulphide minerals, from which the metals are not extracted by either alkaline leaching or atmospheric acid leaching.

The objectives of the 2012 SRC tests were to maximize uranium extraction through optimizing the alkaline leaching process for flotation tailings; maximize the recovery of sulphides through flotation and compare yellowcake product purity levels to ASTM C967-13 uranium concentrate specifications.

# 13.2.1 Sample Receiving and Preparation

The SRC mineral processing group received from SRC Geoanalytical Labs, 166 crushed quarter split and half split pulp reject samples weighing approximately 60 kg. The samples were derived from core submitted to SRC from 51 drillholes for geochemical analysis. The holes were part of ValOre's 2010 and 2011 diamond drilling programs on the Lac 50 Main Zone, Western Extension

and Eastern Extension uranium deposits. A master composite sample was made by aggregating, blending and homogenizing the crushed drill core sample pulp rejects. The composite sample was split into two individual samples of approximately 30 kg each. The first of these was ground to 100% passing 200 mesh (74  $\mu$ m) using a ball mill. A head grade sample was taken from the resulting composite and analyzed by SRC's ICP 1 total digestion method. It contained 0.737% U, 0.217% Mo, 0.667% Cu, 0.221% Zn, 0.231% Pb and 26.7 g/tonne Ag. The SRC assay certificate is included as Table 13-4 below (SRC Report No: G-12-2325).

Table 12 4: CBC Assaul Contificate for Depart No. C 12 2225

	Idu	ne 13-4. 3r	C Assay C	entificate for	Report NC	). G-12-23	25.	
SRC Innovation Place		125 Tel: (	Report No: G-	12-2325				
PO #/Project: 13427 Samples: 3		TCI. (	Date of Report: December 05, 2012					
Column Header Details								
Silver in ppm (Aq) Copper in ppm (Cu) Iron in wt % (Fe2O3) Molybdenum in ppm (Mo) Lead in ppm (Pb)								
Uranium in ppm (U, ICP) Zinc in ppm (Zn)								
Sample Number	Aq ppm	Cu ppm	Fe2O3 wt %	Mo	Pb ppm	U, ICP	Zn ppm	
CAR110 KI215 KI215 R	3.6 26.7 26.0	239 6670 6690	4.46 12.1 12.2	67 2170 2130	452 2310 2280	3450 7370 7280	126 2210 2250	

Total Digestion: A 0.125 g pulp is gently heated in a mixture of HF/HNO3/HCIO4 until dry and the residue is dissolved in dilute HNO3. The standard is CAR110.

#### 13.2.2 Mineralogical Analysis

A quantitative mineralogical microprobe scan was performed on a sample of the homogenized composite ground to 100% passing 20 µm to get good liberation of the sulphide minerals. As shown in Figure 13-2, the results of the scan indicate that the composite sample is dominated by carbonate minerals, primarily calcite and dolomite, with subordinate quartz and other gangue silicates. Pyrite is the dominant sulphide mineral present, but chalcopyrite is also observed in the samples. Three uranium-bearing minerals are present in the sample: uraninite, coffinite and trace amounts of uranophane.

Sulphide flotation is performed to remove the sulphide minerals which consume sodium carbonate and oxygen in an alkaline uranium (U) leach circuit. Test charges were ground to 100% passing 200 mesh (74  $\mu$ m). Several different xanthate collectors and hydroxamate acid were tested. Flotation tests were performed at the same flotation conditions except that one stage cleaner flotation was conducted when the hydroxamate acid was used as collector. A schematic flotation process is shown in Figure 13-3.


Figure 13-3: Schematic Flotation Process



The target of the flotation optimization is to maximize sulphide recovery to the float concentrate. Greater than 95% of the uranium can be recovered through alkaline leaching of flotation tails. A flotation test using a mixed collector made from KAX 51 and a butyldithiophosphate at the ratio of 2/1 at a pH of 10.5 yielded good flotation results. The flotation conditions are summarized in Table 13-5. The collector conditioning time, collector dosage, flotation temperature, feed size and pH were investigated.

Table	13-5:	Flotation	Conditions

	Conditions										
	Mixed Co	ollector	MIE	BC	Feed		Temp.	Flot. Time			
Test	Dosage	Cond.	Dosage	Cond.	Size	nH					
		Time		Time		рп					
	(kg/tonne)	(mins)	(kg/tonne)	(mins)	(mesh)		( <u>°C</u> )	(mins)			
1	0.03	5	0.17	0.5	-200	10.5	65	5			

The flotation results are shown in Table 13-6. The results indicate that the mixed collector was able to recover 70.4% of Cu, 50.2% of Ag, 86.1% of Zn, 37.6% of Pb, and 80.5% of total S and 94.6% sulphide. The consumption of collector was low at 0.03 kg/tonne. Frother (MIBC)

consumption was 0.17 kg/tonne. The sulphide flotation results remain subject to further improvement by optimization.

Table 13-0. I location results Using a mixed collector at prior 10.5									
	Direct Assav	Feed Direct Assay Calculated Assay		Tails	Recovery				
Mass, g	200	197.7	15.6	182.1	7.8				
Ag, ppm	27.2	25.15	160	13.6	50.2				
Cu, ppm	6520	6196.56	55300	1990	70.4				
Mo, ppm	2320	1611.77	9290	954	45.5				
Pb, ppm	2360	2348.30	11200	1590	37.6				
U, ppm	7140	7253.07	9390	7070	10.2				
Zn, ppm	2260	2199.58	24000	332	86.1				
С, %	3.99	4.05	3.13	4.13	6.1				
S, %	2.93	2.50	25.5	0.53	80.5				
Sulfide, %	1.81	1.87	22.4	0.11	94.6				

Table 13-6: Flotation Results Using a Mixed Collector at pH of 10.5

#### 13.2.3 Alkaline Leaching

Due to the high carbonate content of the composite feed, alkaline leaching is considered to represent a viable extraction process for the Lac 50 Deposit uranium mineralization. Alkaline leaching optimization tests have been highly encouraging. Optimized results, as shown on Figure 13-4 indicate that at 70°C, atmospheric pressure, 50% pulp density, sufficient oxidation and a reagent addition rate of 70 kg/t (50 kg Na2CO3 and 20 Kg NaHCO3), 94.1% of the uranium was extracted in 48 hours and 95.9% of the uranium was extracted in 72 hours from the composite sample. An advantage of alkaline leaching for the Lac 50 Deposit mineralization is low reagent consumption. At this stage of bench testing, consumption rates have not yet been accurately determined. A second advantage of alkaline leaching is that the process is very selective resulting in a pregnant leaching solution that is clean with low impurity levels.



Figure 13-4: Optimized Alkaline Leaching Kinetics for Uranium

The high selectivity of alkaline leaching has at least three benefits: 1) simple subsequent processes to produce yellowcake; 2) unlike the raffinate handling from acid leaching circuits, no complicated effluent treatment processes are needed; 3) simplified tailings handling with the ability to utilize tailings for backfill during mining.

#### 13.2.4 Comparative Whole Ore and Float Tails

As a first step toward optimization, a series of alkaline leaching tests were performed using whole ore and flotation tails at various temperatures. Tests demonstrate that 50-60% of the uranium from whole ore samples can be extracted in the first 6 hours. After 6 hours, the leaching rate slows but uranium extraction continues to increase with leaching time. As shown on Figure 13-5 for the whole ore sample, the highest final uranium extraction (94.9%) was achieved at 70°C and the lowest final uranium extraction (75.0%) was at 90°C. Alkaline leaching was conducted using solution containing 50 g/L Na<sub>2</sub>CO<sub>3</sub> and 20 g/l NaHCO<sub>3</sub>.

Figure 13-6 shows the leaching of the flotation tails sample. In the flotation tails sample, the sulphide minerals are partially removed. The leaching of the flotation tails sample showed the same pattern as the whole ore sample. Over 50% of the uranium was extracted in the first 6 hours. After 6 hours the leaching rate slows but uranium extraction continues to increase with leaching time. In comparison to the whole ore leaching, higher final extraction rates are generally achieved with the flotation tails. The uranium extraction was 83.4% at 60°C, 94.4% at 70°C, 91.0% at 80°C, and 80.6% at 90°C, respectively.



Figure 13-6: Flotation Tails Uranium Alkaline Leach at Variable Temperatures



The leaching results of both the whole ore sample and flotation tails sample showed a leaching temperature of 70°C gave optimum uranium extraction rates of approximately 95%. In an alkaline leach operation, alkaline leach solution is recycled for re-use. If too much sulphide is present in

the feed material, reagent consumption is excessive and therefore an initial sulphide flotation is recommended.

### 13.2.5 Effects of Oxidation

Hydrogen peroxide was used as the oxidant in alkaline leach tests. With alkaline leaching optimization tests (the temperature variation tests) hydrogen peroxide was added from the second hour of leaching. In a plant operation, pressurized oxygen will be supplied continuously during the leaching process. To assess hydrogen peroxide utilization more fully, batch addition of hydrogen peroxide was compared to continuous addition. Significant improvement of leaching kinetics was achieved by adding hydrogen peroxide slowly but continuously. Figure 13-7 shows the comparison of leaching kinetics at 70°C using batch and continuous addition of hydrogen peroxide. When the hydrogen peroxide was added continuously, leaching completion was almost reached in 48 hours. Only slight improvement was observed when the leaching time increased from 48 hours to 72 hours and 96 hours. The continuous addition of hydrogen peroxide, or continuous oxidation, more accurately simulates the oxidation of field operations. Oxidation will play a critical role in optimizing leaching kinetics. The reduction of leaching time from 96 hours to 48 hours has the potential to reduce operating costs significantly.

#### 13.2.6 Effects of Feed Size

The sulphide flotation tails using different feed grind sizes were alkaline leached as well to investigate the effects of grind size on leaching kinetics and uranium extraction. Figure 13-8 shows the leaching kinetics of uranium utilizing different size fractions. Oxidant, hydrogen peroxide, was added continuously in all of the tests. It is interesting to see that very similar leaching kinetics and uranium extraction were achieved with the various size feeds. The -200 mesh feed and the -400 mesh had almost identical leaching kinetics and final uranium extraction. However, the -635 mesh feed had slightly slower leaching kinetics and final uranium extraction. This indicates that feed with size smaller than -200 mesh has very little effect on the leaching kinetics.







### 13.2.7 Yellowcake Production Test

With the encouraging results from the alkaline leaching tests, a decision was made to investigate the purity of a yellowcake product from the Lac 50 Deposit composite. A preliminary yellowcake precipitation was performed. Direct sodium hydroxide precipitation was performed first to produce sodium diuranate (Na<sub>2</sub>U<sub>2</sub>O<sub>7</sub>). The sodium hydroxide precipitation was conducted at 70°C for 6 hours. Over 99% of uranium in the pregnant solution was precipitated as sodium diuranate. The sodium diuranate was then purified through acidification and hydrogen peroxide (H2O2) precipitation. The uranium value attained was 71.9% for a final yellowcake product.

Both the sodium diuranate and final yellowcake samples were analysed for several impurities and uranium, the results for which are shown compared with Impurity Maximum Concentration Limits from ASTM C967-123 specifications in Table 13-7. Assayed impurities fell below the Maximum Concentration Limit Without Penalty standard specifications for uranium ore concentrate. Low impurity levels achieved in preliminary yellowcake tests are very encouraging at this early stage of testing.

Specifications	AS (Mass%)	ValOre (Mass%, Uranium Basis)	
Component	Limit without Penalty	Limit without Rejection	YC Product
Uranium (U)	N/A	65% min.	71.9%
Arsenic (As)	0.05%	0.1%	0.0009%
Barium (Ba)	N/A	N/A	0.0001%
Boron (B)	0.005%	0.1%	N/A

Cadmium (Cd)	N/A	N/A	0.00006%
Calcium (Ca)	0.05%	1%	0.02%
Carbonate (CO <sub>3</sub> )	0.2%	0.5%	0.069%
Chromium (Cr)	N/A	N/A	0.018%
Fluoride (F)	0.01%	0.1%	N/A
Halides (Br, Cl, I)	0.05%	0.1%	N/A
Iron (Fe)	0.15%	1%	<0.01%
Lead (Pb)	N/A	N/A	0.007%
Magnesium (Mg)	0.02%	0.5%	N/A
Mercury (Hg)	N/A	N/A	N/A
Moisture (H <sub>2</sub> O)	2%	5%	N/A
Molybdenum (Mo)	0.1%	0.3%	0.0004%
Phosphorus (PO <sub>4</sub> )	0.1%	0.7%	0.03%
Potassium (K)	0.2%	3%	<0.002%
Selenium (Se)	N/A	N/A	<0.0001
Silica (SiO <sub>2</sub> )	0.5%	2.5%	N/A
Silver (Ag)	N/A	N/A	0.0003%
Sodium (Na)	1%	7.5%	<0.01%
Sulfur (S)	1%	4%	0.125%
Thorium	0.1%	2.5%	0.00006%
Titanium	0.01%	0.05%	<0.002%
<sup>234</sup> U	56 µg/gU	62 µg/gU	N/A
Vanadium (V)	0.06	0.3%	<0.0001%
Zirconium (Zr)	0.01%	0.1%	N/A

#### 13.2.8 SRC Recommendations

Based upon the results of the SRC's metallurgical test work and specifically the alkaline leaching program for the Lac 50 Deposit, the SRC provided a number of recommendations for further studies going forward to assist with future process engineering and economic studies:

- Continue sulphide flotation tests to maximize sulphide recovery to flotation concentrate,
- Continue sulphide flotation concentrate acid leaching tests to maximize uranium dissolution,
- Additional alkaline leach tests to maximize uranium recovery,
- Initiate yellowcake precipitation tests using dilute sodium hydroxide solution for pH control to minimize reagent cost,
- Initiate testing of a composite from the Lac 50 J4 deposit, discovered in 2012,
- Continue processing tests of the leached sulphide flotation concentrate to produce a potentially marketable by-product, and
- Initiate a bench-scale pilot plant test of the optimized unit operations to optimize the integrated process.

# 14 MINERAL RESOURCE ESTIMATE

There is no current Mineral Resource estimate for the Angilak Project.

# 15 MINERAL RESERVE ESTIMATE

There is no current Mineral Reserve estimate for the Angilak Project.

# **16 MINING METHODS**

### **17 RECOVERY METHODS**

# **18 PROJECT INFRASTRUCTURE**

# **19 MARKET STUDIES AND CONTRACTS**

# 20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

# 21 CAPITAL AND OPERATING COSTS

# 22 ECONOMIC ANALYSIS

### 23 ADJACENT PROPERTIES

The tenure ownership of the area surrounding the Angilak project is presented in Figure 23-1. The QP has not verified the information of the adjacent properties and that the information of the adjacent properties is not necessarily indicative of the mineralization on the property that is the subject of the technical report.

The Kiggavik Project uranium project, jointly owned by Orano Canada Inc. (66.2%), Denison Mines (16.9%) and Uranium Energy Corp. (16.9%), is located in the Kivalliq region of Nunavut, approximately 210 kilometres northeast of the Angilak Property and 90 kilometres west of Baker Lake. The Kiggavik Project is operated by Orano and has a reported historical Mineral Resource as presented in Table 23-1 (Denison Mines, 2023; Orano 2022). Cut-off grades and other assumptions, parameters and methods used to estimate the mineral resources are unknown. The historical mineral resources for Kiggavik are from Denison's website.

		Indicated		· ·	Inferred	
Kiggavik	Tonnes	Grade U₃O8 (%)	Lbs U₃O <sub>8</sub> (,000)	Tonnes	Grade U₃O <sub>8</sub> (%)	Lbs U₃O <sub>8</sub> (,000)
	10,418,000	0.47	127,300	731,000	0.28	5,400

#### Table 23-1: Kiggavik Historical Mineral Resource (Denison, 2023)

Areva Canada Inc. (now Orano Canada Inc.) completed an initial feasibility study and submitted a Draft Environmental Assessment Study to the Nunavut Impact Review Board in 2007 (Areva, 2008). Following public hearings in March 2015, the Nunavut Impact Review Board (NIRB) recommended Kiggavik not be approved at that time. NIRB stated it does not intend for the project not to proceed at any time, but that it should be resubmitted when a project start date and development schedule can be provided. The federal government supported NIRBs decision (NIRB website).

In 2022, Forum Energy Metals Corp. (Forum) expanded their land position around the Orano leases to encompass 95,518 ha of prospective land (Forum's website). Forum's Nunavut Uranium Project (located approximately 195 kilometres north of the Angilak Project) covers two high-grade unconformity style uranium deposits – Tatiggaq and Qavvik, and the Ayra uranium showing (Forum's website).



Figure 23-1: Tenure Ownership of Area Surrounding the Angilak Property

# 24 OTHER RELEVANT DATA AND INFORMATION

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.

### 25 INTERPRETATION AND CONCLUSIONS

The Angilak Project is located 350 kilometres west of Kangiqliniq (Rankin Inlet) and 225 kilometres southwest of Baker Lake in the Kivalliq Region of Nunavut. The Angilak Property hosts the Lac 50 Deposit and is 157,440.07 hectares in size.

The Angilak Project is located within the Western Churchill Province, a large Archean craton that experienced significant crustal shortening and uplift during the Proterozoic, where the subsequent gravitational collapse led to the deposition of several rift basins, including the Baker Lake Basin.

Two major structural corridors surround the Property: the Snowbird Tectonic Zone to the northwest, and the Tyrrell Shear Zone to the southeast. These corridors formed as a result of the assembly of the Churchill Province and were later reactivated by tectonic activity in the Proterozoic. The Archean basement rocks underlying the Property consist of tonalite-granodiorite gneisses and granitoids, as well as the metasedimentary and metavolcanic greenstone belt rocks of the Henik Group. These are unconformably overlain by the Angikuni and Yathkyed sub-basins (Baker Lake Group). The Baker Lake Basin and the associated Angikuni and Yathkyed sub-basins were formed as a result of these tectonic processes. The contact between these Proterozoic basins and the Archean represents an unconformity that has been targeted globally for uranium, a deposit type termed "unconformity style uranium". The most prolific occurrences of this deposit type are found in the Athabasca basin in northern Saskatchewan.

Although historical exploration in the Yathkyed Lake area targeted unconformity style uranium, a vein-type hydrothermal uranium deposit, the Lac 50 Deposit, was found on IOL Parcel RI30-001. The Lac 50 Deposit lies within the Property and is located adjacent to the northeastern margin of the Angikuni sub-basin. It is hosted in Archean metasedimentary and metavolcanic rocks of the Henik Group. Mineralization at the Lac 50 Deposit is structurally and stratigraphically controlled and bears similarities to Beaverlodge-type vein or structural uranium deposits.

#### 25.1 Previous Exploration

Previous exploration by a variety of companies during the late 1970's and early 1980's in the Yathkyed Lake region resulted in the discovery of numerous uranium  $\pm$  base metals  $\pm$  silver showings and the Lac 50 Deposit, a Beaverlodge style, vein-type uranium deposit. Most of the showings occur close to the western, northern and northeastern boundary of the Angikuni sedimentary sub-basin, within both Archean basement and later basin-fill sedimentary and volcaniclastic material and were the product of exploration for unconformity style uranium mineralization as the main target.

The exploration season of 2008 marked the first work program in over 25 years at the Angilak Property. The 2008 exploration program completed by ValOre (formerly known a Kivalliq Energy Corp) included 5,620 line-kilometres of airborne TDEM, magnetics, radiometrics and Property wide prospecting and mapping.

In 2009, ValOre completed ground VLF-EM survey over IOL RI30-001 and identified a 9 km-long conductive trend hosting the historical Lac 50 Deposit. This was followed up with an initial 1,745 metres drill program at the Lac 50 Main Zone and successfully intersected  $U_3O_8$  mineralization in 13 of 14 drillholes.

ValOre drilled over 16,600 metres at the Lac 50 Main Zone and surrounding geophysical targets in 2010. In 2011, 30,500 metres were drilled, 5,470 line-kilometres of EM-magnetics were flown, and ground geophysical surveys were completed. New zones of uranium mineralization discovered and drilled included: Western Extension, Eastern Extension, Blaze, Pulse and Spark.

The largest exploration program in ValOre's history (\$20M) was conducted in 2012, with a focus on resource expansion and new discoveries. In total, 38,856 metres were drilled in conjunction with extensive ground geophysical surveys. New zones of uranium mineralization were discovered which included: J4, Ray, Hot, Flare, Southwest and Nine Iron. ValOre also expanded the Angilak land position by 32,375 hectares.

Exploration in 2013 consisted of 2,100 metres of drilling and ground geophysical surveying. New mineralized zones discovered included J1 and Mushroom Lake.

In 2014, 963 soil samples and 1,078 line-kilometres of airborne TDEM and magnetics geophysical surveys were completed. In 2015, 958 metres were drilled at the Dipole target, resulting in the first significant uranium discovery outside of the Lac 50 Deposit area. Additional soil results confirmed kilometre-scale uranium anomalies along the Dipole and RIB geophysical trends.

Soil sampling in 2016 expanded the area of uranium anomalism, extending the Dipole uranium signature to over 3.5 kilometres. Trenching at the Yat target confirmed the presence of a high-grade polymetallic zone in bedrock and uranium-in-soil anomaly along a 1.6 kilometre-long EM conductor.

In the spring of 2022, ValOre conducted ground magnetics and VLF-EM surveys covering 1,547.62 line-kilometres with 80,329 VLF-EM measurements collected over 3 priority grids in the Lac 50 East area, an area straddling the RIB and Dipole targets and further southwestward to the Property boundary. A soil sampling program was conducted in the summer of 2022, where 880 soil samples were collected and submitted for Enzyme Leach analysis.

An RC drill program was conducted during spring 2022 with 3,165.35 metres drilled in 27 holes on the Dipole (17 holes), Yat (4 holes) and J4 West (6 holes) targets. The RC drilling was used to follow up on core drilling results at Dipole from 2015, historical drilling at Yat and core and RC drilling at J4 West from 2013. A diamond drilling program was conducted during summer 2022 with 3,590 metres drilled in 26 holes at the Dipole (16 holes) and J4 West (10 holes) targets. Diamond drilling at the Dipole target tested the extension potential northeast along strike of the drilling completed in 2015, as well as following up on the diamond drilling in 2015 and RC drilling in 2022, to test mineralization extension with depth. Diamond drilling at the J4 West tested the potential for a sinistral off-set and continuation of mineralization to the southwest of the J4 deposit.

In 2023, LUR completed a low-level, high resolution radiometric and aeromagnetic airborne survey totaling 10,856 line-kilometres over areas previously covered by VLF-EM surveys. This was followed by an 18-hole drill campaign totalling 5,662 meters of drilling in the Lac 50 Deposit area, primarily focused on the Main Zone. The program successfully increased the extent of known mineralization and identified new mineralized horizons within the hanging wall of the Main Zone

### 25.2 Exploration Conducted in 2024

The 2024 Angilak Exploration Program concluded after twenty-five diamond drill holes were completed between early June and late August for a total of ~10,051 metres. The program was highly successful and on budget. All objectives were successfully achieved with the expansion of the historic footprint of mineralization along the Lac 50 Trend and the identification of new parallel mineralized trends called the Lac 48, Lac 52, and Lac 54 Trends. The Lac 48, Lac 50 (host to the historic mineral resource for the Lac 50 Deposit), Lac 52, and Lac 54 Trends remain open in all directions with high prospectivity for further discovery and expansion of uranium mineralization. Additionally, untested areas between the newly identified trends are also prospective for discovery of new mineralized trends.

Within the Lac 50 Trend twelve holes were drilled for a total of 4,884 metres, targeting expansion of uranium mineralization beyond the modeled grade shells from the 2013 historic resource. All holes achieved the objective of intersecting uranium mineralization outside of the historic mineralized domains and expanding the footprint of mineralization of the known zones. The footprint of mineralization extends along the Lac 50 Trend over a strike length of ~3.9 kilometres and remains open along strike and at depth.

Thirteen additional holes for a total of 5,167 metres, were completed at prospective targets within the Lac 48, Lac 52 and Lac 54 Trends. All holes discovered new lenses of uranium mineralization, expanded on previously discovered showings, or identified prospective structures. Mineralization within the Lac 48, Lac 52 and Lac 54 Trends remain open along strike and at depth.

### 25.3 Lac 50 Deposit Exploration Target Model

Understood Mineral Resources Ltd. (UMR) provided ATHA ranges for potential uranium quantity and grade as a target for further exploration on Angilak's Lac 50 Deposit (Table 25-1). The ranges were derived from a block model approach using interpreted vein wireframes, drill core assays, grade interpolation via Ordinary Kriging, and applied uncertainty bandwidths.

Lac 50 Exploration Target							
Cutoff Tonnes Grade Metal Content							
(% U₃O <sub>8</sub> )	(Mt)	(% U₃Oଃ)	(MLbs U <sub>3</sub> O <sub>8</sub> )				
0.1	7.4 - 9.3	0.37-0.48	60.8-98.2				

#### Table 25-1: Lac 50 Tabulated Exploration Target Model Ranges

Notes:

1) The stated potential quantity and grade is conceptual in nature, and there has not been sufficient exploration to define a mineral resource, and it is uncertain if further exploration will result in the target being delineated as a mineral resource.

2) The ranges were derived from a block model approach using interpreted vein wireframes, drill core assays, grade interpolation via Ordinary Kriging, and applied uncertainty bandwidths.

3) An assumed cut-off of 0.1% U<sub>3</sub>O<sub>8</sub> was used for the tabulation of the exploration target model.

The wireframes were modelled using a grade intercept limit equal to or greater than a minimum grade of 0.01 % U3O8, although lower grades were incorporated in places to maintain continuity and represent the structural setting and continuity of the mineralized system. Extension distance for the mineralized wireframes was halfway to the next hole, or 200 m in areas of no drilling, representing the potential at the deposit.

Assays were composited to 4 metre lengths within the mineralized boundaries, capped at 5% U $_{\rm a}O_{\rm a}$ , and used for variography. The blocks within the wireframes were interpolated with grade values using the composites, variography, ordinary kriging (OK), and a High Yield Limit set at 2.5% U $_{\rm a}O_{\rm a}$  (50% of search range).

UMR applied an uncertainty bandwidth to define a range for potential uranium using the block model as the midpoint. The well-informed portions of the wireframes with < 50 m drill hole spacing used a bandwidth of  $\pm$  5 % tonnes and  $\pm$  15 % metal content. An uncertainty bandwidth of  $\pm$  10 % tonnes and  $\pm$  30 % metal content was used for the remaining wireframes with drill hole spacing greater than 50 m. The stated potential quantity and grade is conceptual in nature, and there has not been sufficient exploration to define a mineral resource, and it is uncertain if further exploration will result in the target being delineated as a mineral resource.

#### 25.4 Metallurgical Work to Date

In June 2012, the SRC commenced a metallurgical testing program that built on first pass work completed in 2010. The initial 2010 results indicated alkaline leaching as the most effective extraction process for the Lac 50 DepositThe objective of the 2012 program was to investigate uranium alkaline leaching optimization and perform a preliminary evaluation of the purity levels of a final yellowcake product. The SRC aggregated a master composite sample weighing approximately 60 kilograms by blending and homogenizing 166 quarter-split and half-split pulp reject samples from 51 core holes. The sampled 2010 and 2011 core holes represent 3.2 km of strike length of uranium mineralization along the Lac 50 Main Zone, Western Extension and Eastern Extension. A head grade sample from the 2012 composite assayed 0.737 % U, 0.217% Mo, 0.667% Cu, 0.221% Zn, 0.231% Pb and 26.7 g/t Ag. Optimized results from alkaline leaching indicate that 94.1% of uranium can be extracted in 48 hours and 95.9% of the uranium extracted in 72 hours with a final yellowcake product that contained 71.9% uranium. It is encouraging at this early stage that the assayed impurities in the yellowcake product are below the maximum allowable concentration limits without penalty for uranium ore concentrate specifications. Additional metallurgical work is warranted.

### 26 RECOMMENDATIONS

Based on the historical exploration work discussed in this Technical Report, the 2024 exploration program completed by ATHA, the historical MRE, and 2024 Exploration Target Model, it is the opinion of the Author of this Technical Report that the Angilak Property warrants further exploration work.

Based upon the results of exploration conducted to date, the Author recommends that the following work be completed at the Angilak Property:

- Mapping and geochemical sampling surveys over untested geophysical anomalies proximal to the Lac 50 Deposit identified by previous geophysical programs and the 2024 Mobile MagnetoTellurics (MobileMT) survey,
- 2) Regional scale mapping within areas of interest outside of the Lac 50 Deposit area located across the project,
- 3) A drill hole spacing study be completed to better inform drill hole spacing for potential future mineral resource classification.
- 4) Expansion and delineation drilling along the Lac 48, 50, 52 and 54 Trends to further expand mineralization immediately along strike, and at depth, and along parallel and cross-cutting mineralized structural corridors identified by previous drilling,
- 5) Exploration drilling including:
  - testing of geophysical conductors proximal to the Lac 50 Deposit, including conductors along strike that could represent extensions and parallel trends prospective to host uranium mineralization.
  - further drill testing at the Nine Iron, Dipole and RIB showings, and
  - reconnaissance drilling of additional exploration targets outside of the Lac 50 Deposit identified by prior exploration;
- 6) Further airborne and ground geophysical surveys to help characterize, de-risk and prioritize regional targets across the Property,
- 7) Baseline environmental monitoring in support of future project evaluation studies, and
- 8) Ongoing community consultation.

Table 26-1	provides	a preliminary	cost	estimate	for t	he	recommended	work to	o be	carried	out ir	n
2025.	-											

Table 20-1. 2023 Cost Estimate for Neconimended Work							
Item	Cost Estimate (CDN\$M)						
Mapping & Surficial Sampling	\$1.0						
Geophysical Surveys (airborne & ground)	\$1.5						
Drilling (10,000m) & Logistical Support	\$9.0						
Baseline Environmental Monitoring	\$0.5						
Community Consultation	\$0.1						
TOTAL	\$12.1						

Table 26-1: 2025 Cost Estimate for Recommended Work

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### 28 DATE AND SIGNATURE PAGE

This report titled "Technical Report on the Angilak Property, Nunavut, Canada" with an effective date of November 25, 2024, was prepared and signed by the following Author:

Dated in Saskatoon, SK December 19, 2024 Matthew Batty, MSc, P. Geo Geostatistican and Owner (Signed and Sealed) "M.D. Batty"

### 29 CERTIFICATE OF QUALIFIED PERSONS

I, Matt Batty, MSc, P.Geo, as an Author of this report entitled "Technical Report on the Angilak Property, Nunavut, Canada", prepared for Atha Energy Corp. and dated December 19, 2024 do hereby certify that:

- 1. I am a Geologist with and owner of Understood Mineral Resources Ltd. of 22 Middleton Crescent, Saskatoon, Canada.
- 2. I am a graduate of the University of Saskatchewan in 2012 with a B.Sc. degree in Geology and a graduate of the University of Alberta in 2022 with a M.Sc. degree in Mining Engineering (Geostatistics).
- 3. I am a Registered Professional Geologist (Member No. 25595) with the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS). I have worked as a geologist for a total of 12 years since my graduation. My relevant experience for the purpose of the Technical Report is:
  - Mineral Resource estimation and preparation of NI 43-101 Technical Reports.
  - Resource & Geology Lead, with NexGen Energy Ltd., responsible for resource evaluation and reporting for uranium projects in Canada.
  - Mine Geologist with Cameco Corporation at the Eagle Point Mine.
- 4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I am a "qualified person" for the purposes of NI 43-101.
- 5. I visited the Angilak Property from August 14 to 15, 2024.
- 6. I am responsible for the entirety of the Angilak Technical Report.
- 7. I am independent of Atha Energy Corp.
- 8. I have had no prior involvement with the property that is the subject of the Technical Report.
- 9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
- 10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 19th day of December, 2024

### (Signed & Sealed) "M.D. Batty"

Matt Batty

# ATHA ENERGY 2024 ANGILAK EXPLORATION STRIPLOGS

#### ANGILAK PROJECT – Lac 48 Trend



Figure 1: Strip Log BLZ-DD-034 at the Lac 48 Trend, Blaze Target

#### ANGILAK PROJECT – Lac 50 Trend



Figure 2: Strip Log WEX-DD-079 at the Lac 50 Trend, Western-Extension Zone



Figure 3: Strip Log EEX-DD-052 at the Lac 50 Trend, Eastern-Extension Zone


Figure 4: Strip Log EEX-DD-053 at the Lac 50 Trend, Eastern-Extension Zone



Figure 5: Strip Log J4R-DD-085 at the Lac 50 Trend, J4 & ray Zones



Hole J4R-087 and hole J4R-DD-087A both failed to from collar



Figure 7: Strip Log J4R-DD-088 at the Lac 50 Trend, J4 & Ray Zones



Figure 8: Strip Log J4R-DD-089 at the Lac 50 Trend, J4 & Ray Zones



Figure 9: Strip Log J4R-DD-090 at the Lac 50 Trend, J4 & Ray Zones



Figure 10: Strip Log MZ-DD-174 at the Lac 50 Trend, Main Zone



Figure 11: Strip Log MZ-DD-175 at the Lac 50 Trend, Main Zone



Figure 12: Strip Log MZ-DD-176 at the Lac 50 Trend, Main Zone

## ANGILAK PROJECT – Lac 52 Trend



Figure 13: Strip Log ML-DD-009 at the Lac 52 Trend, Mushroom Lake Target



Figure 14: Strip Log ML-DD-010 at the Lac 52 Trend, Mushroom Lake Target



Figure 15: Strip Log ML-DD-011 at the Lac 52 Trend, Mushroom Lake Target



Figure 16: Strip Log ML-DD-012 at the Lac 52 Trend, Mushroom Lake Target



Figure 17: Strip Log PL-DD-030 at the Lac 52 Trend, Pulse Target



Figure 18: Strip Log PL-DD-031 at the Lac 52 Trend, Pulse Target



Figure 19: Strip Log PL-DD-032 at the Lac 52 Trend, Pulse Target



Figure 20: Strip Log PL-DD-033 at the Lac 52 Trend, Pulse Target

## ANGILAK PROJECT – Lac 54 Trend



Figure 21: Strip Log HOT-DD-008 at the Lac 54 Trend, Hot Target



Figure 22: Strip Log HOT-DD-009 at the Lac 54 Trend, Hot Target



Figure 23: Strip Log HOT-DD-010 at the Lac 54 Trend, Hot Target



Figure 24: Strip Log HOT-DD-011 at the Lac 54 Trend, Hot Target

## Parameters:

Maximum internal dilution 2.0 m downhole Minimum thickness of 0.5 m downhole Cutoff grade 0.01% U3O8 All depths and intervals are metres downhole, true thicknesses are yet to be determined. Drilling has often resulted in mineralization intersected at a more favourable and shallower dip