Technical Report with an Updated Mineral Resource Estimate for the Waterbury Lake Property, Northern Saskatchewan, Canada

Report Prepared by
Denison Mines Corp.

Effective date: December 21, 2018
Signature date: December 21, 2018

With Audited Mineral Resource Statement for the Huskie deposit by SRK Consulting (Canada) Inc.

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1 SUMMARY

1.1 Executive Summary

The Waterbury Lake property is located within the eastern part of the Athabasca Basin in Northern Saskatchewan. Points North Landing, a privately owned service centre with accommodations and an airfield, is located near the eastern edge of the property. Several uranium deposits are located nearby including the Roughrider, McClean Lake, Midwest, and Midwest A deposits. The J Zone and Huskie uranium deposits are located within the property near its eastern edge.

The Waterbury Lake property is owned by Denison Mines Corp. ("Denison") and Korea Waterbury Uranium Limited Partnership ("KWULP"), and Denison is the operator of the project. As of October 31, 2018 Denison held a 65.92% ownership interest and KWULP held a 34.06% ownership interest.

The purpose of this report is to support the disclosure of the maiden mineral resource estimate for the Huskie deposit, discovered by Denison in 2017. The mineral resource estimate for the J Zone deposit remains unchanged from the mineral resource statement provided in the NI 43-101 technical report titled "*Technical Report on the Mineral Resource Estimate on the J Zone Uranium Deposit, Waterbury Lake Property Located in the Athabasca Basin, Northern Saskatchewan*", dated September 6th, 2013, prepared by Allan Armitage, Ph.D., P.Geo, and Alan Sexton, M.Sc., P.Geo of GeoVector Management Inc.

Following the discovery in 2017 and subsequent definition drilling in 2017 and 2018 of the Huskie deposit, Denison internally completed a maiden mineral resource estimate for the Huskie basement-hosted uranium deposit, which was reviewed and audited by SRK Consulting (Canada) Inc. ('SRK') in accordance with NI 43-101 and CIM Definitions (2014). The Huskie deposit mineral resource estimate included data from 28 drill holes at Huskie at a spacing of approximately 50 metres x 50 metres to define the deposit over a strike length of approximately 210 metres and dip length of up to 215 metres. The deposit has been interpreted to include three parallel, stacked lenses of mineralization (Huskie 1, Huskie 2 and Huskie 3) which vary in true thickness between approximately 1 and 7 metres. The result of the 2017 and 2018 drilling campaigns at Huskie is an Inferred mineral resource estimate of 5,687,000 lbs U_3O_8 (above a cut-off grade of 0.1% U_3O_8) based on 268,000 tonnes of mineralization at an average grade of 0.96% U_3O_8.

The updated Mineral Resource estimate for the Waterbury Lake Project is summarized in Table 1-1, including the maiden mineral resource estimate for the Huskie deposit with an effective date of October 17, 2018.

Table 1-1: Waterbury Lake Property Mineral Resource Estimate Summary with an effective date of October 17, 2018.

Deposit	Category	Tonnage (kt)	Grade (% U_3O_8)	Contained Metal (x1000 lbs. U_3O_8)	Denison Equity (x1000 lbs. U_3O_8)
J Zone	Indicated	291	2.00	12,810	8,447
Huskie	Inferred	268	0.96	5,687	3,750

Notes:

1. Mineral resources are not mineral reserves and have not demonstrated economic viability.
2. Mineral resources are reported at a cut-off grade of 0.1% U_3O_8 and at a long-term uranium price of US$45 per pound.
3. Denison's share of the Waterbury Lake project as at October 31, 2018 is 65.92%.
4. The mineral resource estimate for the J Zone deposit is unchanged from the September 6, 2013 estimate as detailed in the NI 43-101 technical report entitled "Mineral Resource Estimate on the J Zone Uranium Deposit, Waterbury Lake Property, dated September 6, 2013, by Allan Armitage, Ph.D., P.Geo, and Alan Sexton, M.Sc., P.Geo of GeoVector Management Inc."
5. The audited Mineral Resource Statement for the Huskie deposit in the Waterbury Lake Uranium was prepared by Dr. Oy Leuangthong, PEng (PEO#90563867) and Mr. Cliff Revering (APGS#9764). Dr. Leuangthong and Mr. Revering are independent qualified persons as this term is defined in National Instrument 43-101. The effective date of the audited Mineral Resource Statement is October 17, 2018.

1.2 Technical Summary

1.2.1 Property Description and Location

The Waterbury Lake property is located within the eastern part of the Athabasca Basin in Northern Saskatchewan. The mineral dispositions of the project are within the 1:50,000 NTS topographic sheets 64L/05, 74I/01 and 74I/08. Points North Landing, a privately owned service centre with accommodations and an airfield, is located near the eastern edge of the property. Several uranium deposits are located nearby including the Roughrider, McClean Lake, Midwest, and Midwest A deposits. The J Zone and Huskie Zone deposits are located within the property near its eastern edge. The project dispositions is approximately 750 kilometres by air north of Saskatoon and about 420 kilometres by road north of the town of La Ronge.

1.2.2 Ownership

The Waterbury Lake property is owned by Denison Mines Corp. ("Denison") (65.92%) and Korea Waterbury Uranium Limited Partnership ("KWULP") (34.06%), as limited partners, and Waterbury Lake Uranium Corporation ("WLUC") (0.02%), as general partner, of the Waterbury Lake Uranium Limited Partnership ("WLULP"). Denison is the operator of the project and holds a 60% interest in WLUC. KWULP consists of a consortium of investors in which Korea Hydro & Nuclear Power ("KHNP") holds a majority position. Percentage interests were calculated as at October 31, 2018.

1.2.3 Geology and Mineralization

The Waterbury Lake property is located near the southeastern margin of the Athabasca Basin in the southwest part of the Churchill Structural Province of the Canadian Shield. The Athabasca Basin is a broad, closed, and elliptically shaped, cratonic basin with an area of 425 km east-west by 225 km north-south. The bedrock geology of the area consists of Archean and Paleoproterozoic gneisses unconformably overlain by flat-lying, unmetamorphosed sandstones and conglomerates of the mid-Proterozoic Athabasca Group. The property is located near the transition zone between two prominent litho-structural domains within the Precambrian basement, the Mudjatik Domain to the west and the Wollaston Domain to the east. The Mudjatik Domain is characterized by elliptical domes of Archean granitoid orthogenesis separated by keels of metavolcanic and metasedimentary rocks, whereas the Wollaston Domain is characterized by tight to isoclinal, northeasterly trending, doubly plunging folds developed in Paleoproterozoic metasedimentary rocks of the Wollaston Supergroup, which overlie Archean granitoid orthogenesis identical to those of the Mudjatik Domain. The area is cut by a major northeast-striking fault system of Hudsonian Age. The faults occur predominantly in the basement rocks but often extend up into the Athabasca Group due to several periods of post-depositional movement.

The basement beneath the Waterbury Lake project is comprised of approximately northeast-trending corridors of metasediments wrapping around orthogneissic domes and locally in the Discovery Bay trend an east-west trending corridor of metasediments bounded to the north and south by thick zones of orthogneiss that, based on interpretation of aeromagnetic images, may represent two large dome structures. Based on a review of the Wollaston Supergroup by Yeo and Delaney the metasediments and the orthogneiss domes are interpreted to be Paleoproterozoic and Archean in age, respectively (Yeo & Delaney, 2007).

The J Zone is hosted within an east-west trending faulted package of variably graphitic and pyritic metasediments bounded by orthogneiss to both the north and south. The pelitic metasedimentary assemblage, which ranges in thickness from 90 to 120 metres and is moderately steep dipping to the north includes, from north to south, a roughly 50 metre thick pelitic gneiss underlain by 20 metre thick graphitic pelitic gneiss, underlain by a 10 to 15 metre thick quartz-feldspar wedge underlain by 20 metre thick graphitic pelitic gneiss, underlain by a 15 to 25 metre thick pelitic gneiss, then back into a footwall orthogneiss. There are discontinuous offsets at the unconformity that range from a few metres to as much as ten metres.

The J Zone deposit is currently defined by 268 drill holes intersecting uranium mineralization over a combined east-west strike length of up to 700 metres and a maximum north-south lateral width of 70 metres. The deposit trends roughly east-west (080°) in line with the metasedimentary corridor and cataclastic graphitic fault zone. A 45 metre east-west intermittently mineralized zone occurs in the target area formerly known as Highland roughly separating the J Zone into two segments referred to as the eastern and western lenses which are defined over east-west strike lengths of 260 and 318 metres, respectively. A thin zone of unconformity uranium mineralization occurs to the north of intermittently mineralized zone which is interpreted to represent a mineralized block that has been displaced northwards by faulting and is referred to as the mid lens.

Mineralization thickness varies widely throughout the J Zone and can range from tens of centimetres to over 19.5 metres in vertical thickness. In cross section, J Zone mineralization is roughly trough shaped with a relatively thick central zone that corresponds with the interpreted location of the cataclasite and rapidly tapers out to the north and south. Locally, a particularly high-grade (upwards of 40% U_3O_8) but often thin lens of mineralization is present along the southern boundary of the metasedimentary corridor, as seen in holes WAT10-066, WAT10-071, WAT10-091, and WAT10-103. Ten meter step out drill holes to the south from these high-grade holes have failed to intersect any mineralization, demonstrating the extremely discreet nature of mineralization.

Uranium mineralization is generally found within several metres of the unconformity at depth ranges of 195 to 230m below surface at the J Zone. Mineralization occurs in three distinct settings: (1) entirely hosted within the Athabasca sediments, (2) entirely within the metasedimentary gneisses or (3) straddling the boundary between them. A semi-continuous, thin zone of uranium mineralization has been intersected in occasional southern J Zone drill holes well below the main mineralized zone, separated by several meters of barren metasedimentary gneiss. This mineralized zone is informally termed the South-Side Lens and can host grades up to 3.70 % U_3O_8, as seen in drill hole WAT11-142.

The Huskie deposit is entirely hosted within competent basement rocks below the sub-Athabasca unconformity primarily within a faulted, graphite-bearing pelitic gneiss ("graphitic gneiss") which forms part of an east-west striking, northerly dipping package of metasedimentary rocks flanked to the north and south by granitic gneisses. The Athabasca Group sandstones that unconformably overlie the basement rocks are approximately 200 metres thick. The deposit comprises three stacked, parallel lenses (Huskie 1, Huskie 2 and Huskie 3) which are conformable to the dominant foliation and fault planes within the east-west striking graphitic gneiss unit. The drilling to date suggests the grade, thickness, and number of lenses present is controlled by the presence of northeast striking faults which cross-cut the graphitic gneiss unit. The northeast striking faults identified at the Huskie deposit are interpreted to be part of the regional Midwest structure. The deposit occurs over a strike length of approximately 210 metres, dip length of approximately 215 metres and has an overall true thickness of approximately 30 metres (individual lenses vary in true thickness of between 1 metre and 7 metres). The deposit occurs at vertical depths ranging between 240 and 445 metres below surface and 40 to 245 metres below the sub-Athabasca unconformity. The high-grade mineralization within the lenses is comprised of massive to semi-massive uraninite (pitchblende) and subordinate bright yellow secondary uranium minerals occurring along fault or fracture planes, or as replacement along foliation planes. Disseminations of lower grade mineralization occur within highly altered rocks proximal to fault planes. The mineralization is intimately associated with hematite, which both occur central to a broad and pervasive alteration envelope of white clays, chlorite and silicification.

1.2.4 History

Uranium exploration activities have been conducted over various portions of Waterbury Lake Project claims over the past 40 years. The current Waterbury Lake Project dispositions were originally staked in Strathmore Minerals Corp. in 2004. Strathmore subsequently spun out all of its Canadian assets to Fission Energy Corp. (“Fission”) in 2007. An earn-in agreement was signed between Fission and the KWULP in 2008; the earn-in was met by 2010. In 2010, the WLULP was formed by agreement between Fission Energy Corp. and KWULP.

Effective April 26, 2018, Denison acquired Fission’s interest in the Waterbury Lake property as part of a plan of arrangement (the "Arrangement") with Fission, completed pursuant to the *Business Corporations Act* (Canada). As part of the Arrangement, Denison also acquired a portfolio of other properties in the eastern part of the Athabasca Basin, Quebec and Nunavut, and Fission’s interest in two joint ventures in Namibia.

The Waterbury Lake property is 100% owned by the WLULP, a jointly controlled limited partnership between Denison (65.92%) and KWULP (34.06%), as limited partners, and WLUC (0.02%), as general partner. Denison and KWULP are the only shareholders of WLUC and Denison is the operator of the project.

The Waterbury Lake uranium project is comprised of two deposits on the Waterbury Lake property: the J Zone deposit and Huskie deposit.

The J Zone uranium deposit was discovered during the winter 2010 drill program at Waterbury Lake. The second drill hole of the campaign, WAT10-063A, was an angled hole drilled from a peninsula extending into McMahon Lake. It intersected 10.5 metres of uranium mineralization grading 1.91% U_3O_8, including 1.0 metre grading 13.87% U_3O_8 as well as an additional four meters grading at 0.16% U_3O_8. Drill hole MWNE-08-12 intersected 5.29% U_3O_8 over 3.3 metres during a winter drill campaign which subsequently led Fission to focus in on a significant mineralized trend immediately adjacent to the southeastern boundary of disposition S-107370. The J Zone deposit discovery was made after Hathor Uranium had discovered the Roughrider Uranium deposit under the northern limb of McMahon Lake in 2008.

Denison first discovered mineralization at the Huskie zone in summer 2017 with the intersection 9.10% U_3O_8 over 3.7 metres, including 16.78% U_3O_8 over 2 metres, from 306.5 to 310.2 metres depth in drill hole WAT17-466A. Denison was following up on weakly elevated uranium intersected in WAT08-029 and anomalous alteration and structure in WAT09-053.

1.2.5 Mineral Resource Estimates and Methodologies

The mineral resource estimate for the J Zone deposit was prepared by Allan Armitage, Ph.D., P.Geo, and Alan Sexton, M.Sc., P.Geo of GeoVector Management Inc., filed on SEDAR as a NI 43-101 technical report titled "*Technical Report on the Mineral Resource Estimate on the J Zone Uranium Deposit, Waterbury Lake Property Located in the Athabasca Basin, Northern Saskatchewan*", dated September 6th, 2013. Dr. Armitage and Mr. Sexton are independent Qualified Persons as defined by NI 43-101. Practices consistent with CIM (2005) were applied to the generation of the mineral resource estimate.

The mineral resource estimate for the Huskie deposit was prepared internally by Serdar Donmez, P.Geo., E.I.T., Resource Geologist, Denison, in September 2018. SRK Consulting (Canada) Inc. (SRK) was retained by Denison to review and audit the Huskie mineral resource estimate prepared by Denison in accordance with NI 43-101 and CIM Definitions (2014). The Audited Mineral Resource Statement for the Huskie deposit was prepared by Dr. Oy Leuangthong, P.Eng. and Mr. Cliff Revering, P.Eng., who are independent qualified persons pursuant to NI 43-101. There are no mineral reserves estimated for the Property at this time.

1.2.5.1 J Zone

For the 2013 mineral resource estimate for the J Zone deposit, a grade control model or wireframe was constructed based generally on a cut-off grade of 0.03 to 0.05 % U_3O_8 which involved visually interpreting mineralized zones from cross sections using histograms of U_3O_8. 3D rings of mineralized intersections were made on each cross section and these were tied together to create a continuous wireframe resource model in Gemcom GEMS 6.5 software. The modeling exercise provided broad controls on the size and shape of the mineralized volume. Inverse distance squared interpolation restricted to a mineralized domain was used to estimate tonnes, density and U_3O_8 grades as well as gold, arsenic, cobalt, copper, molybdenum and nickel grades into the block model.

GeoVector estimated a range of resources at various U_3O_8 cut-off grades (COG) for the J Zone (Table 1-2). The current indicated resource is stated using a grade cut-off of 0.10% U_3O_8.

Using a base case COG of 0.10% U_3O_8 the J Zone deposit is currently estimated to contain an Indicated resource totaling 12,810,000 lbs. based on 291,000 tonnes at an average grade of 2.00% U_3O_8.

The effective date of the Mineral Resource Estimate for J Zone is September 6th, 2013.

Table 1-2: Mineral Resource Estimate at various cut-off grades for the J Zone, dated September 6, 2013 (Armitage & Sexton, 2013).

Cut-off Grade	Tonnes	Specific	U_3O_8 (%)	
(U_3O_8 %)		Gravity	Grade	Lbs
0.01 %	432,000	2.40	1.40	12,985,000
0.05 %	370,000	2.41	1.60	12,939,000
0.10 %	**291,000**	**2.42**	**2.00**	**12,810,000**
0.50 %	123,000	2.49	4.40	11,923,000
1.0 %	76,000	2.54	6.70	11,171,000
5.0 %	24,000	2.77	16.00	8,446,000
10 %	12,000	2.97	24.00	6,183,000
20 %	5,000	3.25	33.00	3,492,000

1.2.5.2 Huskie

The mineral resource estimation for the Huskie deposit followed a similar methodology to the J Zone. The geology model was constructed in GEOVIA GEMS™ software (version 6.8) using lithological and structural data from core logs and geochemical assays collected from 28 holes totalling 12,273.1 metres (excluding 12 abandoned holes totalling 761 metres) completed by Denison since 2017. Similar to other basement-hosted uranium deposits in the Athabasca Basin, Denison used a threshold of 0.05% U_3O_8 with a minimum thickness of 1 metre to construct the mineralization wireframes for mineral resource estimation. The assay database used for resource modelling consists of 201 assays from 10 boreholes, contained within the three mineralized lenses; Huskie 1, Huskie 2 and Huskie 3. Assays for % U_3O_8 were sampled at 0.5 metre intervals and composited to 1.0 metre lengths. Capping was considered, with only assay data from Huskie 2 being capped for % U_3O_8. Density values were assigned to the database based on a regression between U_3O_8 and density data pairs using the relationship determined for Denison's Gryphon deposit, which is also hosted within comparable basement rocks. Denison modelled variograms to determine appropriate search radii for grade estimation. An accumulation-like approach was used, wherein U_3O_8*density and density were estimated into a three-dimensional block model, constrained by wireframes in two passes using inverse distance to a power of 2 (ID^2). A % U_3O_8 grade was then calculated into each block by dividing the estimated U_3O_8 *density by the estimated density. A block size of 10 by 5 by 5 metres was selected. Search radii are based primarily on visual observations and variogram analyses. The estimation of U_3O_8*density and density were based on two estimation passes using the same set of parameters.

The block model was validated using nearest neighbour estimation and by visual inspection of the block grades relative to composites and swath plots comparing the ID^2 and nearest neighbour model.

SRK conducted a review and audit of the mineral resource model and was satisfied that the mineral resources were estimated in conformity with the widely accepted CIM *Estimation of Mineral Resource and Mineral Reserve Best Practices Guidelines*. The mineral resources may be affected by further infill and exploration drilling that may result in increases or decreases in subsequent mineral resource estimates. The mineral resources may also be affected by subsequent assessments of mining, environmental, processing, permitting, taxation, socio-economic, and other factors. The audited Mineral Resource Statement for the Huskie deposit in the Waterbury Lake Uranium Project is presented in Table 1-3 and Table 14-11 and was prepared by Dr. Oy Leuangthong, PEng (PEO#90563867) and Mr. Cliff Revering (APGS#9764). Dr. Leuangthong and Mr. Revering are independent qualified persons as this term is defined in National Instrument 43-101. The effective date of the audited Mineral Resource Statement for the Huskie deposit is October 17, 2018.

Table 1-3: Audited Mineral Resource Statement*, Huskie Deposit, Waterbury Lake Uranium Project, Saskatchewan, SRK Consulting (Canada) Inc., October 17, 2018

Category	Zone	Tonnage (kt)	Grade (%U_3O_8)	Contained Metal (x1000 lbs. U_3O_8)
Inferred	Huskie 1	81	0.34	612
	Huskie 2	178	1.28	5,047
	Huskie 2	8	0.15	27
Total Inferred		268	0.96	5,687

* Mineral resources are not mineral reserves and have not demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates. Reported at mineral resource cut-off grade of 0.10% U_3O_8 and at a uranium price of US$45 per pound.

1.2.6 Conclusions and Recommendations

The discovery of the J Zone and Huskie deposits indicate the Waterbury Lake Property is a highly prospective property with the potential to host additional unconformity-related deposits. Continued exploration drilling is highly recommended in target areas which are under- or unexplored with respect to the geological models defined for the J Zone deposit (unconformity-hosted) and Huskie deposit (basement-hosted). Currently defined target areas include those associated with the newly interpreted regional Midwest Structure.

Further regional exploration, outside of the interpreted regional Midwest Structure, is also warranted in future years given the significant size of the property and the numerous favorable geological trends identified to date. A multi-staged exploration approach is recommended, including ground geophysical surveys followed by drilling, to fully evaluate the property's potential.

1.2.7 Work Program and Budget for 2019

An exploration program is recommended for 2019 on the Waterbury Lake Project with a budget of between $1,600,000 and $2,000,000. A diamond drilling program is envisaged to follow-up on high priority target areas associated with the newly interpreted regional Midwest Structure, particularly including the GB Trend, Oban Trend and Midwest Extension. Within the Midwest Extension area, to the southwest of the Midwest deposits, drill targets are currently being defined from a recently completed DCIP resistivity survey to the southwest of the Midwest deposits. Additional target areas include GB Northeast (electromagnetic target) and Waterbury East claim (follow-up of a weak historic mineralized intersection). It is recommended the drilling program include 7,000 to 8,000 metres of diamond drilling in 16 to 20 drill holes. Target area locations are provided in Figure 1-1. Further work in 2020 or beyond will be contingent on the results of the recommended 2019 drilling program.

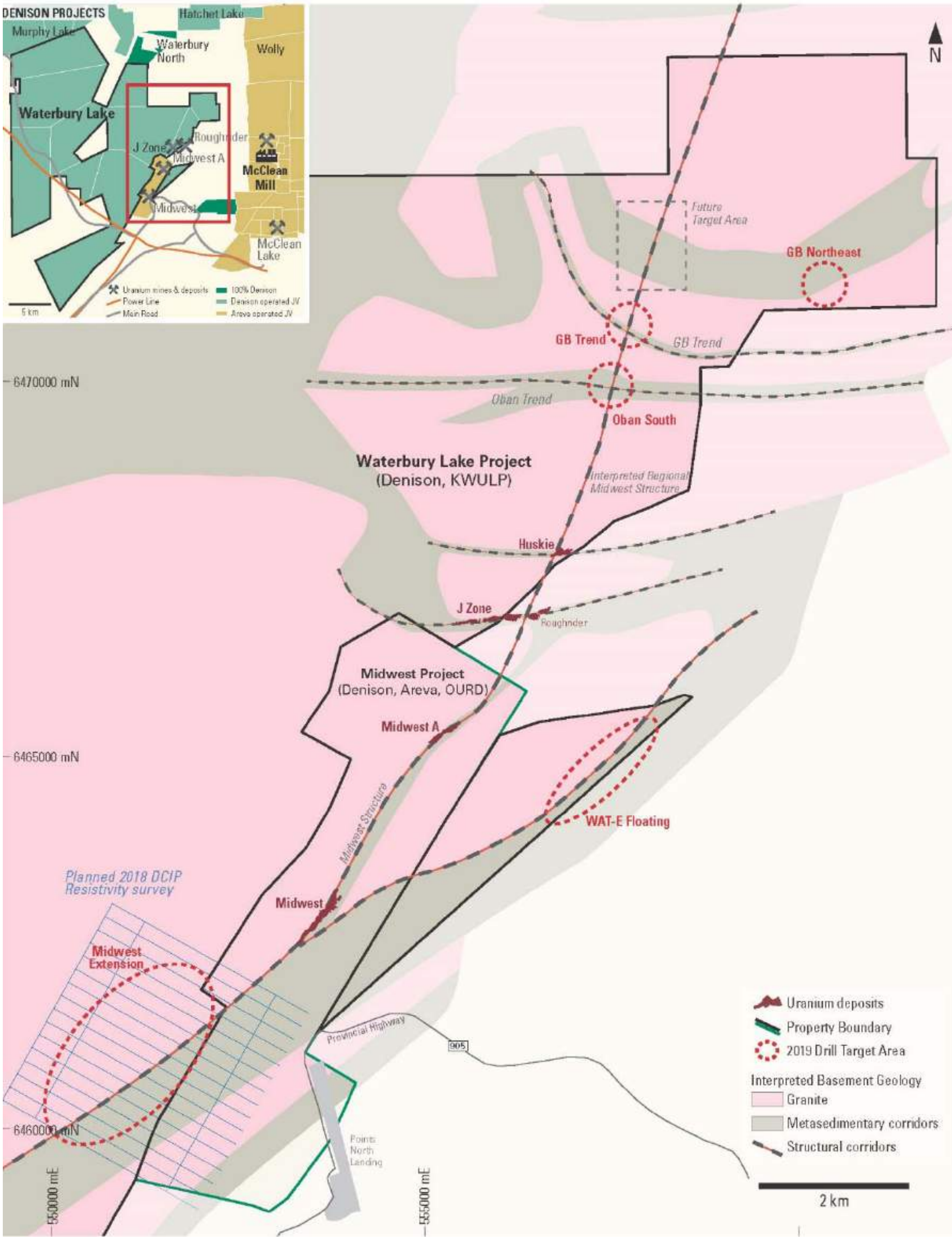


Figure 1-1: Recommended 2019 drilling target areas.

2 INTRODUCTION

2.1 Denison Mines Corp.

Denison is a uranium exploration and development company with interests focused in the Athabasca Basin region of northern Saskatchewan, Canada (Figure 2-1). In addition to its 65.92% limited partnership interest in the Waterbury Lake property, Denison's exploration portfolio consists of numerous projects covering approximately 351,000 ha in the Athabasca Basin region, including 330,843 ha in the infrastructure rich eastern portion of the Athabasca Basin. Denison's interests in Saskatchewan also include a 22.5% ownership interest in the McClean Lake joint venture, which includes several uranium deposits and the McClean Lake uranium mill, which is currently processing ore from the Cigar Lake mine under a toll milling agreement, plus a 25.17% interest in the Midwest and Midwest A deposits, and a 90% interest in the Phoenix and Gryphon deposits on the Wheeler River property. Each of Midwest, Midwest A, J Zone and Huskie are located within 20 km of the McClean Lake mill.

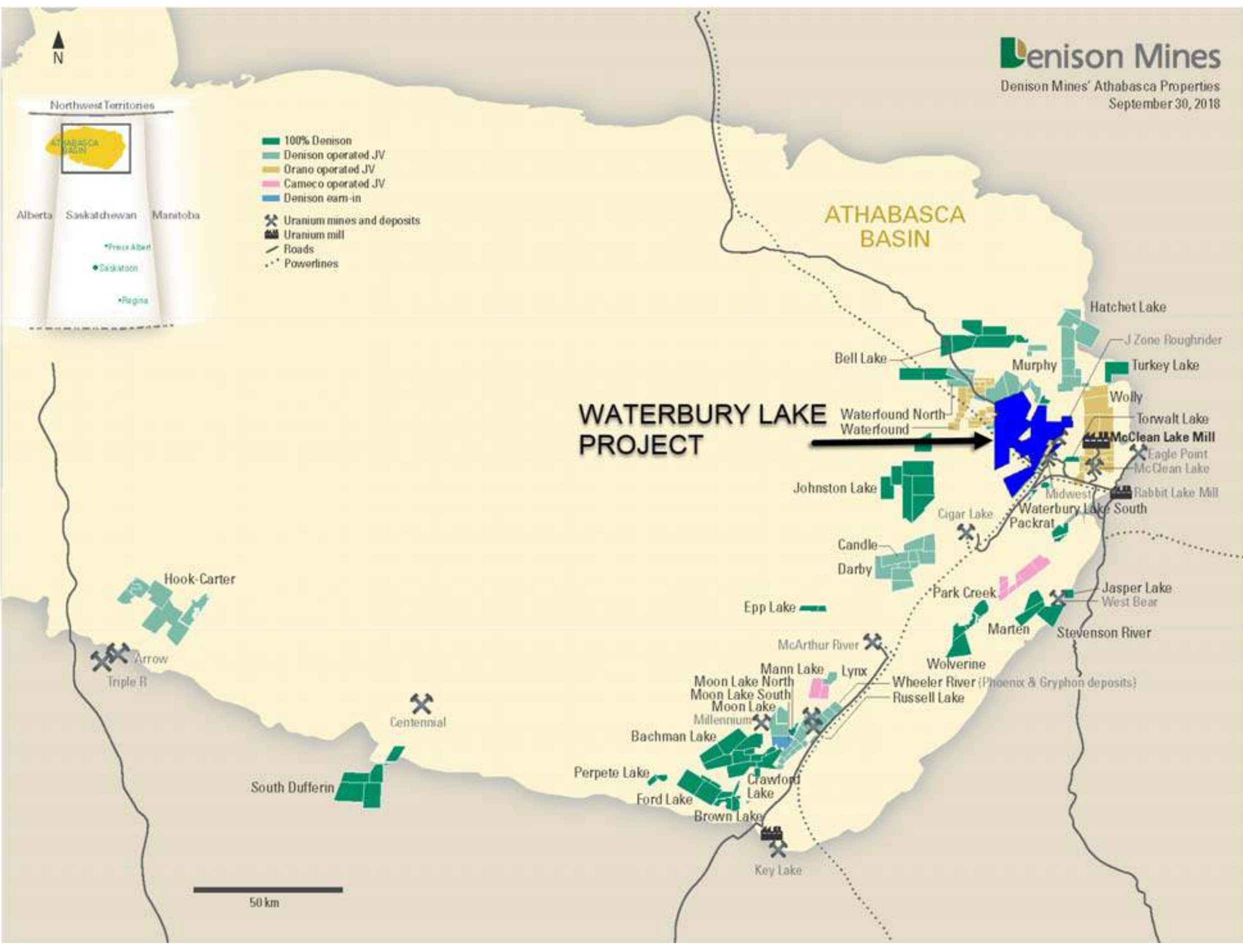


Figure 2-1: Location map of Denison's Athabasca Basin properties.

Denison is also engaged in mine decommissioning and environmental services through its Denison Environmental Services division and is the manager of Uranium Participation Corp., a publicly traded company which invests in uranium oxide and uranium hexafluoride.

2.2 Terms of Reference

This report is prepared using the industry accepted Canadian Institute of Mining and Metallurgy (CIM) "Best Practice Guidelines" and Definition Standards for estimation of mineral resources and disclosing mineral exploration information (CIM, 2005), and the revised Canadian Securities Administrators guidelines for NI 43-101 and Companion Policy 43-101CP (CIM, 2014).

2.3 Purpose of the Report

The purpose of this report is to support the disclosure of the maiden mineral resource estimate for the Huskie deposit, discovered by Denison in 2017. Denison internally completed a maiden mineral resource estimate for the Huskie deposit in September 2018, which was reviewed and audited by SRK Consulting (Canada) Inc. ('SRK') in accordance with NI 43-101 and CIM Definitions (2014). The mineral resource statement for the Huskie deposit, as disclosed herein, has an effective date of October 17, 2018.

The mineral resource estimate for the J Zone deposit remains unchanged from the mineral resource statement provided in the NI 43-101 technical report titled "*Technical Report on the Mineral Resource Estimate on the J Zone Uranium Deposit, Waterbury Lake Property Located in the Athabasca Basin, Northern Saskatchewan*", dated September 6th, 2013, prepared by Allan Armitage, Ph.D., P.Geo, and Alan Sexton, M.Sc., P.Geo of GeoVector Management Inc.

2.4 Sources of Information

This technical report is based on the following sources of information:

- Discussions with Denison personnel
- Inspection of the Waterbury Lake property area, including drill core
- Review of exploration data collected by Denison and previous property owners
- Additional information from public domain sources

This technical report is also based in part on information collected by SRK during a site visit performed by Cliff Revering, P.Eng on August 20th and 21st, 2018, and on additional information provided by Denison to SRK throughout the course of SRK's investigations. SRK has no reason to doubt the reliability of the information provided by Denison.

2.5 Inspection on Property

In accordance with National Instrument 43-101 guidelines, Mr. Allan Armitage of GeoVector personally inspected the Property and drill core on October 6th to 8th, 2010. During the visit Armitage reviewed drill core from the winter and summer 2010 drill programs, as well as core logging and sampling procedures. In addition, Armitage reviewed a representative selection of drill intersections of the J Zone and associated mineralization using a scintillometer. Sexton personally inspected the Property and drill core on August 1st, 2012. During the visit Sexton reviewed the progress of the drill program and drill core from the winter and summer 2012 drill program, as well as core logging and sampling procedures. In addition, Sexton reviewed a representative selection of drill intersections of the J Zone and associated mineralization using a scintillometer.

In accordance with National Instrument 43-101 guidelines, Mr. Cliff Revering of SRK, and Mr. Serdar Donmez and Mr. Dale Verran of Denison, visited the Waterbury Lake property on August 20th and 21st, 2018 accompanied by Mr. Paul Burry (Project Geologist, Waterbury Lake Project) of Denison. The purpose of the site visit was to review exploration procedures, define geological modelling procedures, examine drill core located at the Waterbury Lake core storage, interview project personnel, and collect all relevant information to audit the Huskie mineral resource model and the compilation of a technical report.

2.6 Abbreviations and Definitions

Abbreviations and acronyms commonly used in this report are presented in this section. Metric (SI System) units of measure are generally used in this report unless otherwise stated. All currency used in this report are in Canadian dollars (C$) unless otherwise stated.

Analytical results are reported as parts per million (ppm U) contained for uranium; however, they may be converted to U grades in the database. For the purpose of this report chemically analysed samples will be stated as percent (%) U. Uranium values derived from radiometric probe analysis will be stated in this report as equivalent percent uranium: eU%.

Abbreviations of units and names

%	percent
°	degree (degrees)
°C	degrees Celsius
µm	micron or micrometre
C$	Canadian dollar
cm	centimetre
cm2	square centimetre
cm3	cubic centimetre
cps	counts per second
Denison	Denison Mines Corp.
eU	equivalent uranium
g	gram
ha	hectares
ICP	inductively-coupled plasma emission spectroscopy, an analytical procedure
ID2	inverse-distance squared, an estimation methodology
ID3	inverse-distance cubed, an estimation methodology
kg	kilograms
km	kilometre
kt	thousand tonnes
l	litre
lb	pound
m	metre
m2	square metre
m3	cubic metre
Ma	million years
mL	millilitre
mm	millimetre
mPa.s	millipascal seconds
m a.s.l.	metres above sea level
MeV	mega-electron volt
KWULP	Korea Waterbury Uranium Limited Partnership
KHNP	Korea Hydro & Nuclear Power
NI 43-101	Canadian National Instrument 43-101
ppm	parts per million
REE	Rare Earth Elements
RQD	Rock Quality Description
s	second

SG	specific gravity
SRC	Saskatchewan Research Council
t	tonne (metric ton) (2,204.6 pounds)
U	uranium
%U	percent uranium (% U x 1.179 = % U_3O_8)
U_3O_8	uranium oxide (% U_3O_8 x 0.848 = % U)
% U_3O_8	percent uranium oxide
UTM	Universal Transverse Mercator
WLULP	Waterbury Lake Uranium Limited Partnership
XRD	x-ray diffraction, an analytical procedure

3 RELIANCE ON OTHER EXPERTS

Dale Verran of Denison Mines Corp., has relied upon expert information provided by Denison's Corporate Counsel, Ms. Amanda Willett, for Section 4.3 (Ownership) and Section 4.5 (Royalties, Agreements and Encumbrances), and has relied upon expert information provided by Denison's Land Management Geologist, Mr. Denis Goulet, for Section 4.2 (Mineral Disposition and Tenure) and Section 4.4 (Nature and Extent of Title).

Paul Burry of Denison Mines Corp., has relied upon expert information provided by Denison's Land Management Geologist, Mr. Denis Goulet, for Section 4.7 (Work Permits), and has relied upon expert information provided by Denison's Technical Manager, Mr. Chad Sorba, for certain interpretative elements relating to the geology and mineralization of the Huskie Zone, as provided in Section 7.2.2 and Section 7.3..2.

The authors believe such Sections to be reliable, but are not experts on these subjects and disclaim any responsibility for inaccuracies or omissions that may be inherent to those Sections.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 Location

The Waterbury Lake property is located within the eastern part of the Athabasca Basin in Northern Saskatchewan (Figure 4-1). The mineral dispositions (Figure 4-2) are within the 1:50,000 NTS topographic sheets 64L/05, 74I/01 and 74I/08. Points North Landing, a privately owned service centre with accommodations and an airfield, is located near the eastern edge of the property. Several uranium deposits are located nearby including the Roughrider, McClean Lake, Midwest, and Midwest A deposits. The J Zone and Huskie deposits are located within the property near its eastern edge.

The project dispositions is approximately 750 kilometres by air north of Saskatoon and about 420 kilometres by road north of the town of La Ronge.

4.2 Mineral Disposition and Tenure

The land disposition on the Waterbury Lake Project, as of October 2018, is shown in Table 4-1 and Figure 4-2, and is comprised of thirteen (13) contiguous mineral dispositions, covering 40,256 ha. The J Zone deposit is located within mineral dispositions S-107364 and S-107370. The Huskie deposit is located entirely within mineral disposition S-107370.

Eleven of the mineral dispositions (S-107359 through S-107373) are at an annual assessment rate of C$25.00 per hectare, two of the mineral dispositions (S-111276 and S-111278) are at an annual assessment rate of C$15.00 per hectare and all dispositions have sufficient approved credits to maintain the ground in good standing until at least 2032.

Table 4-1: Waterbury Lake Project – Land Status Summary

Disposition	Size (ha)	Annual Assessment	Excess Credit	Next Review Date (Anniversary Date)	Expiry Date	Years Protected
S-107359	4,750	$118,750	$2,168,226	5-Apr-19	4-Jul-37	18
S-107361	1,627	$40,675	$796,552	11-Apr-19	10-Jul-38	19
S-107362	5,903	$147,575	$2,951,500	15-Apr-19	14-Jul-39	20
S-107363	4,530	$113,250	$2,264,999	11-Apr-19	10-Jul-38	19
S-107364	5,295	$132,375	$2,647,500	15-Apr-19	14-Jul-39	20
S-107365	5,916	$147,900	$2,958,000	15-Apr-19	14-Jul-39	20
S-107366	1,986	$49,650	$993,000	15-Apr-19	14-Jul-39	20
S-107367	469	$11,725	$154,850	2-May-19	31-Jul-32	13
S-107368	4,440	$111,000	$2,220,000	15-Apr-19	14-Jul-39	20
S-107370	906	$22,650	$453,000	2-May-19	31-Jul-39	20
S-107373	1,068	$26,700	$534,000	2-May-19	31-Jul-39	20
S-111276*	5	$240	$7,200	6-Jul-19	4-Oct-37	18
S-111278	3,361	$84,025	$1,568,590	23-Nov-19	21-Feb-38	20
Total:	**40,256**	**$1,006,515**	**$19,717,417**			

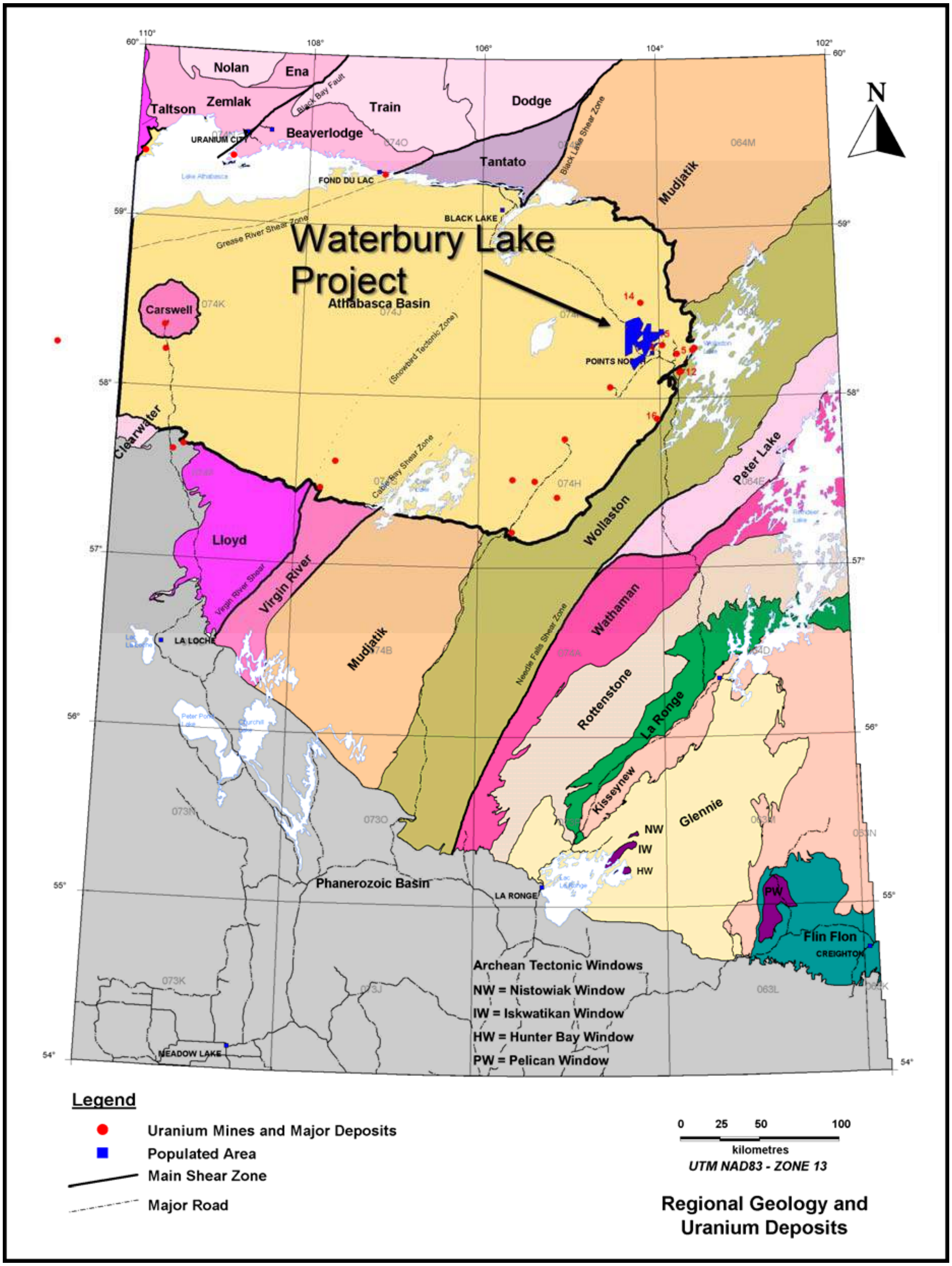


Figure 4-1: General Location Map, Waterbury Lake Project.

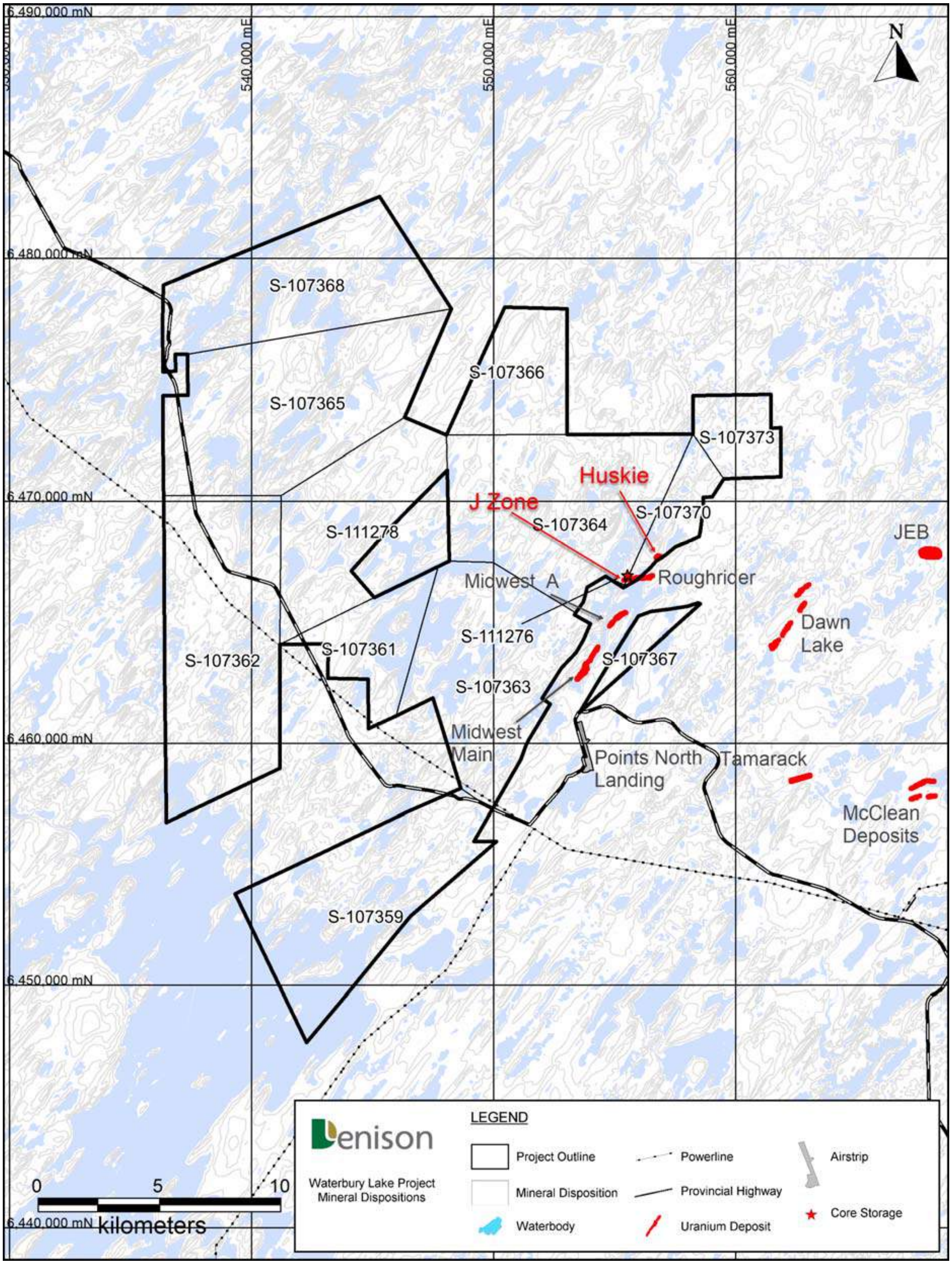


Figure 4-2: Location of Mineral Dispositions, Waterbury Lake Project.

4.3 Ownership

The Waterbury Lake property is registered to the WLULP, which is owned by Denison (65.92%) and KWULP (34.06%), as limited partners, and WLUC (0.02%), as general partner, pursuant to the terms of the Waterbury Lake Uranium Limited Partnership Agreement. Denison is the operator of the project and holds a 60% interest in WLUC. KWULP consists of a consortium of investors in which KHNP holds a majority position. Percentage interests were calculated as at October 31, 2018.

4.4 Nature and Extent of Title

The Property status shown in Table 4-1 includes the dates in which the mineral claims were recorded and the Anniversary Date. The Anniversary Date is not an expiry date. A company has 90 days from a claim's Anniversary Date to file work and for the government to perform an auto renewal for an additional year should the claim have sufficient excess work credits. All claims, apart from S-107367, are contiguous and groupings can be made on an annual basis if the claims are in good standing. There are no surface rights to any portions of the property.

Prior to December 6, 2012, mineral dispositions were located in the field by corner and boundary claim posts which lie along blazed and cut boundary lines. The entire length of the Property boundary has not been surveyed. A legal survey is not required under the provisions of the Saskatchewan Mineral Disposition Regulations of 1986. The property location is defined on the government claim map.

As of December 6, 2012, all property and component claim locations are defined as electronic mineral claims disposition parcels within the Mineral Administration Registry of Saskatchewan (MARS), as per the Mineral Tenure Registry Regulations (formerly The Mineral Disposition Regulations, 1986). MARS is a web-based e-Tenure system for issuing and administering mineral permits, claims and leases.

MARS allows registered users to:

- Acquire mineral dispositions over the internet using a GIS map of Crown mineral ownership
- Transfer dispositions to other registered users
- Divide dispositions using GIS tools
- Submit records of work expenditures using a web form
- Search dispositions and obtain copies of search abstracts
- Group work expenditures among adjoining dispositions
- Convert dispositions from permits to claims
- Access an electronic re-opening board showing Crown minerals coming available for new acquisition

Exploration and mining in Saskatchewan is governed by the Mineral Disposition Regulations 1986, and administered by the Mines Branch of the Saskatchewan Ministry of Energy and Resources. There are two key land tenure milestones that must be met in order for commercial production to occur in Saskatchewan:

1. Conversion of a mineral claim to mineral lease, and
2. Granting of a Surface Lease to cover the specific surface area within a mineral lease where mining is to occur.

A mineral claim does not grant the holder the right to mine minerals except for exploration purposes. Subject to completing necessary expenditure requirements, mineral claims can store assessment credits to protect the claim for a maximum of twenty-one years at a time. Beginning in the second year, and continuing to the tenth anniversary of staking a claim, the annual expenditure required to maintain claim ownership is fifteen dollars per hectare, increasing to twenty-five dollars per hectare after the tenth anniversary.

A mineral claim in good standing can be converted to a mineral lease by applying to the mining recorder and have a boundary survey completed. In contrast to a mineral claim, the acquisition of a mineral lease grants the holder the exclusive right to explore for, mine, recover, and dispose of any minerals within the mineral lease. Mineral leases are valid for ten years and are renewable. Land within the mineral lease, surface facilities and mine workings is considered to be located on Provincial lands and therefore owned by the Province. Hence, the right to use and occupy those lands is acquired under a surface lease from the Province of Saskatchewan. The surface lease is issued for a maximum of 33 years, and may be extended as necessary to allow the lessee to operate a mine and/or plant and undertake reclamation of disturbed ground.

4.5 Royalties, Agreements and Encumbrances

On January 30, 2008, KWULP and Fission entered into an earn-in agreement for the Waterbury Lake property, pursuant to which Fission granted KWULP the exclusive rights to earn up to a 50% interest in the Waterbury Lake property by funding $14,000,000 of expenditures on or before January 30, 2011. Additionally, Fission retained an overriding royalty interest in the property of 2% of net smelter returns. On April 29, 2010, KWULP had fully funded its $14 million of expenditures and consequently earned a 50% interest in the property, and Fission and KWULP subsequently formed the WLULP.

Effective April 26, 2013, Denison had completed the Arrangement with Fission, pursuant to which Denison acquired all of Fission's rights and entitlements to the Waterbury Lake property including the 2% net smelter returns royalty.

Denison is also manager of WLULP and operator of the Waterbury Lake property, entitled to a fee for operator services equal to 10% of the aggregate costs provided in an approved annual budget, as may be adjusted.

4.6 Environmental Liabilities

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

4.7 Work Permits

The required work permits obtained for the Waterbury Lake Project for drilling activities in 2018, included:

Saskatchewan Ministry of Environment (SERM)
- 18PA060
- 0223J – (Forest Product Permit)

Saskatchewan Water Security Agency
- NW-E8-104500
- NW-E8-104499
- NW-E8-104498
- NW-E8-104497
- NW-E8-104496

Saskatchewan Ministry of Parks, Culture and Sport / Heritage Conservation Branch
- 17-2090

The required work permits are currently in place for the recommended Waterbury Lake Project for drilling in 2019, including:

Saskatchewan Ministry of Environment (SERM)
- 18PA209
- 0301J – (Forest Product Permit)

Saskatchewan Water Security Agency
- To be obtained at the beginning of the recommended program in January, 2019

Saskatchewan Ministry of Parks, Culture and Sport / Heritage Conservation Branch
- 18-1659

4.8 Other Significant Factors and Risks

There are no known significant factors or risks that may affect access, title, the right, or ability of the operator to perform work at/on the Waterbury Lake property.

5 ACCESSIBILTY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Access to Property

The property can be accessed by ground and air. West Wind Aviation provides flights connecting Points North Landing to La Ronge, Prince Albert, Saskatoon, Regina, Fond du Lac, Stony Rapids, Wollaston Lake, and Uranium City. Road access to the property area is via Highway 102 from La Ronge then Highway 905. This four-season gravel road continues through the western edge of the property and onwards to Stony Rapids (Figure 4-2). Access around the property in the winter is by a network of snow roads through the bush and ice roads over lakes that can be used by four wheel drive vehicle or heavy equipment. In the summer months helicopters, float planes, and boats are the primary means to access the property. The Waterbury Lake Project core yard's coordinates are as follows: 555,520 mE, 6,646,950 mN (UTM Nad83 Zone 13).

5.2 Climate

Site activities can be carried out all year despite the cold weather during the winter months. Climatology, temperature, and precipitation information are collected by the Collins Bay weather station (Environment Canada, n.d.). The mean monthly temperatures are below 0°C for seven months of the year. The annual average monthly temperature ranges between -31°C and 16°C, with daily extremes as low as -45°C, indicating the severity of the winter. The mean annual temperature is -3.2° C and the area lies along the southern margin of the zone of discontinuous permafrost.

The precipitation in the region is relatively heavy with 530 millimetres annually, of which more than 330 millimetres is as rain. The wettest period is from May to September, which accounts for approximately 60% of the total annual precipitation.

5.3 Local Resources and Infrastructure

At present there are no facilities or infrastructure on the Waterbury Lake property. A provincial power station located 3.5 km to the southwest of Points North supplies power to the surrounding communities and mines. Fresh water can be readily supplied from the numerous surrounding lakes. There are several advanced development and mining operations within 20 km of the project, including Midwest, McClean Lake and Dawn Lake (Figure 5-1).

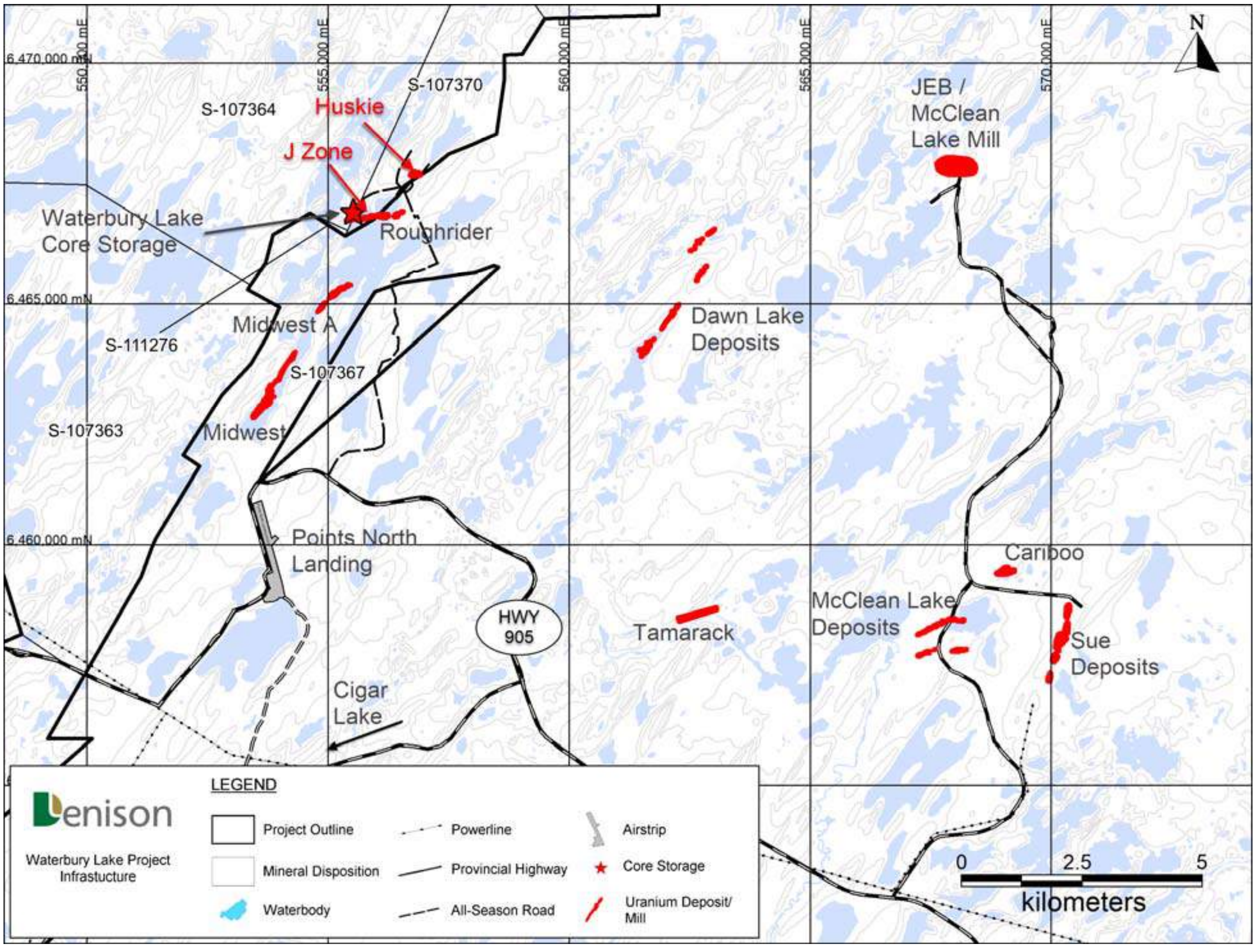


Figure 5-1: Local Resources and Infrastructure, Waterbury Lake Project.

5.4 Physiography

The elevation in the project area ranges from 430 to 540 metres above sea level, with maximum topographic relief of about 80 metres. Topography of the project area is typical of the recently-glaciated terrains of northern Canada with sand or gravel moraines and drumlins that generally follow northeast – southwest trends. Most of the area is covered by sand and gravel ridges. The drainage is typical of relatively flat, recently glaciated regions, characterized by numerous lakes and wetlands, which covers approximately 25% of the region. Discontinuous muskeg is present throughout the area in topographic depressions and ranges in thickness from one to three metres. Peat bogs, glacial drift, outwash, and lacustrine sands cover the bedrock. The vegetation is consistent with the Boreal Shield Ecozone, a region of extensive boreal forest lying on the Canadian Shield, with sub-tundra ground cover plants (Labrador tea, moss, and lichen) and trees, such as black spruce, jack pine, white spruce, tamarack, birch, and trembling aspen. The most prominent topographic feature in the immediate area is Waterbury Lake.

6 HISTORY

6.1 Prior Ownership

Uranium exploration activities have been conducted over various portions of Waterbury Lake Project claims over the past 40 years. The current Waterbury Lake Project dispositions were originally staked by Strathmore Minerals Corp. in 2004. Strathmore subsequently spun out all of its Canadian assets to Fission Energy Corp. in 2007. An earn-in agreement was signed between Fission Energy Corp. and the Korea Waterbury Lake Uranium Limited Partnership in 2008; the earn-in was met by 2010. In 2010, the Waterbury Lake Uranium Limited Partnership, a jointly controlled agreement, was signed between Fission Energy Corp. and the Korea Waterbury Lake Uranium Limited Partnership. The Waterbury Lake property is currently 100% owned by the Waterbury Lake Uranium Limited Partnership (WLULP), a jointly controlled limited partnership between Denison and KWULP. Ownership interests as of October 31, 2018 are 65.92% Denison and 34.06% KWULP. No uranium or other mineral commodity has been produced from the property to date. Table 6-1 summarizes the historical work that was performed on the Waterbury Lake property.

Table 6-1: Historical work summary on the Waterbury Lake property.

Period	Operator	Summary
1969 – 1970	King Resources	King Resources conducted an extensive exploration program in the Waterbury Lake area including airborne radiometric, magnetic and electromagnetic (EM) surveys plus a hydro-geochemical survey.
1976 – 1982	Asamara Oil	Asamera Oil Corp initiated the Dawn Lake project with the Waterbury Lake property being part of the “Esso North Grid”. The Dawn Lake deposit was discovered by Asamera in 1978 approximately 7 km east of the Waterbury Lake property. Additional airborne radiometric, magnetic, EM and VLF-EM surveys were conducted across the property as well as radon surveys. Asamera conducted mapping and sampling programs throughout the early 1980s. A drill program of 21 holes completed on the Esso North Grid in 1982 identified encouraging geology with respect to lithology, alteration and structure, but no uranium mineralization. Several holes were drilled in close proximity to the J Zone and Roughrider deposits.
Late 1980s – early 1990s	Cogema Resources Inc.	In the late 1980s, Cogema acquired properties in the Waterbury and Henday Lake areas during the late eighties and carried out an extensive exploration program involving geological mapping, sampling, drilling and geophysical surveys. The latter included airborne EM and magnetic surveys, and ground VLF-EM and gravity surveys.

Period	Operator	Summary
		In the 1990s, following-up on work done by Cogema up until the early nineties, Cameco acquired properties in the Waterbury and McMahon Lakes area and initially completed geological mapping and sampling programs. This was followed by more geophysical surveys including ground time domain electromagnetic (TDEM), magnetic, gravity and induced polarization (IP) over select targets and select drilling throughout the decade.
Mid to late - 1990s	Cameco Corp.	In the 1990's Cameco acquired properties in the Waterbury and McMahon Lakes area and initially completed geological mapping and sampling programs. This was followed by more geophysical surveys including ground time domain electromagnetic (TDEM), magnetic, gravity and induced polarization (IP) over select targets and select drilling throughout the decade.
2004 to 2006	Strathmore Minerals Corp.	Strathmore Minerals conducted an airborne high power time domain electromagnetic (MEGATEM II) survey over the entire property. A total of 1,749 line-kilometres were flown at a line spacing of 400 metres. In the fall a boulder sampling program in which 77 samples were collected. In 2006, Strathmore Minerals completed a UTEM-3 ground geophysical survey over eleven 200 metre-spaced lines centred approximately eight kilometres north of Points North Landing. eight drill holes totalling 2,666 metres and a 12.6 line-kilometre IP-resistivity survey was competed over claim S-107367.
2007-2012	Fission Energy Corp.	**2007:** 8 drill holes totalling 2,222 metres drilled from November 2 to November 21. **2008:** 24 drill holes totalling 9,298 metres drilled from March 21 to August 21; 109.3 line-kilometres of DC-resistivity surveying from March 27 to May 14, 2008; 2,108 gravity stations and 231.5 line-kilometres of magnetic surveys. **2009:** 29 drill holes totalling 10,081 metres drilled from January 14 to August 25; 8,867 line-kilometres of airborne magnetic surveying from July 23 to August 4; 115.4 line-kilometres of 3D resistivity surveying; 99.0 line-kilometres of magnetic surveying completed from March 12 to April 25 **2010:** 52 drill holes totalling 16,422 metres drilled from January 19 September 7; 73.6 line-kilometres of induced polarization (I.P.) ground geophysical surveying from January 6 to February 24. **2011:** 103 drill holes totalling 33,301 metres from January 9 through July 20; 105.0 line-kilometres of moving-loop electromagnetic surveying; 98.2 line-kilometres of pole-pole array DC-Resistivity surveying; 833 metres of borehole transient electromagnetic surveying (BHTEM) in drill holes WAT11-161B and WAT11-211 on March 2 and July 13 to July 14.

Period	Operator	Summary
		2012: 113 drill holes totalling 39,507 metres from January 12 August 1; 50.3 line-kilometres of moving-loop electromagnetic surveying; 33.4 line-kilometres of resistivity surveying; 1,180 metres of borehole transient electromagnetic surveying (BHTEM)
2013-2018	Denison Mines Corp.	**2013:** 74 diamond drill holes totalling 22,940.7 metres were completed, the bulk of which were in the immediate vicinity of the J Zone. Also 62.0 kilometres of line cutting and a 50.5 line-kilometre IP-resistivity survey on claim S-107364. **2014:** 10 diamond drill holes totalling 2,976 metres, line-cutting totalling 60 line-kilometres, and 24 lines of DC-IP resistivity surveying totalling 40.4 line-kilometres. **2015:** 12 drill holes for a total of 4,447 metres and 28.8 kilometres of DC-IP resistivity surveying on claims S-107364 and S-107370. **2016:** 8 drill holes totalling 3,153 metres and five line nine kilometre DC-IP resistivity survey over the WAT16-G1 grid on disposition S-107370. Denison also completed a 21 line 115.2 kilometre DC-IP resistivity survey over the WAT16-G2 grid on dispositions S-107361, S-107362 and S-111278. **2017:** 20 drill holes for a total of 8,531 metres was completed by Denison; drilling was conducted on the WAT16-G2 grid and the Discovery Bay 2008 grid. **2018:** 38 drill holes totalling 13,106 metres was completed during 2018 and a fall DC-IP resistivity ground survey along the eastern margin of the property which aimed to map the southwest extension of the Midwest structure to the immediate south of the Midwest property claims.

Historical drilling data within the current Waterbury Lake property dispositions (S-107359, S-107361 through S-107368, S-107370, S-107373, S-111276 and S-111278) comprises 624 diamond drill holes totalling 202,031 metres, as documented in the Denison Mines Corp database. Of this dataset, drilling on the J Zone deposit comprises 268 of these holes and drilling on the Huskie zone target comprises 30 holes that were successfully completed to depth.

6.2 Discovery

6.2.1 Fission Energy Corp. 2007 - 2012

The J Zone uranium deposit was discovered during the winter 2010 drill program at Waterbury Lake. The second drill hole of the campaign, WAT10-063A, was an angled hole drilled from a peninsula extending into McMahon Lake. It intersected 10.5 metres of uranium mineralization grading 1.91 % U_3O_8, including 1.0 metre grading 13.87 % U_3O_8 as well as an additional four meters grading at 0.16 % U_3O_8.The J Zone deposit discovery was made after Hathor Uranium had discovered the Roughrider Uranium deposit under the northern limb of McMahon Lake in 2008. Drill hole MWNE-08-12 intersected 5.29% U_3O_8 over 3.3 metres during a winter drill campaign which subsequently led Fission to focus in on a significant mineralized trend immediately adjacent to the southeastern boundary of disposition S-107370.

6.2.2 Denison Mines Corp. 2013 - Present

Denison Mines discovered the Huskie deposit in 2017 with the intersection 9.103% U_3O_8 over 3.7 metres, including 16.78% U_3O_8 over 2 metres, from 306.5 to 310.2 metres depth in drill hole WAT17-466A. Denison was following up on weakly elevated uranium intersected in WAT08-029 and anomalous alteration and structure in WAT09-053.

6.3 Historical Resource and Reserve Estimations

6.3.1 J Zone

GeoVector Management Inc. ("GeoVector") was contracted in 2011 by Fission to complete an initial resource estimates for the J Zone. The J Zone deposit was estimated to contain an Indicated resource totalling 7,367,000 lbs. based on 168,000 tonnes at an average grade of 2.00% U_3O_8. An additional 1,511,000 lbs. based on 150,000 tonnes averaging 0.50% U_3O_8 is classified as an Inferred mineral resource.

The resource was determined from the 7,377 assay results in 142 drill holes totalling 43,900 m of drilling completed by Fission between January, 2010 and August, 2011. General spacing of the drill holes is 10m-50m. The resource estimate is categorized as Indicated and Inferred as defined by the Canadian Institute of Mining and Metallurgy guidelines for resource reporting. Mineral resources do not demonstrate economic viability, and there is no certainty that these mineral resources will be converted into mineable reserves once economic considerations are applied.

Subsequent to the release of the first resource Fission completed additional drilling on the Property, including step-out and infill drill holes on the J Zone, which were completed during a winter (January to April, 2012) and a summer (June to August, 2012) drill program.

GeoVector was contracted by Fission in 2012 to complete an updated resource estimates for the J Zone and to prepare a technical report on the updated resource estimate in compliance with the requirements of NI 43-101, based on the results of the 2012 drill programs, GeoVector estimated a range of Indicated and Inferred resources at various U_3O_8 cut-off grades (COG) for the J Zone. The updated Indicated and inferred resources are stated using a grade cut-off of 0.10% U_3O_8. The previous resource statement was made using a grade cut-off of 0.05% U_3O_8. A cut-off grade of 0.10% is considered a reasonable economic cut-off grade for the J Zone to maximize the grade of the resource while maintaining a coherent model of the resource.

Using a base case COG of 0.10% U_3O_8 the J Zone deposit was estimated to contain an Indicated resource totaling 10,284,000 lbs. based on 307,000 tonnes at an average grade of 1.50% U_3O_8. An additional 2,747,000 lbs. based on 138,000 tonnes averaging 0.90% U_3O_8 is classified as an Inferred mineral resource.

The resource was defined by 10,567 assay samples collected from 200 drill holes totaling 62,416 m completed by Fission between January, 2010 and August, 2012. General spacing of the drill holes is 5m-20m.

Fission completed drilling on the Property, including step-out and infill drill holes on the J Zone during a 2013 winter (08 January to 17 March, 2013) drill program. A total of 68 drill holes were completed totalling 21,012.9 meters (including failed holes). Mineralization was found in 35 holes or 51% of the holes in the program. All holes were targeted to further delineate and expand the mineralized area of the J Zone.

In 2013, GeoVector was contracted by Denison to complete a new resource estimate for the J Zone based on all drilling completed on the property to date. During a review of the previous resource, GeoVector identified a significant error in that previous resource estimate. After an in depth evaluation of resource model, interpolation parameters and estimation parameters the error was identified. Essentially all partial resource blocks which intersected the resource model were treated as 100% blocks. This led to an overestimation of the resource volume, tonnes and ultimately the U_3O_8 lbs.

Table 6-2 shows the magnitude of the error by comparing the incorrect results with a corrected re-run of the data at that time.

Table 6-2: Review of the 2012 resource estimate.

	Cut-off Grade (U_3O_8 %)	**Tonnes**	**U_3O_8 (%)**	
			Grade	**Lbs**
	Indicated			
2012 Reported Resource	0.10%	307,000	1.50	10,284,000
2012 Corrected Resource	0.10%	221,000	1.70	8,239,000
Correction Factor		-28%	+11%	-20%
	Inferred			
2012 Reported Resource	0.10%	138,000	0.90	2,747,000
2012 Corrected Resource	0.10%	69,000	0.80	1,276,000
Correction Factor		-50%	-7%	-53%

Differences between the GeoVector corrected 2012 resource model and the 2013 resource model prepared by GeoVector and reported herein are largely due to the following:

- Additional drilling completed by Fission in 2013
- Changes in the specific gravity values used for grade estimation
- Changes in the block model parameters
- Changes in the grade estimation procedures
- Changes in the interpolation parameters

6.3.2 Huskie

There are no historical resources or reserves estimated for the Huskie deposit.

7 GEOLOGICAL SETTING

7.1 Regional Geology

The project area is within the Western Churchill Structural Province of the Canadian Shield, near the eastern margin of the Athabasca Basin (Figure 7-1). The bedrock geology of the area consists of Precambrian crystalline metamorphic rocks made up of Archean granitic gneisses, Paleoproterozoic metasedimentary gneisses, and Hudsonian intrusive rocks, all unconformably overlain by flat-lying, unmetamorphosed sandstones and conglomerates of the Athabasca Group.

In northwestern Saskatchewan, the crystalline metamorphic rocks of the Canadian Shield are divided into two chronotectonic units (Figure 7-1 and Figure 7-2), the Archean Western Churchill Province and the Proterozoic Trans-Hudson Orogeny (THO). The Western Churchill Province is subdivided into the Rae Subprovince and the Hearne Subprovince, separated by the Snowbird Tectonic Zone (STZ; Figure 7-1). In this region, the Cree Lake Zone makes up the south-eastern margin of the Hearne Subprovince (Figure 7-6**;** (Annesley, et al., 2005)). This Zone is subdivided into the Virgin River Domain, the Mudjatik Domain, and the Wollaston Domain (Figure 7-2)**.**

The basement rocks of the Cree Lake Zone were covered by Paleoproterozoic sediments and were then deformed and metamorphosed during the approximately 1,800 Ma continent–continent collision of the THO. The eastern half of the unmetamorphosed approximately 1,700 Ma Athabasca Basin overlies these metamorphic rocks. The Wollaston Domain fold and thrust belt forms the south-eastern part of the Cree Lake Zone (Figure 7-6). The dominant NE-trending strike-slip transpressional component of the fold–thrust belt has been described by (Annesley, et al., 2005). Peraluminous S-type granites and pegmatoids (“Hudsonian granites”), derived from partial melting of Wollaston Domain metasediments during the THO, also occur along major long-lived NE-trending structures (Annesley, et al., 2010). The unconformity between Paleoproterozoic graphitic pelitic gneiss lithologies of the Wollaston Group and the Athabasca Group is the site of numerous unconformity-type uranium deposits (Hoeve & Sibbald, 1978); (Hoeve & Quirt, 1984); (Thomas, et al., 2000); (Jefferson, et al., 2007b) (Jefferson, et al., 2007c)).

The Athabasca Group fills the broad, oval, intracratonic Athabasca Basin that extends 425 kilometres in an east-west direction and 225 kilometres in a north-south direction (Figure 7-1, Figure 7-2 and Figure 7-3). The Athabasca Group has a maximum preserved thickness of approximately 1,500 metres and it consists of flat-lying Paleo- to Mesoproterozoic (Helikian) sandstone (orthoquartzite) with minor conglomerate and siltstone, and is dominantly quartz arenite (Ramaekers, 1990); (Ramaekers, et al., 2007)). It lies with a marked angular unconformity above the intensely deformed and metamorphosed Archean and Paleoproterozoic crystalline basement rocks. These sandstones were deposited in several second-order sequences by braided stream systems and typically show abundant cross-bedding and alternating coarser- and finer- grained units.

Mackenzie Swarm diabase dikes, dated at 1267 Ma, dominantly oriented northwest, and ranging from a few to a hundred metres in width, have intruded into both the Athabasca Group and the underlying basement ((Quirt, 1993); (Hulbert, et al., 1993)). In addition, the 1107 Ma Moore Lakes gabbro-diabase complex has intruded the Athabasca sediments in the southeast corner of the basin.

The Athabasca area is mantled by glacial drift, outwash, and lacustrine sands, forming an undulating, lake-covered plain, with generally less than 30 metres of relief. Up to 40 metres, but generally 5 to 20 metres, of glacial materials covers the Midwest project area, resulting in extremely poor outcrop exposure.

7.1.1 Sub-Athabasca Crystalline Metamorphic Basement

The basement in the eastern half of the Athabasca Basin is composed of rocks of the Wollaston and Mudjatik lithostructural domains, both being part of the Cree Lake Zone Figure 7-2, Figure 7-3 and Figure 7-4). The Cree Lake Zone is bounded on the northwest by the Virgin River Shear Zone and Black Lake Fault (STZ; (Hoffman, 1990)) and on the southeast by the Needle Falls Shear Zone.

The Wollaston Domain is a distinctly northeast-trending fold-thrust belt composed of Paleoproterozoic Wollaston Group metasediments overlying Archean granitoid gneisses. The Mudjatik Domain is a northeast-trending, shear-bounded belt consisting mainly of Archean felsic gneisses ((Annesley, et al., 2005); (Jeanneret, et al., 2016)). Both domains have undergone complex polyphase deformation and metamorphism during the THO, including intrusion of metaluminous and peraluminous granitic bodies.

The Mudjatik Domain (Figure 7-2 and Figure 7-1) consists of variably reworked Archean granitic orthogneisses, locally charnockitic, and numerous small remnants of polydeformed Aphebian metasedimentary rocks similar to Wollaston Group metasediments. This domain displays a mixed pattern of aeromagnetic highs and lows.

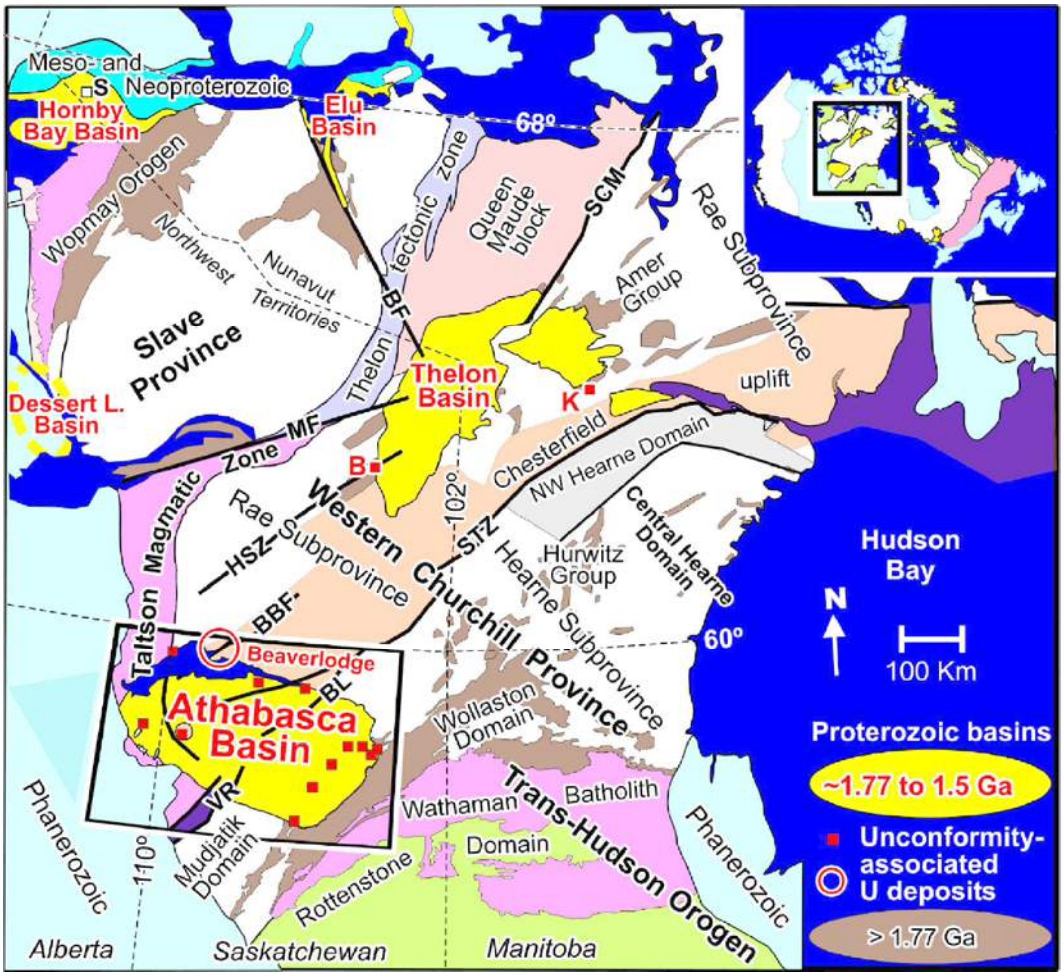


Figure 7-1: Location of the Athabasca Basin relative to the geology of the northwestern Canadian Shield (Jefferson, et al., 2007b).

Legend: Red squares - U deposits/prospects (K - Kiggavik, B - Boomerang). STZ, VR, BL, BBF, HSZ, MF, BF - crustal-scale fault zones (Snowbird Tectonic Zone, Virgin River, Black Lake, Black Bay Fault, Howard Shear Zone, McDonald Fault, Bathurst Fault).

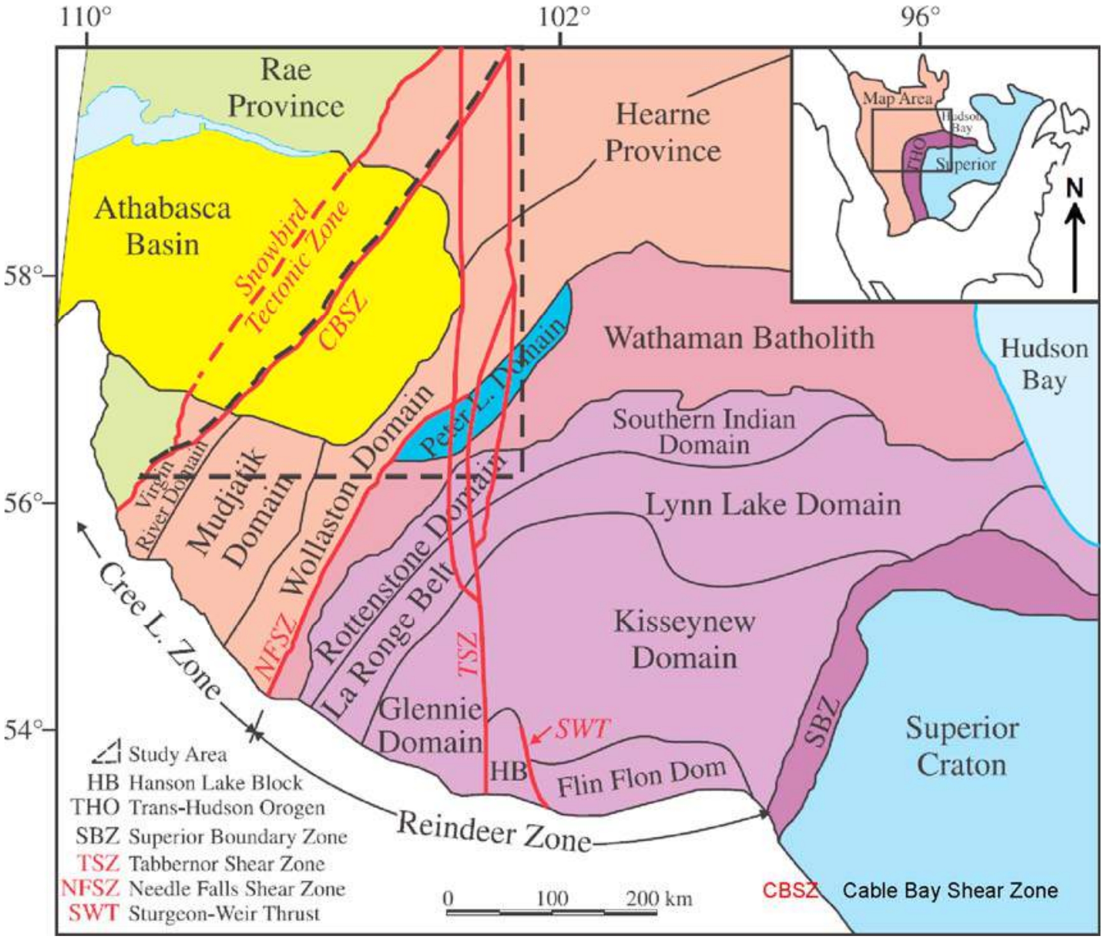


Figure 7-2: Lithotectonic domains in northern Saskatchewan and Manitoba (Annesley et al., 2005).

To the east, the metasedimentary rocks of the Wollaston Domain (Figure 7-2, Figure 7-3, and Table 7-1) rest unconformably on Archean granitoid gneiss. This Domain comprises the Wollaston–Mudjatik Transition Zone (“WMTZ”), the western Wollaston Domain, and the eastern Wollaston Domain. The WMTZ forms a transition from the linear Wollaston fold and thrust belt to the dome and basin interference-folded Mudjatik Domain.

The metasedimentary lithologies in the Wollaston Domain comprise three metasedimentary supracrustal successions deposited in rift, passive margin, and foreland basin environments (Tran, et al., 2008). These rocks overlie and are locally intercalated with the Archean orthogneisses.

The Western Wollaston Domain and the WMTZ are structurally complex, consisting of elongated Archean granitoid domes (mega-boudins), dominant thrust- and strike-slip structures, and related duplex structures (Annesley, et al., 2005). The Western Wollaston Domain is characterized by an overall aeromagnetic low related to the dominant Paleoproterozoic Wollaston Group metasedimentary lithologies.

The lower sequence of the Wollaston Group consists mainly of, from the bottom, graphitic pelitic gneiss, followed by garnetite, pelitic gneiss, calc-pelitic gneiss, psammopelitic gneiss, psammitic gneiss, and meta-quartzite. The Wollaston Group rocks are interpreted to occupy synclinal structures. They originally consisted of shelf to miogeosynclinal sediments. Following Hudsonian metamorphism and deformation, these rocks now overlie, and are locally intercalated with, the Archean orthogneissic basement.

The eastern Wollaston Domain (Figure 7-2 and Figure 7-4) corresponds to an aeromagnetic high and is made up of the upper sequence of the Paleoproterozoic Wollaston Group. It consists of calc-silicate- and magnetite-bearing siliciclastic metasediments overlying a lower Wollaston Group sequence of magnetite-rich to magnetite-poor pelitic to psammitic gneisses. Archean orthogneisses are locally infolded.

The eastern flank of the Waterbury Lake Project area is interpreted to be within the Wollaston-Mudjatik Transition Zone (WMTZ) and the remainder of the Waterbury Lake Project is interpreted to be within the Mudjatik Domain.

Sub-vertical, north-northeast-trending ductile and brittle-ductile fault zones that developed during the Hudsonian Orogeny (Figure 7-4) are dominant structural features within the eastern Athabasca ((Annesley, et al., 2005); (Tourigny, et al., 2007)). These faults were commonly reactivated after the deposition of the Athabasca Group and are commonly associated with graphitic Wollaston Group stratigraphy. Post-Athabasca Group faulting, as recognized within the Wollaston Domain (Harvey & Bethune, 2007), is characterized as dominantly reverse (D5; Table 7-2) with a later, dominantly strike-slip, component (D6).

7.1.2 Hudsonian Granites/pegmatites

The basal Wollaston Group sequence of graphitic pelitic to psammopelitic gneisses contain a large volume of peraluminous [molecular $Al_2O_3/(Na_2O + K_2O + CaO) > 1$)] S-type granites that have been interpreted to be a partial (anatectic) melting phase of the metasediments near the thermal peak of the THO (Annesley, et al., 2005). These S-type granites developed mostly in zones of structural complexity, such as fold noses, sheared limbs, dilation zones, and fault intersections. It has been postulated that when the host metasediments were enriched in uranium, the anatectic crustal melts derived from partial melting were also enriched in uranium (Cuney & Friedrich, 1987). Syn-orogenic peraluminous granitoids are the most abundant and the best studied, however, there are also calc-alkaline granitoids and high-Sr–Ba granitoids (details on these lithologies in (Annesley, et al., 2005); (Jeanneret, et al., 2016)).

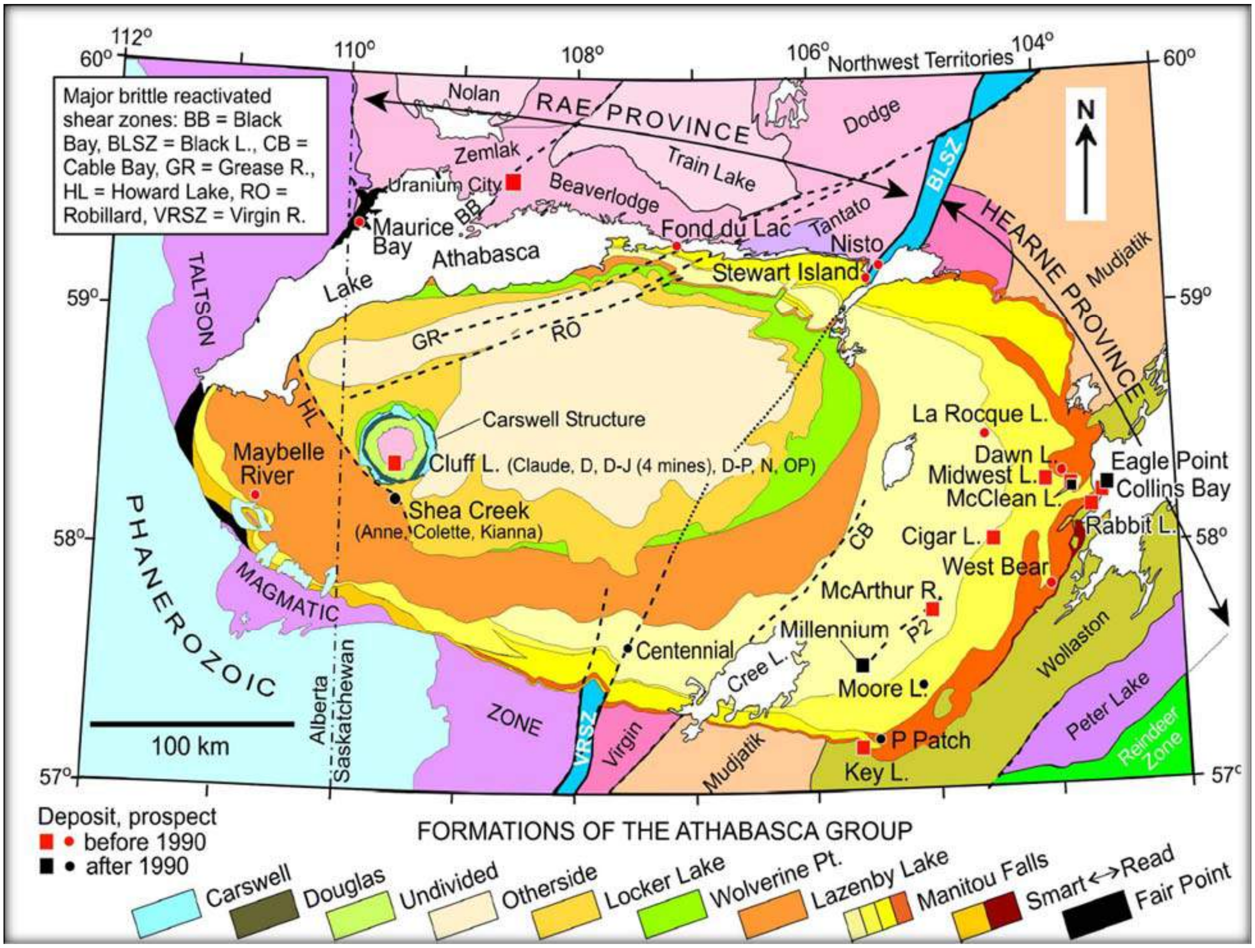


Figure 7-3: Geological setting of the Athabasca Basin and unconformity type U occurrences, northern Saskatchewan and Alberta (Jefferson, et al., 2007c).

The peraluminous granite (granitoid) suite comprises grey leucogranites, leucomicrogranites, granitic pegmatites, and very commonly observed peraluminous leucosomes (anatectic granite) in metasedimentary migmatites. The leucogranites and pegmatites are present as syn- to late-orogenic plutons, sheets, dikes, and network veins that are dominantly present in the hanging wall of thrust faults and in the footwall of normal faults. While the oldest leucogranites and granitic pegmatites belong to the grey granite suite (approximately 1840 Ma), younger (1820–1800 Ma) versions are more common, suggesting that there were pulses of leucogranite intrusion.

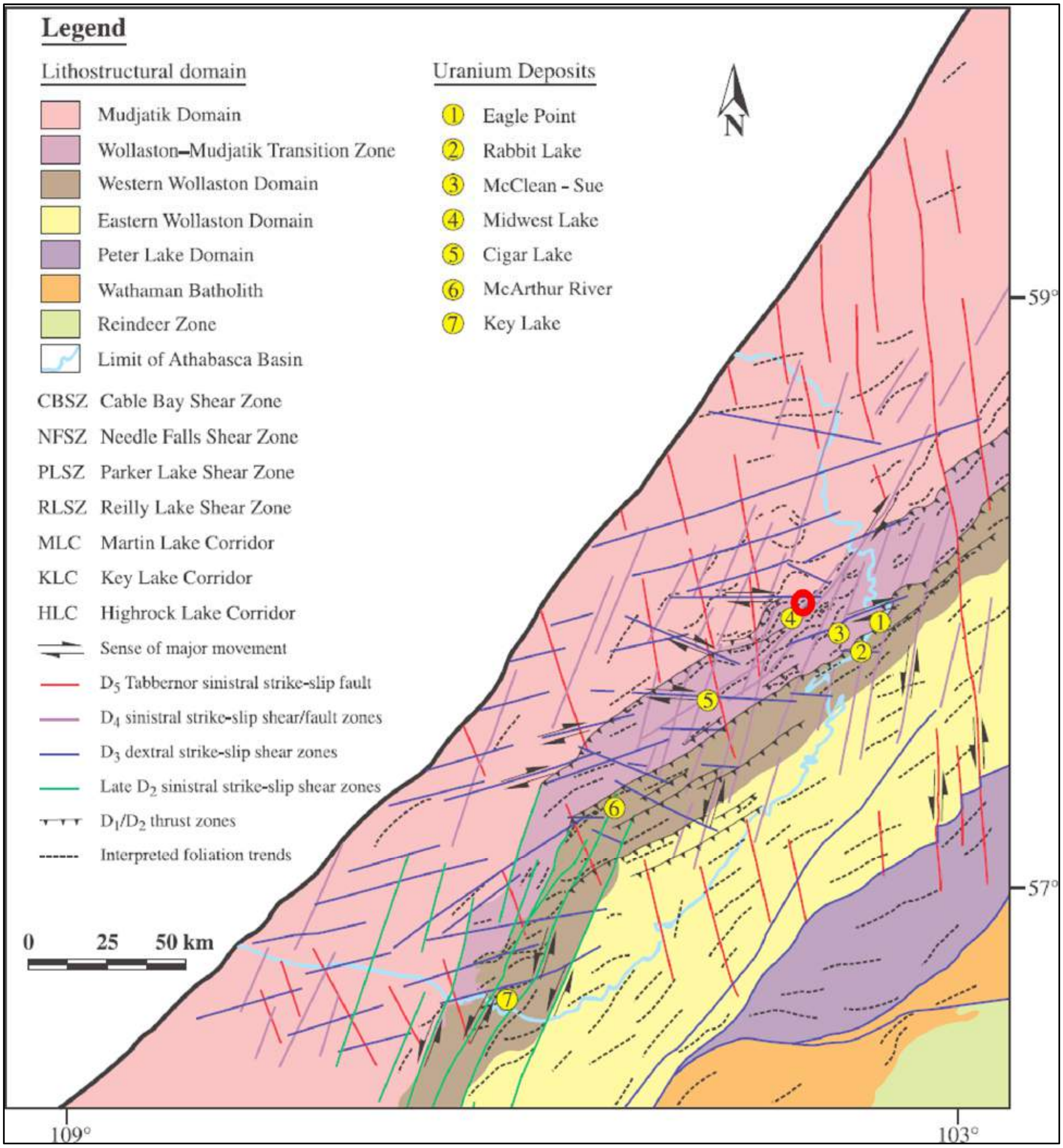


Figure 7-4: Lithotectonic geology of the eastern Athabasca region with locations of uranium deposits, including the J Zone and Huskie deposits (circled in red).

Table 7-1: Summary of basement lithologies, East and Central Athabasca Basin.

METAMORPHOSED BASEMENT - HEARNE PROVINCE EAST - CENTRAL ATHABASCA BASIN (Card & Bosman, 2007)	
MUDJATIK DOMAIN	Distribution: Underlies the central portion of the Athabasca Basin. Bounded in the west by the Virgin River / Black Lake Shear zone. Lithologic Units: Reworked Archean granitic orthogneisses, locally charnockitic and numerous small remnants of polydeformed Aphebian metasedimentary rocks (pelitic to psammo-pelitic gneiss) similar to Wollaston Group metasediments. Metamorphism: Granulite (approximately 2.9 – 2.8 Ga near Mudjatik/Virgin Domains; 2.64 -2.58 Ga near Mudjatik/Wollaston Domains) overprinted by amphibolite (1900 Ma) to upper greenschist grade. These retrograde events may also, in part, represent effects of the Trans-Hudson Orogen (ca. 1800 Ma). Deformation: Recumbent regional gneissosity (D_1), WNW striking upright folds (D_2), two sets of NNE to NE striking folds (D_3 and D_4).
WOLLASTON DOMAIN	Distribution: Underlies the eastern portion of the Athabasca Basin and bounded in the east by the Needle falls shear zone. Generally a tightly folded northeast trending belt of Paleoproterozoic metasedimentary rocks and Archean granitoids. Lithologic Units: The Wollaston Domain contains a significant proportion of Archean granitoid gneiss exposed in structural domes. The Wollaston Group lies unconformably upon the granitoid gneiss. The lower Wollaston Group consists of graphitic pelitic gneiss, followed by garnetite, pelitic gneiss, calc-pelitic gneiss, psammopelitic gneiss, psammitic gneiss, and meta-quartzite. The upper Wollaston Group consists of calc-silicate- and magnetite-bearing siliciclastic metasediments. Metamorphism: upper green schist to lower amphibolite facies along parts of the eastern margin of Wollaston domain, but increases abruptly westward to upper amphibolite. Age dates range from 2550 to 1770 Ga. Deformation: Foliation, isoclinal folding (D_1), tight-isoclinal folding (D_2), NE open and/or tight folding (D_3), NW open folding (D_4).

The grey granites form planar-layered bodies to dikes that are leucocratic, massive- to well-foliated, fine- to coarse-grained, and commonly equigranular. They are weakly to moderately peraluminous and contain quartz, Na-plagioclase, K-feldspar, and biotite, with lesser muscovite, garnet, cordierite, and locally sillimanite, and accessory monazite and zircon. Examples are present on Harrison Peninsula (Collins Bay to Eagle Point).

Table 7-2: Comparison of deformational events in the Wollaston Domain (Harvey & Bethune, 2007).

	Deformational Event	(Harvey & Bethune, 2007)	(Harvey, 1999)	(Tran, 2001)	(Lewry & Sibbald, 1980)	(Portella & Annesley, 2000a)	(Tourigny, et al., 2001)
Postdates Athabasca Group	Faulting (largely strike-slip)	D_6	D_5	D_5	ND	D_5	Post-D3
	Faulting (largely reverse)	D_5	D_5	D_5	ND	D_4	Post-D3
Predates Athabasca Group	NW close to gentle folds	D_4	D_4	D_4	Post-D_3	D_3	D_3
	Faulting	Late D_3	Post-D_3	Late D_3	ND	Late D_2	Post D_2
	Upright NE folding	D_3	D_3	D_3	D_3	D_2	D_2
	Tight to isoclinal folds	D_2	D_2	D_2	D_2*	ND	D_1
	Early ductile faulting	Late D_1	Late D_1	Late D_1	ND	D_1	Late D_1
	Isoclinal folds	D_1	D_1	D_1	ND	D_1	D_1
	Main regional foliation	D_1	D_1	D_1	D_1	D_1	D_1

ND: not discussed by authors

*Not recognized in Wollaston Domain

Pink K-feldspar-dominant metaluminous porphyritic granites (for example, in the Rabbit Lake area) are massive to moderately well foliated, fine- to coarse-grained, inequigranular to porphyritic, and are locally xenolithic. They are characterized by K-feldspar phenocrysts up to six millimetres in size that are set in a fine- to medium-grained matrix of quartz, K-feldspar, biotite, subordinate plagioclase, and accessory allanite, epidote, apatite, monazite, zircon, fluorite, titanite, opaque minerals, and xenocrystic garnet. These calc-alkaline granites are highly-differentiated, are metaluminous to corundum normative, and are weakly peraluminous, containing elevated contents of K_2O+Na_2O, Ba, Ga, Rb, Th, U, LREEs, Y, and Zr.

Leucocratic microgranites, granitic pegmatites, and peraluminous anatectic leucosomes (remobilized partial melt material) in metasedimentary migmatites are ubiquitous in the Wollaston Domain. The leucogranites form syn- to late-orogenic plutons, sheets, dikes, and vein networks with variably concordant to discordant contacts, are typically metre-scale in thickness, and are very fine- to medium-grained, essentially equigranular, and are massive to well-foliated. They are high-silica (70–78 wt% SiO_2), extremely leucocratic rocks, containing low CaO and Sr.

Most granitic pegmatites intruding the basement rocks as sills and dikes are composed of predominant quartz and K-feldspar, subordinate plagioclase and biotite, and trace opaque minerals. Locally, the mafic mineral present is tourmaline, rather than biotite. Compositional zoning from feldspar-rich, near margins, to quartz-dominant, in the centre, is common in thicker examples. In general, they are highly variable in composition, ranging from alkali granite to granodiorite. They are larger versions of the leucosomes found in the migmatitic varieties of Wollaston Group pelitic and psammopelitic gneisses, and are compositionally similar to the grey granites, suggesting a common origin. Most of the S-type anatectic granitic pegmatites are strongly potassic (high K_2O/Na_2O) and peraluminous.

Uranium-bearing pegmatites have been found in several areas, including Fraser Lakes (McKechnie, et al., 2013), Kulyk Lake (McKeough & Lentz, 2011), and Moore Lakes (Annesley, et al., 2000). At Moore Lakes, the rock is composed mainly of quartz, grey feldspar, and biotite, minor amounts of pyrite, and accessory apatite, zircon, pyrite, ilmenite, and uraninite. The uraninite grains are cubic, range from 0.05 to 0.50 millimetres in size, and are found within biotite flakes. Mineralized pegmatites/leucogranites in the Fraser Lakes and Kulyk Lake areas range from simple granitic types (quartz, K-feldspar, plagioclase, with lesser biotite, amphibole) to more mineralogically-complex types with simple core and complex margins (plagioclase-dominant with K-feldspar, biotite, amphibole, magnetite/ilmenite, and little quartz; or Ca-pyroxene-dominant with tremolite/actinolite, biotite, and magnetite/ilmenite). These pegmatites are peraluminous and are variably enriched in U (± Th), with Th/U approximately 1 (containing uraninite, thorite, zircon, and allanite) or in Th and LREEs, with Th/U >2 (containing monazite, uranothorite, and zircon). Formation of the U-, Th-, and REE-enriched pegmatites is ascribed to partial melting of a metasedimentary rock-dominated source, entrainment of accessory minerals as xenocrysts, and assimilation-fractional crystallization (AFC) processes ((McKeough & Lentz, 2011); (McKechnie, et al., 2013)).

7.1.3 Paleoweathering

The unconformable contact between the Paleoproterozoic Athabasca Group sandstone and the underlying crystalline basement rocks is typically marked by several metres of clay mineral-rich and colour- and mineralogically-zoned post-Hudsonian regolith (paleoweathering) that can range in thickness from 0 to >80 metres ((Hoeve & Quirt, 1984); (Macdonald, 1985)). The thickness of the profile is highly dependent on the composition of the parent rock, as well as the presence of relatively permeable basement structures. Below an upper clay-rich (kaolinitic) and hematitic red zone, there is an illitic to chloritic red-green zone that is transitional to a chloritic to illitic, variably light to dark green zone. The green zone material grades downward, generally over a few metres, into fresh or retrograde-metamorphic basement.

7.1.4 Athabasca Group Sandstone

The formation of the Athabasca Basin is interpreted to have started with the development of sedimentation into a series of northeast-southwest-oriented sub-basins with subsequent sedimentary coalescence into the greater Athabasca Basin (Armstrong & Ramaekers, 1985). The formation of the sub-basins was linked to movement on major northeast-southwest structures associated with the Trans-Hudsonian Orogeny and rooted in the underlying metasediments and granites (Cuney & Kyser, 2008). Sub-basin formation could have been initiated at circa 1750 Ma (based on timing of rapid uplift in the region of the THO; (Hiatt & Kyser, 2007)). Alternatively, (Rainbird, et al., 2007) suggests the Athabasca Basin was formed as a result of a broad thermal subsidence mechanism based on the geometry, sequence architecture, east-west elongation, and dish-shaped outline. A depositional age of 1740-1730 Ma for the basal Athabasca Group was estimated by (Rainbird, et al., 2007). However, actual sedimentary deposition may not have occurred until after circa 1710-1700 Ma (based on ages of greenschist facies retrograde mineral assemblages (Jeanneret, et al., 2016)).

The sub-Athabasca unconformity topography suggests a gentle inward slope from the east, moderate to steep slopes from the north and south, and a steeper slope from the west. Locally, pre-Athabasca fanglomerate (fault scarp talus deposits) is present below the basal Athabasca sandstone, for example, at Sue C, Read Lake, Wheeler River, and McArthur River (Quirt, 2000). In general, the Athabasca Group sediments consist of unmetamorphosed quartz-rich pebbly sandstone (quartz arenite; orthoquartzite) (Ramaekers, 1990); (Ramaekers, et al., 2007), with intercalated conglomerate and minor siltstone intervals. There are four major fining-upwards sequences, separated by unconformities, that are recognized in the Athabasca Group ((Ramaekers, et al., 2007); Table 7-3)). Sequence 1 (Fidler deposystem) comprises the Fair Point Formation, Sequence 2 (Ahenakew, Moosonees and Karras deposystems) includes the Read, Smart, and Manitou Falls Formations, Sequence 3 (Bourassa deposystem) includes the Lazenby Lake and Wolverine Point Formations, and Sequence 4 (McLeod deposystem) includes the Locker Lake, Otherside, Douglas, and Carswell Formations.

Sequence 1 was deposited in the Jackfish Sub-basin during the latest stage of the THO (the final actions of Superior-Hearne cratonic collision), however, formation of this sub-basin may have been more related to movements associated with Taltson-Thelon structures. Sequence 2 may have been deposited in escape basins, while the upper sequences in the Athabasca Basin may reflect a continental-scale extensional event around 1.40 Ga (Ramaekers & Catuneanu, 2012).

The sandstone is poorly-sorted near the base of the Athabasca Group, where conglomerates form discontinuous layers of variable thickness. Minor shale- and siltstone-rich formations occur in the upper half of the succession. Locally, the rocks may be silicified and very well indurated (e.g. upper Manitou Falls Formation – MF Dunlop member) or partly clay-altered and de-silicified.

Most of the Athabasca sandstone strata were deposited in alluvial fans and in braided streams with generally horizontally-bedded alternating coarser and finer units, with abundant cross-bedding observed. The strata are nearly flat-lying or dip only a few degrees, except within the Carswell Structure and near faults. No regional folds have been recognized. Fractures and faults trend mainly in east-northeast, north-northeast, north-south, and northwest directions. Fractures are more abundant in the Athabasca strata above buried faults in the basement, suggesting reactivation along these pre-Athabasca faults. Drilling at several uranium deposits has revealed local block faulting, where the unconformity has been fault-offset vertically by as much as 40 metres in a reverse sense. Thrust faulting has affected the sandstone along the eastern margin of the basin (e.g. in the Collins Bay area).

The Manitou Falls Formation, which comprises most of the strata in the eastern half of the basin, is subdivided into four units from bottom to top (Ramaekers, 1990);Table 7-3): MFa (poorly sorted sandstone and minor conglomerate); MFb (interbedded sandstone and conglomerate); MFc (sandstone with rare clay intraclasts); and MFd (fine- to medium-grained sandstone with abundant (>1 %) clay intraclasts). Further mapping has subdivided the original MFa unit into two new formations, the Read Formation and the Smart Formation (Ramaekers, et al., 2007). The Manitou Falls strata nomenclature was also reassigned: conglomeratic MFb (Bird Member), sandy MFc (Collins Member), and clay intraclast-rich MFd (Dunlop Member). The sandstone in the eastern portion of the Athabasca Basin ranges in thickness from 0 to over 900 metres.

Typically, the sandstone contains from 1% to 5% intergranular pore space that is filled with matrix clay. The matrix clay mineralogy is relatively consistent within sedimentary units and allows delineation of a clay mineral stratigraphy that is comparable to the lithostratigraphy (Hoeve & Quirt, 1984). The background (diagenetic) matrix clay mineralogy comprises kaolin (dickite and lesser kaolinite) and illite, ± hematite, and variable amounts of quartz overgrowth cement.

The sandstone ranges in thickness from 200 to 370 metres within the Waterbury Lake Project and consists of the Manitou Falls Formation; MFa, MFb and MFc Members.

7.1.5 Quaternary Geology

The surficial deposits in the Waterbury Lake project area are of Quaternary age and consist largely of tens of metres-thick Pleistocene bouldery, silty-sand till plain resting directly on the sandstone bedrock. Locally, the upper half to one-metre of underlying sandstone bedrock is frost-heaved (felsenmeer). Drumlins, up to 15 metres in height, trace the latest ice advance from the northeast and are oriented NE-SW. The glacial till is locally overlain by glacio-fluvial sand and gravel, followed by deposition of recent sand and silt.

Table 7-3: Stratigraphy of the Athabasca Basin.

STRATIGRAPHY OF THE HELIKIAN ATHABASCA BASIN
(Mirror, Cree, and Jackfish Sub-basins)
(Ramaekers, 1990); (Ramaekers, et al., 2007).

Sequence and Deposystem	Environment	Brief Formation Descriptions
Sequence 4 McLeod	Marine platform-intertidal	**CARSWELL Formation:** Dolomitic, basal Sandstone, Mudstone. dolarenites with x-beds & ripple marks. Stromatolites common. Oolites up to 3 mm diameter in beds up to 15 cm thick. -lower contact at lowest prominent carbonate bed.
*(Occurs only in the annular ring of the Carswell Structure)	Fluviatile-marine	**DOUGLAS Formation:** Thinly bedded & laminated very fine grained Sandstone, Siltstone and Mudstone. -very friable. Variously calcareous and carbonaceous. -graded Sandstone beds (0.25-5 cm thick). -lower contact at first pebbly sandstone beds (base of 1st black mudstone).
	Fluviatile- Possible marine component at top	**OTHERSIDE Formation:** Sandstone, Siltstone (minor 5 cm to 3 metres thick). -Bedding-parallel granules. -clay intraclasts common. -quartz pebbles at base of formation. -lower contact gradational.
	Fluviatile	**LOCKER LAKE Formation:** Pebbly to conglomeratic Sandstone (>16 mm diameter) and minor Siltstone (1-20 cm thick). -no clay intraclasts. -minor mudstone near base. -lower contact disconformable (Sequence 3 &4 boundary).
Sequence 3 Bourassa	Fluviatile and Playa lake	**WOLVERINE POINT Formation:** Sandstone, Siltstone (1 to >50 cm thick). -clay-rich, local hard red & green clay intraclasts -very friable locally. -clay intraclasts common. -local vitric tuff beds. -abrupt lower contact where common mudstone beds disappear.
	Fluviatile	**LAZENBY LAKE Formation:** Pebbly Sandstone, fine grained quartz arenite (isolated quartz pebbles 4-30 mm diameter). Mostly quartz arenite with low clay content; minor mudstone and hard, phosphatic beds in the upper part. -low angle cross-bedding, local slumped bedding lower in section.

		-Base of the Mirror Subbasin in SW Athabasca Basin. -lower contact disconformable (or correlative unconformity, seq. 2 & 3 boundary).
Sequence 2 Ahenakew, Moosonees and Karras	Fluviatile	**MANITOU FALLS Formation:** Quartz-pebble conglomerate, fine to coarse grained arenite, Siltstone and lesser Mudstone. -clay intraclasts common in some members. -bulk of sedimentation in the Cree Subbasin. -5 members; from top: Dunlop, Collins, Warnes & Raibl (southern & northern Cree Subbasin, respectively) and Bird. -lower contact unconformable on Smart and/or Read formations, where not directly lying on crystalline basement.
	Fluviatile	**SMART Formation:** Fine grained to coarse grained quartz arenite and lesser pebbly mudstone. -upper part at least two fining-up quartz arenite units. -fine to coarse grained. -lower part discontinuous pebbly mudstone. -T and/or Fair Point Formation of the Jackfish Subbasin.
	Fluviatile with lesser Aeolian	**READ Formation:** Fine grained to coarse grained quartz arenite, quartz-pebble conglomerate and red, silty Mudstone. -discontinuous mudstone occurs at base overlain by quartz-pebble conglomerate with granule matrix and fine to medium grained ripple and cross-laminated quartz arenite at top. -distributed in the **eastern** Athabasca Basin. -lower contact unconformable on crystalline basement.
Sequence 1 Fidler	Fluviatile	**FAIR POINT Formation:** Pebbly sandstone with polymictic pebble conglomerate and quartz arenite. Minor mudstone. -distribution within the Jackfish Subbasin (western Athabasca Basin) and in the Carswell Structure at Cluff Lake. -lower contact unconformable on crystalline basement.

7.1.6 Uranium Mineralization

The uranium mineralization encountered in the eastern Athabasca region is of the diagenetic-hydrothermal unconformity type. The location of this mineralization type is around the unconformity between the basal Athabasca Group and the underlying crystalline basement, (Figure 7-6), particularly graphitic pelitic gneiss of the Wollaston Group (Hoeve & Sibbald, 1978); (Hoeve & Quirt, 1984); (Wallis, et al., 1985); (Jefferson & Delaney, 2007); among others). See Section 8 of this report for information on the unconformity-type deposit type.

7.2 Local Geology

7.2.1 J Zone

The J Zone is primarily comprised by an east-west trending faulted package of variably graphitic and pyritic metasediments bounded by orthogneiss to both the north and south. The pelitic metasedimentary assemblage, which ranges in thickness from 90 to 120 metres and is moderately steep dipping to the north includes, from north to south, a roughly 50 metre thick pelitic gneiss underlain by 20 metre thick graphitic pelitic gneiss, underlain by a 10 to 15 metre thick quartz-feldspar wedge underlain by 20 metre thick graphitic pelitic gneiss, underlain by a 15 to 25 metre thick pelitic gneiss, then back into orthogneiss. There are discontinuous offsets at the unconformity that range from a few metres to as much as ten metres. It is depicted in plan view in Figure 7-5 and on schematic cross-section in Figure 7-6.

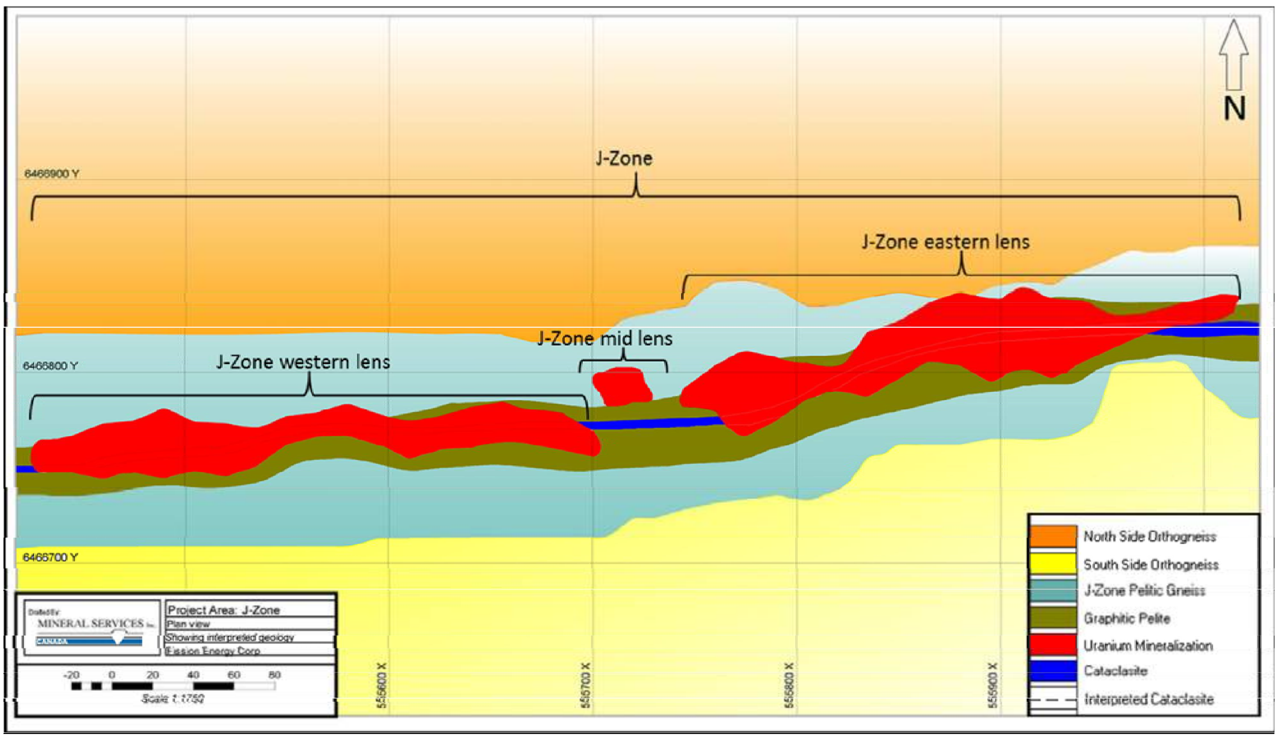


Figure 7-5: Plan view at 280 masl (roughly at the unconformity) showing the modeled geology of the J Zone in relation to mineralization (Armitage & Nowicki, 2012).

7.2.2 Huskie Zone

The Huskie deposit is entirely hosted within competent basement rocks below the sub-Athabasca unconformity primarily within a faulted, graphite-bearing pelitic gneiss (“graphitic gneiss”) which forms part of an east-west striking, northerly dipping package of metasedimentary rocks flanked to the north and south by granitic gneisses. The Athabasca Group sandstones that unconformably overlie the basement rocks are approximately 200 metres thick. The east-west trending faulted package of pelitic gneisses ranges in thickness from 40 to 60 metres and is moderately steep dipping to the north. There are discontinuous offsets at the unconformity that range from a few metres to as much as fourteen metres. It is depicted in plan view in Figure 7-7 and on a schematic cross-section in Figure 7-8.

7.2.3 Sub-Athabasca Crystalline Metamorphic Basement

The Waterbury Lake project is located over the Mudjatik-Wollaston Transition Zone (MWTZ). This zone is currently host to all of the producing uranium deposits in the Athabasca Basin. The basement beneath the Waterbury Lake project is comprised of approximately northeast trending corridors of metasediments wrapping around orthogneissic domes and locally in the Discovery Bay trend an east-west trending corridor of metasediments bounded to the north and south by thick zones of orthogneiss that, based on interpretation of aeromagnetic images, may represent two large dome structures. Based on a review of the Wollaston Supergroup by Yeo and Delaney the metasediments and the orthogneiss domes are interpreted to be Paleoproterozoic and Archean in age, respectively (Yeo & Delaney, 2007).

The Discovery Bay metasedimentary corridor appears to comprise a systematic sequence of steeply dipping, east-west striking units including: medium to fine grained, weakly graphitic cordierite-almandine pelitic gneiss, informally termed the ‘typical J Zone pelitic gneiss’; graphite-sulphide rich pelitic gneiss; cordierite-almandine augen gneiss; and thin lenses of garnetite which appear to be more abundant along the southern edge of the corridor. Intercalated, lenses of semi-pelite, quartzite and psammitic gneiss are also occasionally present throughout the corridor. The metasediment stratigraphy in the portion of the corridor is poorly understood as J Zone mineralization dominantly occurs to the south of the corridor which is where drilling has been concentrated since the initial discovery. The northern portion of the metasedimentary corridor is interpreted to be made up primarily of the typical J Zone pelitic gneiss with an intermittent lens of steeply dipping quartzo-feldspathic, possibly psammitic, gneiss present locally. South of the typical J Zone pelitic gneiss is a package of graphite-sulphide rich pelite which appears to be flanked by, or hosts internally, intermittent zones of garnet-cordierite augen gneiss. In the approximate centre of the graphite-sulphide gneiss is a steeply dipping, strongly graphitic cataclastic fault zone that is closely associated with uranium mineralization. This fault zone is commonly enriched in classic Proterozoic basin uranium pathfinder elements such as arsenic, cobalt, copper, nickel, vanadium and lead, suggesting a possible pathway for a mineralizing and/or reducing fluid. The southern portion of the metasedimentary corridor is a continuation of the typical J Zone cordierite-garnet pelitic 25 gneiss, in this area characterized by an increased proportion of felsic banding and commonly intercalated lenses of almandine-magnetite-pyrite rich garnetite. A thin band of strongly altered calc-silicate material or pegmatite is commonly intersected along the southern contact between the metasediments and the southern orthogneiss.

The metasedimentary corridor is interpreted as the steeply north-northwest dipping limb of an antiformal fold structure wrapping around the southern orthogneiss dome. The north and south Archean orthogneiss bodies are typically composed of 25 % quartz, 65 % plagioclase and alkali feldspar combined and approximately 10 % biotite with trace garnet. The orthogneiss commonly contains thin pegmatite intrusions and lenses of non-foliated quartz-feldspar granofels. No significant structures or fault zones have been intersected in the orthogneiss bodies.

Away from mineralization the basement rocks display a typical paleo-weathering profile of rusty patchy to pervasive hematization which grades into dark green chloritization with depth. Throughout the paleo-weathered zone primary minerals have been completely altered to clay pseudo-morphs and this alteration can extend for tens of meters below the unconformity. Clay mineralogy in the paleo-weathering profile typically shows a downward progression from illite-kaolinite to chlorite. Orthogneiss commonly shows pervasive clay alteration near the unconformity that has resulted in pseudo-morphing of feldspar by chalky whitish-green illite and/or kaolinite. Primary textures are often destroyed and all that remains are quartz crystals in a clay-dominated matrix. Due to the higher proportion of garnet, biotite and other Al-silicates, the pelitic units tend to be significantly darker and more chloritic near the unconformity. Their ribbony texture is usually preserved despite the intense alteration. Zones of later-stage hydrothermal alteration are common throughout the basement beyond the paleo-weathered zone. Patchy red hematization is common, along with dark green, preferentially pervasive chlorite alteration of biotite and Al-silicates, and illitic-kaolinitic clay as pale yellow-green alteration of feldspar adjacent to fractures.

On a regional scale, the paleo-topography of the unconformity at the Waterbury Lake property is interpreted to be generally flat lying. In the vicinity of the J Zone however, interpreted stacked east-west striking sub vertical reverse faults have resulted in basement offsets of up to several meters which gradually down drop the unconformity towards the south. The most significant basement offset is associated with the thick graphitic cataclasite fault zone proximal to the J Zone mineralization. In zones of particularly thick or intense uranium mineralization the unconformity can be completely overprinted by massive hematite, clay and uranium, making it difficult to identify.

7.2.4 Athabasca Group Sandstone

The Athabasca Group sandstone, ranging from 200 to 370 metres in thickness in the Waterbury Lake Project area, is comprised of Manitou Falls Formation sandstones and conglomerates of the MFb (Bird) Member (Table 7-3). The upper 100 to 140 metres of sandstone is typically bleached to a buff colored, and is medium- to coarse-grained, quartz-rich, and cemented by quartz overgrowths, clay minerals (kaolin, illite), and/or hematite. Bleaching of the sandstone (removal of diagenetic hematite) is noted along much of the J Zone and Huskie zone trends.

The lower portion of the sandstone column is more typically conglomeratic and contains less quartz cement. The conglomeratic beds contain quartz pebbles ranging from one to four centimetres in diameter, locally up to 30 centimetres.

Illitic clay-rich zones are commonly associated with areas of intense hydrothermal alteration and uranium mineralization. These zones are generally present in the basal 20 metres of the sandstone, and associated with friable sand and conglomeratic beds.

Basement fault zones generally extend over 100 metres into the overlying sandstone, act as hosts for uranium mineralization, and form the loci of the quartz dissolution and clay alteration zones that resulted in collapse of the property-scale conglomerate marker horizon.

7.2.5 Quaternary Geology

The surficial sediments in the Waterbury Lake Project area consist of a thin layer of Quaternary till and glaciofluvial sand and gravel. Low relief drumlins and eskers are the dominant surficial feature in the area. The till is typically brown, variably compact to dense and is composed of silt, sand, gravel, and boulders.

As defined by drilling, the thickness of this overburden typically ranges from 15 to 45 metres in the project area.

7.3 Uranium Mineralization

7.3.1 J Zone

The J Zone uranium deposit was discovered during the winter 2010 drill program at Waterbury Lake. The second drill hole of the campaign, WAT10-063A, was an angled hole drilled from a peninsula extending into McMahon Lake. It intersected 10.5 metres of uranium mineralization grading 1.91 % U_3O_8, including 1.0 metre grading 13.87 % U_3O_8, as well as an additional 4 meters grading at 0.16 % U_3O_8.

The J Zone deposit is currently defined by 268 drill holes intersecting uranium mineralization over a combined east-west strike length of up to 700 metres and a maximum north-south lateral width of 70 metres. The deposit trends roughly east-west (080°) in line with the metasedimentary corridor and cataclastic graphitic fault zone. A 45 metres east-west intermittently mineralized zone occurs in the target area formerly known as Highland roughly separating the J Zone into two segments referred to as the eastern and western lenses which are defined over east-west strike lengths of 260 and 318 metres, respectively. A thin zone of unconformity uranium mineralization occurs to the north of intermittently mineralized zone which is interpreted to represent a mineralized block that has been displaced northwards by faulting and is referred to as the mid lens.

Mineralization thickness varies widely throughout the J Zone and can range from tens of centimetres to over 19.5 metres in vertical thickness. In cross section, J Zone mineralization is roughly trough shaped with a relatively thick central zone that corresponds with the interpreted location of the cataclasite and rapidly tapers out to the north and south. Locally, a particularly high-grade (upwards of 40 % U_3O_8) but often thin lens of mineralization is present along the southern boundary of the metasedimentary corridor, as seen in holes WAT10-066, WAT10-071, WAT10-091, and WAT10-103. Ten meter step out drill holes to the south from these high-grade holes have failed to intersect any mineralization, demonstrating the extremely discreet nature of mineralization.

Uranium mineralization is generally found within several metres of the unconformity at depth ranges of 195 to 230m below surface. It variably occurs entirely hosted within the Athabasca sediments, entirely within the metasedimentary gneisses or straddling the boundary between them. A semi-continuous, thin zone of uranium mineralization has been intersected in occasional southern J Zone drill holes well below the main mineralized zone, separated by several meters of barren metasedimentary gneiss. This mineralized zone is informally termed the south-side lens and can host grades up to 3.70 % U_3O_8 as seen in drill hole WAT11-142.

The J Zone deposit is generally flat lying (located roughly 200m below the surface of McMahon Lake) and therefore whenever possible holes have been drilled vertically in order to intersect the ore lenses perpendicularly, thereby giving an approximate true thickness. See Figure 7-5 for a plan view of the basement geology at the J Zone and Figure 7-6 for a cross section of the basement geology and mineralization at the J Zone.

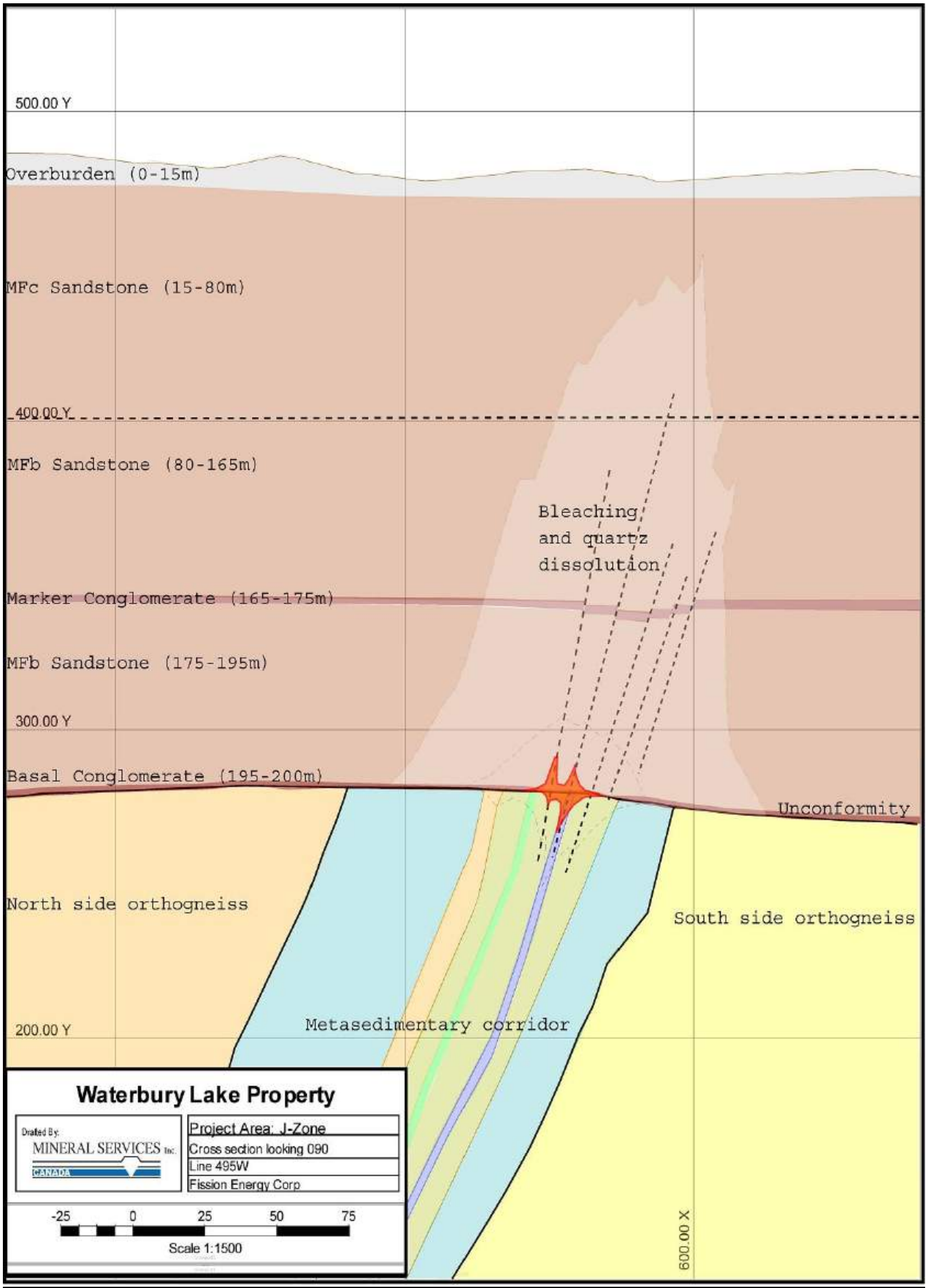


Figure 7-6: Interpreted simplified geology section through the J Zone deposit looking east. Expected depths or depth ranges of units noted in brackets (Armitage & Nowicki, 2012).

7.3.2 Huskie Zone

The Huskie deposit mineralization is entirely basement-hosted comprising three stacked, parallel lenses (Huskie 1, Huskie 2 and Huskie 3) which are conformable to the dominant foliation and fault planes within the east-west striking graphitic gneiss unit. The drilling to date suggests the grade, thickness, and number of lenses present is controlled by the presence of northeast striking faults which cross-cut the graphitic gneiss unit. The northeast striking faults identified at the Huskie deposit are interpreted to be part of the regional Midwest structure. The deposit occurs over a strike length of approximately 210 metres, dip length of approximately 215 metres and has an overall true thickness of approximately 30 metres (individual lenses vary in true thickness of between 1 metre and 7 metres). The deposit occurs at vertical depths ranging between 240 and 445 metres below surface and 40 to 245 metres below the sub-Athabasca unconformity. The high-grade mineralization within the lenses is comprised of massive to semi-massive uraninite (pitchblende) and subordinate bright yellow secondary uranium minerals occurring along fault or fracture planes, or as replacement along foliation planes. Disseminations of lower grade mineralization occur within highly altered rocks proximal to fault planes. The mineralization is intimately associated with hematite, which both occur central to a broad and pervasive alteration envelope of white clays, chlorite and silicification. See Figure 7-7 for a plan view of the basement geology at the Huskie zone and Figure 7-8 for a cross section of the basement geology and mineralization at the Huskie zone.

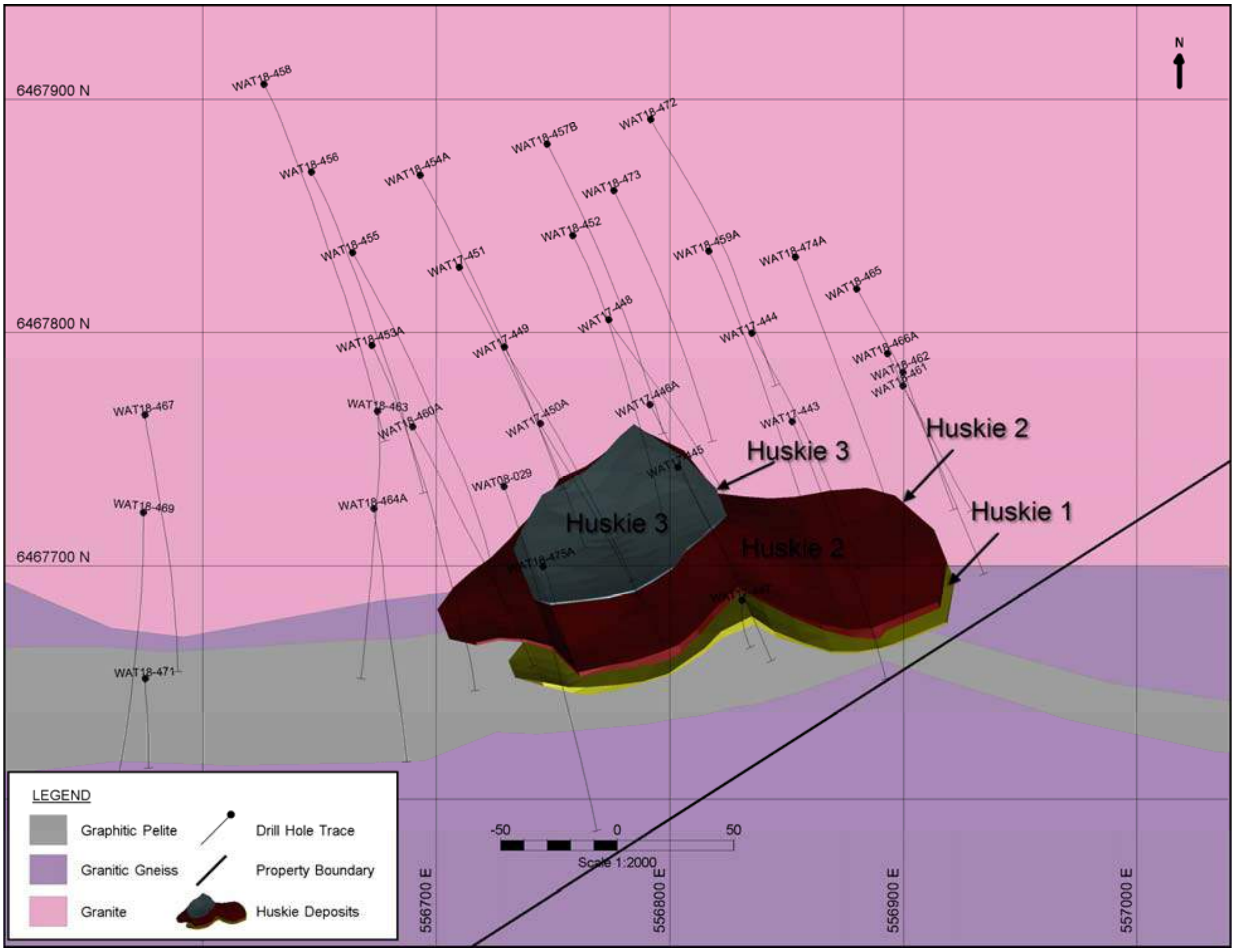


Figure 7-7: Geology Plan Map Showing Drill Hole Traces and the Huskie Deposit Mineralized Wireframes.

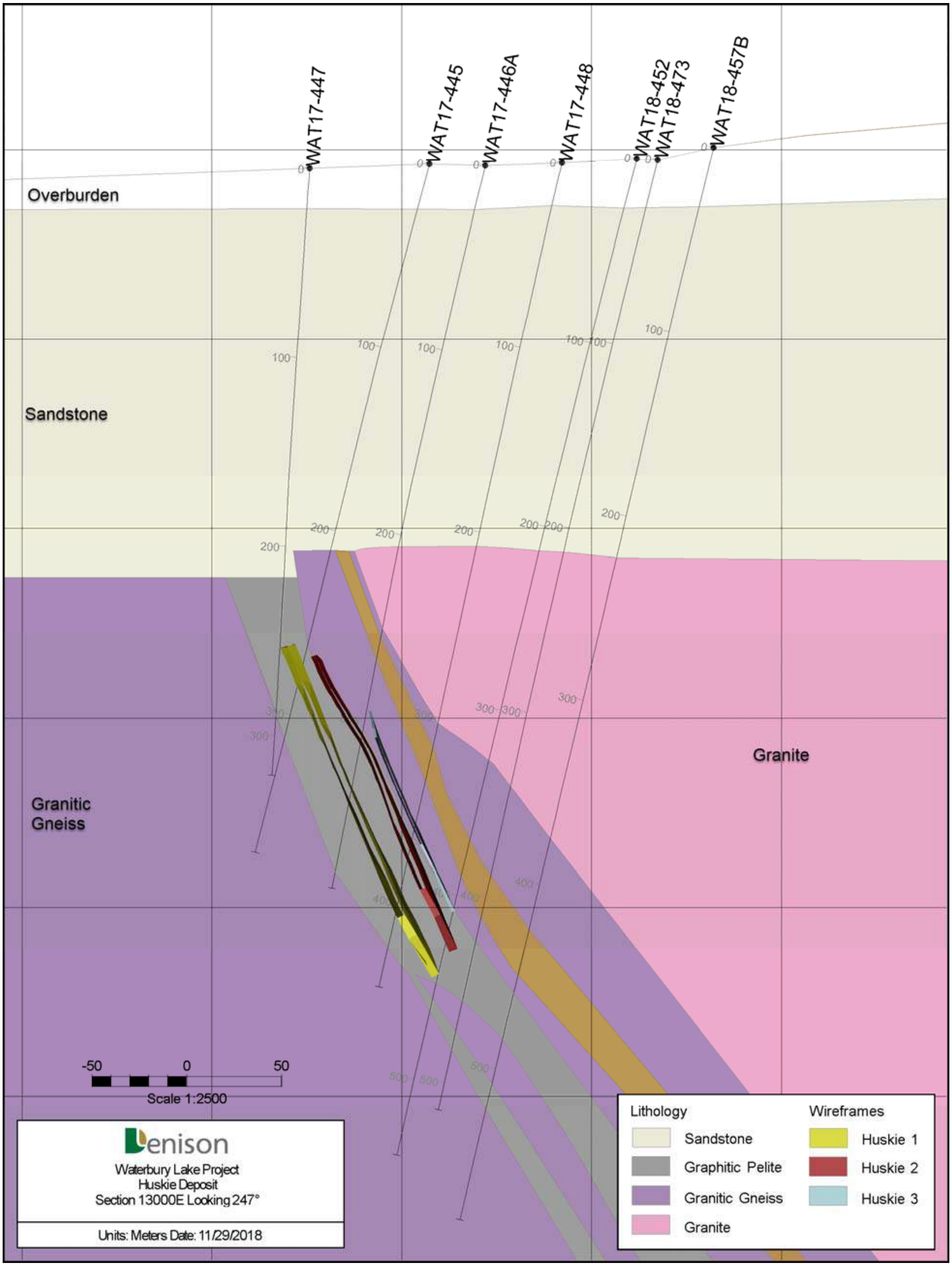


Figure 7-8: Cross section through the Huskie deposit with simplified geology.

8 DEPOSIT TYPE

8.1 Uranium Deposit Type

The Athabasca Basin is one of the principal uranium producing districts in the world (Jefferson, et al., 2007b) and it contains the world's largest high-grade unconformity-type (also called unconformity-related) uranium deposits (McArthur River and Cigar Lake). The Midwest uranium deposits (Midwest Main and Midwest A) are classified as typical egress-style unconformity-type uranium deposits (Figure 8-1, 8-2) that formed through diagenetic-hydrothermal basement-sandstone interaction (Hoeve & Sibbald, 1978); (Hoeve & Quirt, 1984); (Hoeve & Quirt, 1987). The IAEA definition of this type of deposit is: "Unconformity-related deposits comprise massive pods, veins, and/or disseminations of uraninite spatially associated with major unconformities that separate Paleoproterozoic metamorphic basement from overlying Paleoproterozoic-Mesoproterozoic siliciclastic basins" (IAEA, 2009).

Unconformity-type uranium deposits consist of pods, veins, and semi-massive replacements of pitchblende/uraninite resulting from diagenetic-hydrothermal basement-cover fluid-rock interactions and redox mineral reactions located close to unconformities between fluviatile conglomeratic sandstone and metamorphosed basement ((Hoeve & Sibbald, 1978); (Hoeve & Quirt, 1984); (Hoeve & Quirt, 1987); (Jefferson, et al., 2007b)). Complex redox-controlled reactions due to fluid-fluid and fluid-rock interactions resulted in precipitation of massive pitchblende, with associated hematite, and varying amounts of base and other metals.

A broad variety of deposit shapes, sizes, and compositions have been found (Figure 8-1). The deposits range from egress-style polymetallic lenses at and above the unconformity (Figure 8-1 and Figure 8-2), with variable Ni, Co, As, and Pb contents and elevated amounts of Cu, Mo, Zn, Au, S, Pt, and REEs, to ingress-style near-monometallic basement-hosted vein sets, with low base metal and REE contents. The ingress-style deposits are now generally recognized as "blind" deposits, having little to no expression in the overlying Athabasca sandstone and few direct clues for exploration (Hoeve & Quirt, 1984); (Quirt D. H., 1989); (Quirt D. H., 2003); (Jefferson C. W., Thomas, Quirt, Mwenifumbo, & Brisbin, 2007c).

The dominant location of egress-style mineralization can occur in the sandstone, directly above the unconformity (Cigar Lake, Sue A and B), straddling the unconformity (Collins Bay B Zone, Midwest Main, Midwest A, McClean North, Key Lake), or perched high above the unconformity (certain zones at McClean Lake, Midwest, Cigar Lake), or solely in the basement (Eagle Point, Sue C, Sue E, Millennium). The Millennium deposit contains mineralization both in the basement and at the unconformity, while the Shea Creek deposits contain mineralization in the basement, deep in the basement, at the unconformity, and perched in the sandstone. In some deposit areas, there is a plunge to the mineralized pods from sandstone-hosted to basement-hosted within deposit–scale strike lengths ((Rabbit Lake-Collins Bay-Eagle Point trend, Sue trend deposits, McClean North; (Quirt D. H., 2003)).

These mineralization types are also recognized based on fluid flow and varying interactions of fluid with fluid or rock, with two deposit/alteration styles (egress-style and ingress-style) being associated with mineralization (Figure 8-2). The egress-style formed through a fluid-fluid mixing process involving oxidized basinal brine and relatively reduced fluid emanating from the basement ((Hoeve & Sibbald, 1978); (Hoeve & Quirt, 1984); (Quirt D. H., 1989)). A Fe-U redox couple resulted in precipitation of pitchblende and hematite (plus Fe, Cu, Pb sulphide, and Co-Ni arsenide and sulpharsenide minerals) at locations of relatively stable sites of this fluid mixing (Hoeve & Quirt, 1987). The presence of mobile hydrocarbons likely also aided in the mineralization process (Hoeve & Quirt, 1984). The ingress-style formed through a fluid-rock interaction process involving the oxidized basinal brine entering the basement along fault/fracture zones and interacting/reacting with ferrous iron-bearing wall-rock. This interaction also resulted in a Fe-U redox couple and precipitation of pitchblende and hematite.

The diagenetic-hydrothermal metallogenetic model (Hoeve & Sibbald, 1978); (Hoeve & Quirt, 1984); (Wallis, et al., 1985); (Quirt, 1989); (Quirt, 2003); (Jefferson, et al., 2007c); among others) relates uranium mineralization to diagenetic processes within the Athabasca Group sediments. The model attributes the origin of uranium mineralization to fluid interaction between oxidized Athabasca basinal brines and variably reduced basement fluids in an intimate coupling of diagenesis, basin evolution, and formation of mineralization, particularly in periods of active tectonics. The source of metals in the unconformity-type deposits is still a contentious issue ((Jefferson & Delaney, 2007); (Jefferson, et al., 2007a); (Jefferson, et al., 2007b); (Jefferson, et al., 2007c)). Available evidence suggests that the constituents of the Athabasca unconformity-type uranium deposits were derived from both sandstone and basement sources.

Diagenetic-hydrothermal systems of basement-sandstone interaction developed in many structurally-controlled locations along traces of graphitic basement rocks sub-cropping at the unconformity (Hoeve & Quirt, 1984). Significant mineralization precipitated only where local hydrodynamic conditions were conducive to the formation of a stationary redox front (Hoeve & Quirt, 1987).

8.2 Host-Rock Alteration

As noted above, the two main types of unconformity-type uranium deposit paragenesis in the Athabasca Basin are dictated by the form of fluid interaction and can be separated by deposit location ((Quirt, 2003); Figure 8-2):

1. Sandstone-hosted egress-style (e.g. McClean North, JEB, Sue A and B, Collins Bay, Midwest, Cigar Lake, Key Lake) involving mixing of oxidized sandstone brine with relatively reduced fluids issuing from the basement into the sandstone, and
2. Basement-hosted ingress-style (e.g. Sue C, Sue D, Sue E, Eagle Point, Rabbit Lake, Millennium) involving fluid-rock reactions between oxidizing sandstone brine entering basement fault zones and the wall rock.

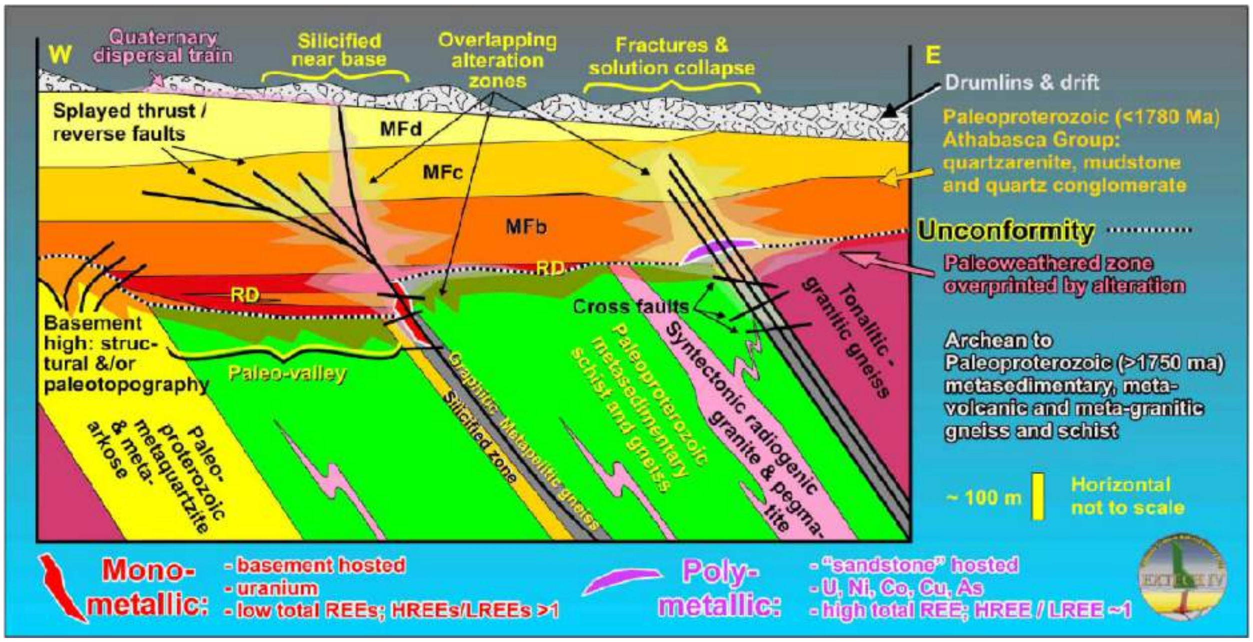


Figure 8-1: Geological elements of mono-metallic and poly-metallic unconformity-type uranium deposits ((Jefferson, et al., 2007b); (Jefferson, et al., 2007c).

Both styles of mineralization and associated host-rock alteration occurred at sites of basement-sandstone fluid interaction where a spatially-stable redox gradient/front was present. The mineralization-associated host-rock alteration is distinct from the diagenetic alteration in the sandstone, and overprints the paleoweathering profile commonly observed in the upper part of the crystalline basement (Hoeve & Quirt, 1984).

In the sandstone, the host-rock alteration halos have a plume-shaped expression in and above the hosting structure, forming a series of onion skin-like mineralogical zones (Figure 8-2). In the sub-Athabasca basement, host-rock alteration comprises extensive clay mineral alteration (chloritization, illitization) of original retrograde metamorphic and/or paleoweathering mineralogy, conversion of clay mineral species, quartz dissolution, and bleaching. The alteration associated with basement mineralization is tightly constrained to the fracture- and fault-hosted mineralization, forming a sharp funnel-shaped alteration feature.

The hydrothermal alteration associated with mineralization comprises varying degrees of chloritization, hematization, bleaching, tourmalinization, illitization, kaolinization, and silicification and/or de-silicification. The alteration types may affect the basement rocks, the overlying sandstone, or both.

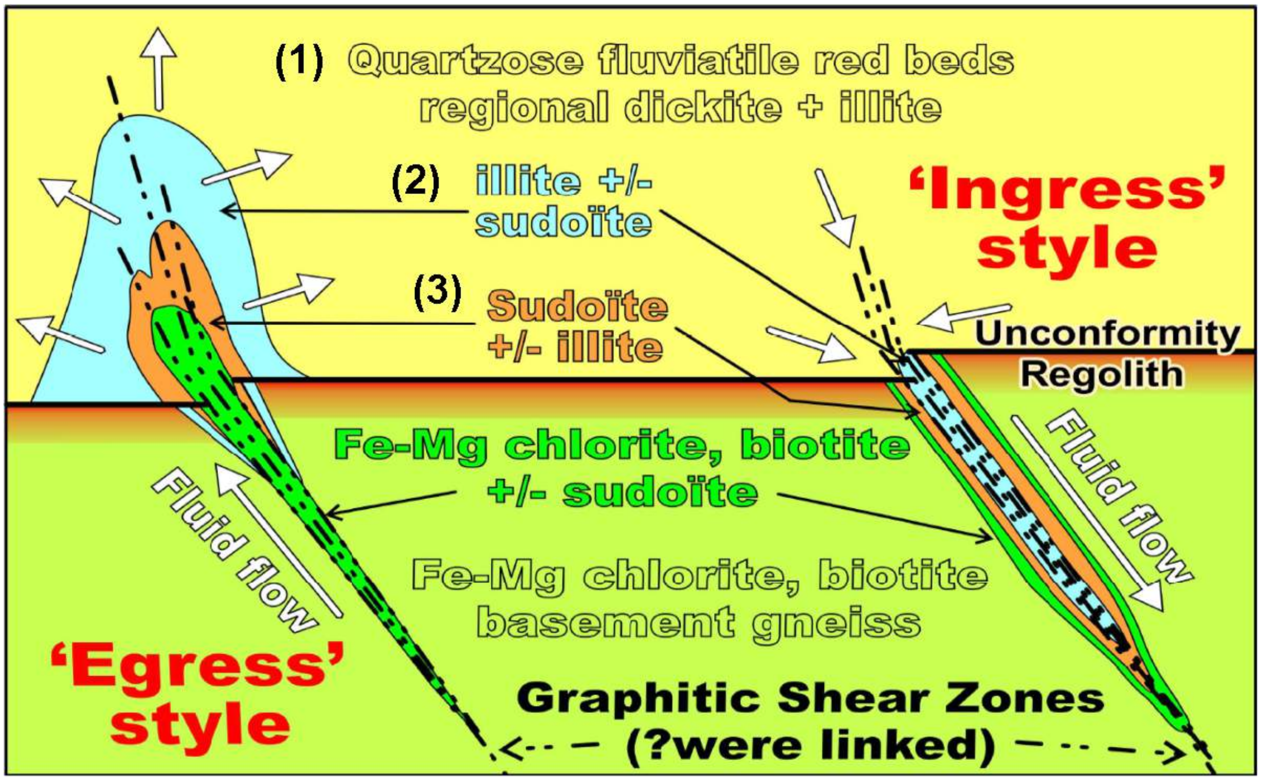


Figure 8-2: Egress versus ingress-style alteration zones for unconformity-type uranium deposits ((Jefferson, et al., 2007b); (Jefferson, et al., 2007c); (Quirt, 2003)).

Visually, the most conspicuous aspect of sandstone alteration is bleaching, the chemical reduction of ferric iron shown by white and creamy, to locally olive-green, bleached colours resulting from the removal of hematite from the normally purple or pink sandstones of the lower Manitou Falls Formation (Hoeve & Quirt, 1984). Discontinuous, patchy, to locally abundant diagenetic bleaching occurs in the sandstone, but host-rock alteration-related bleaching is pervasive in alteration haloes. The sub-Athabasca paleoweathering profile is similarly bleached where affected by host-rock alteration. Frequently, the bleached rock is separated from the purple hematitic rock by a narrow zone of orange-red to brick-red coloration. Basement "bleaching" is a result of destruction (argillization) of ferromagnesian minerals. The bleaching is fracture- and permeability-controlled, forming haloes around micro-fractures, joints, and faults, and it laterally advances along zones parallel to lithological bedding/foliation.

Hematite alteration also occurs both as a diagenetic and a hydrothermal process. The diagenetic alteration occurs disseminated throughout the sandstone and in the paleoweathered basement, and is typically a purplish-red colour. Hydrothermal hematite occurs very close to the mineralization, usually within a metre, and where strongly developed is an ochre-red or brick-red colour. It is ubiquitous along well-developed redox fronts.

Most sandstone-hosted deposits display dominant desilicification features resulting from dissolution of quartz (overgrowths and detrital quartz grains in the sandstone and quartz crystals/grains in the basement) reducing the rock to rubbly semi- to unconsolidated material or to clay. It is a result of the interaction of the mineralizing fluids with the host rock and most commonly it occurs surrounding “perched” mineralization or above mineralization located at the unconformity. Desilicified material contains coincident abundant accumulations of clay minerals (resulting from the volume reduction), now dominantly illite, and detrital minerals like zircon and tourmaline.

Silicification (euhedral/druzy quartz) commonly surrounds or overlies desilicified zones around egress-style halos in the sandstone and likely represents deposition of silica obtained from the de-silicified zones. It usually occurs distal to the mineralization.

Illite, particularly the 1Mt polytype, is characteristic of the clay mineral alteration halo around both sandstone-hosted and basement-hosted deposits (Laverret, et al., 2006). Sudoitic chlorite is often found in the core of the altered and mineralized zones. Around basement-hosted deposits, however, the host-rock alteration is relatively tightly restricted to the proximity of the mineralized veins, unlike the massive to semi-massive alteration occurring around the egress-type deposits. The encompassing alteration is dominantly chloritic, at the expense of ferromagnesian minerals like biotite, cordierite, and garnet (Eagle Point, Sue C). The alteration grades from illite, present adjacent to the veins, to illite-sudoite, to sudoite, and then to background Fe-Mg chlorite plus biotite (Quirt, 1989).

Tourmalinization (Na-Mg borosilicate) occurs as cream-coloured to light bluish-white “dravite” (alkali-deficient dravite) that both replaces country rock and occurs as vein fillings. Dravite can be porcelain-like in texture and it is common as a proximal alteration mineral.

The J Zone shows characteristics that are typical ‘*egress-type’* deposit, in which alteration zones (1), (2), and (3) extends into the sandstone (Figure 8-2). The Huskie deposit shows characteristics that are typical of ‘ingress-type’ deposits, in which alteration zones extend into the basement.

9 EXPLORATION

The chronology of exploration on the Waterbury Lake Project is described in Section 6. The drilling history of the J Zone and Huskie deposits is described in Section 10.9.

The history of exploration work completed up to 2012 has been taken from the "*Technical Report on the Waterbury Lake Uranium Project Including Resource Estimate on the J Zone Uranium Deposit, Waterbury Lake Property*" by Armitage and Nowicki, prepared for Fission Energy Corp. (Armitage & Nowicki, 2012).

9.1 Geological Mapping

No significant geological mapping has been conducted on the Waterbury Lake property to date. The property is dominantly covered by a thick layer of Quaternary sediments resulting in poor outcrop exposure.

9.2 Geophysical Surveys

With the exception of drilling, and related work, exploration on the Waterbury Lake property has mostly been in the form of geophysical surveys. Airborne magnetic surveys (Figure 9-1) have been flown property wide and have been used to identify significant basement structures and to help map basement rock types. Airborne and ground based EM surveys have also been carried out across the property in order to define conductive, likely graphitic basement structures that may be associated with uranium mineralisation. Additionally, ground based induced polarization (DC-IP) (see Figure 9-3 for compilation of ground DC-IP surveys) and gravity surveys have aimed to identify zones of low resistivity and negative gravity anomalies resulting from quartz dissolution and clay alteration. The J Zone falls within a zone of low resistivity and is broadly associated with a conductive zone identified from airborne EM data. However, drill targeting in this area has been based on a combination of geophysical, geological, radiometric and geochemical factors. Many drill targets prior to the J Zone discovery were based on geophysical data, including those in the Highland, Talisker and Shuttle Lake areas. Although no drill holes targeting the geophysical anomalies intersected significant uranium mineralisation occasional encouraging alteration and / or basement lithologies were intersected. For example, WAT09-051 intersected zones of elevated radioactivity and illitic clay alteration in the sandstone, as well as intersecting pelitic basement lithologies.

In January 2011, a small moving loop EM survey was undertaken in the Discovery Bay area to refine the position of the strong EM conductor interpreted to be the graphitic cataclasite proximal to the J Zone. The revised EM conductor trace was found to intersect the unconformity 40 m south of the actual J Zone mineralisation. This offset relationship was tested along the extent of the

Discovery Bay EM conductor in areas of coincident resistivity lows and resulted in the discovery of the PKB, which is now part of J Zone western lens, and Summit mineralised zones. Additional testing of resistivity lows and coincident EM conductors in the Oban (Figure 9-1) area resulted in intersection of intermittent mineralised zones, graphitic basement lithologies and significant hydrothermal alteration along the central O2 conductor. Drill testing in the Murphy Lake (Figure 9-2) target area along strong EM conductors and coincident resistivity lows intersected moderately altered metasediments and thin zones of weak to moderate uranium mineralisation. 2011 TEM and resistivity surveys also identified lower sandstone resistivity lows and coincident TEM conductors in target areas named Arran and Chivas to the southwest and northwest of the J Zone respectively (Figure 9-2).

During 2012, Fission Energy completed 50.3 line kilometres of moving loop electromagnetic ground surveying, 33.4 line kilometres of IP resistivity surveying and 1,180 metres of borehole transient electromagnetic (BHTEM) surveying. The ground surveys were completed on various grids throughout the property and are explained in detail in the assessment report titled “August 2011 - August 2012, Borehole and Ground Geophysical Surveys and Diamond Drilling on the Waterbury Lake Property, Athabasca Basin, Northern Saskatchewan” (McElroy, et al., 2013).

Denison took over exploration of the Waterbury Lake Project in 2013. In 2013, Denison completed a 50.5 line-kilometre DC-IP resistivity survey on claim S-107364 (Carmichael, 2013). The survey mapped a sub-linear, east-west trending zone of moderate to high resistivity in the basement which breaches the sandstone at a break in the residual magnetic intensity.

In 2014, Denison completed 24 lines of DC-IP resistivity surveying totalling 40.4 line-kilometres (Carmichael, 2014). DC-IP resistivity surveying identified two zones of low basement resistivity in the Discovery Bay area (Figure 9-3). One zone is parallel to and coincident with the Discovery Bay conductor and extends north beyond the terminus of the conductor. The second zone extends west-northwest from the J Zone and wraps around the margin of a body of granite gneiss which bounds the J Zone to the north.

During the winter of 2015, Denison completed 28.8 kilometres of DC-IP resistivity surveying on claims S-107364 and S-107370 (Figure 9-3). The survey mapped two east-west trending basement lows with weak associated sandstone breaches that are interpreted as a parallel set of steeply dipping conductive metasediments.

During the winter of 2016, Denison completed included a five line DC-IP resistivity survey over the newly cut WAT16-G1 grid on disposition S-107370 (Burry, 2016). This survey totalled nine line kilometres and was an extension to the WAT15-G1 DC-IP survey completed in 2015. Denison also completed a 21 line DC-IP resistivity survey over the newly cut WAT16-G2 grid on dispositions S-107361, S-107362 and S-111278 (Burry, 2016). The WAT16-G2 survey totalled 115.2 line kilometres (Figure 9-3).

Denison did not conduct any geophysical surveys during 2017.

During the fall 2018, Denison conducted a 16 line 28.8 line kilometre DC-IP resistivity survey over the WAT18-G1 grid Figure 9-3 to see if the interpreted Midwest structure crosses over from the Midwest property mineral lease ML5115 onto Waterbury Lake disposition S-107363; interpretation of the survey results was still ongoing as is the writing of this technical report.

Detailed results and interpretations of the geophysical surveys undertaken on the Waterbury Lake property between 2005 and 2018 is beyond the scope of this document but can be found in the following reports:

- Basic EM interpretation report; Airborne Magnetic and MEGATEM survey, Waterbury Lake. Fugro Airborne Surveys (2005).
- 2005 and 2006 Exploration at the Waterbury Lake property, northern Saskatchewan. Dahrouge Geological Consulting (2006).
- 2006 and 2007 Exploration of the Waterbury Lake property, northern Saskatchewan. Dahroughe Geological Consulting (2006).
- Report on a helicopter borne time domain electromagnetic geophysical survey, Waterbury Lake property, Points North Saskatchewan, Canada. Geotech Ltd (2008).
- Report on 2008 Ground geophysics surveys on the Waterbury Project Claims. Interpretex Resources Ltd (2009).
- Report on the 2009 ground geophysical surveys on the Waterbury Project Claims. Interpretex Resources Ltd (2009).
- Fission Waterbury Project Resistivity Evaluation and Interpretation. Living Sky Geophysics Inc. (2010).
- Fission Energy Corp – Waterbury Project 2010-2011 field logistics report. Patterson Geophysics Inc. (2011).
- Waterbury Lake Summary Report, Athabasca Basin, Northern Saskatchewan, Map sheets 64L/5, 74I1&8. Barbara Crawford (2011).
- Report on EM and DC resistivity Surveys of the Waterbury Property. David Bingham, (2011).
- Report on EM and DC Resistivity Surveys over the Waterbury Property. David Bingham, (2012).
- 2013 Diamond Drilling on the Waterbury Lake Property, Andrew Carmichael (2013), MAW362.

- 2013 Geophysical surveying on the Waterbury Lake Property, Andrew Carmichael (2013), MAW359.
- 2014 Diamond Drilling on the Waterbury Lake Property, Andrew Carmichael (2014), MAW572.
- 2014 Geophysical surveying on the Waterbury Lake Property, Andrew Carmichael (2014), MAW570.
- 2015 2015 Annual Report on the Waterbury Lake Project, Andrew Carmichael (2015), MAW2111.
- 2016 Annual Report on the Waterbury Lake Project, Paul Burry, (2016), MAW2112.
- 2017 Annual Report on the Waterbury Lake Project, Paul Burry, (2017), has not been submitted for assessment yet, will be submitted during summer 2019.
- 2018 Annual Report on the Waterbury Lake Project, Paul Burry, (2018), has not been submitted for assessment yet, will be submitted during summer 2020.

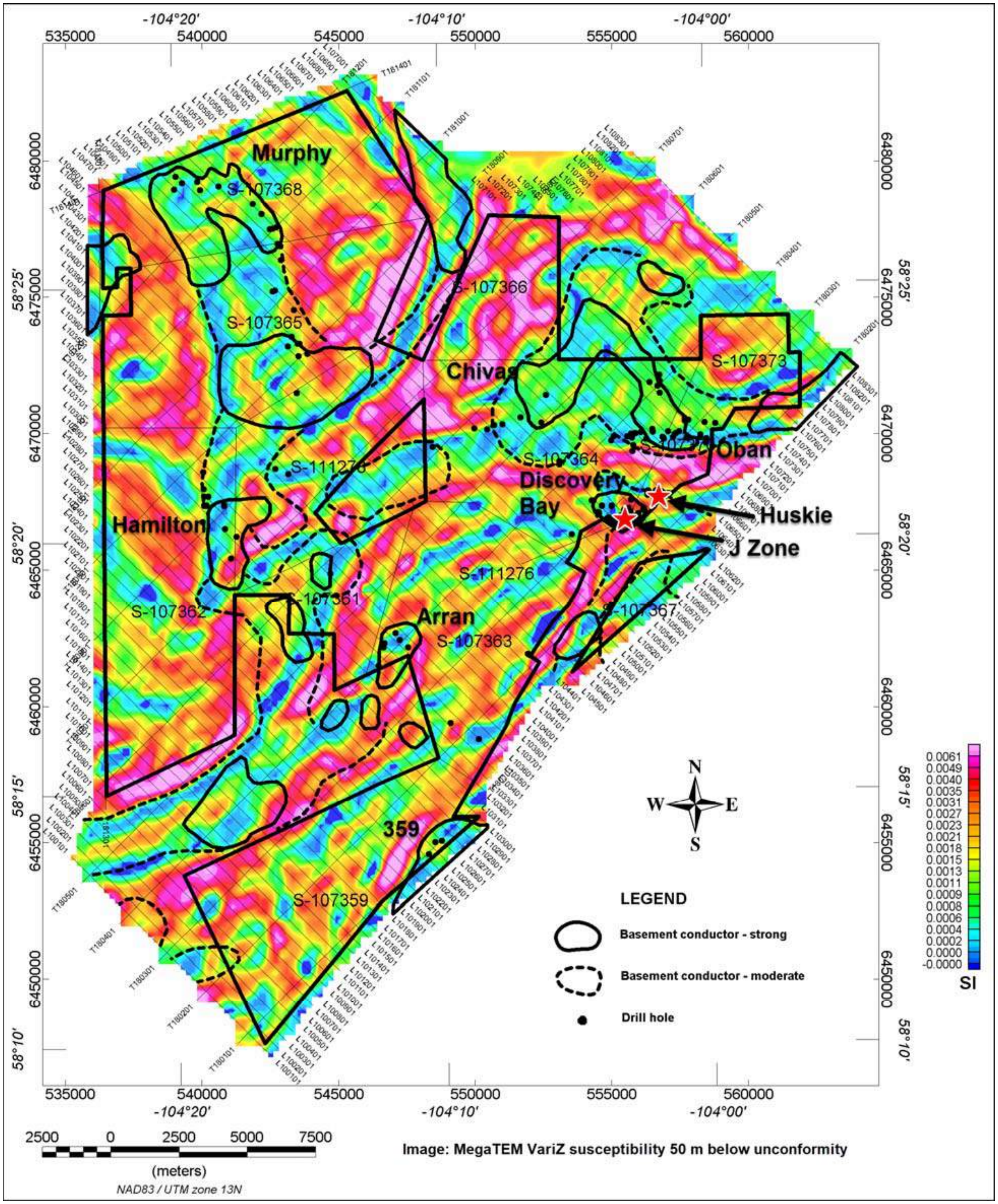


Figure 9-1: Property scale view of MegaTEM airborne magnetics survey.

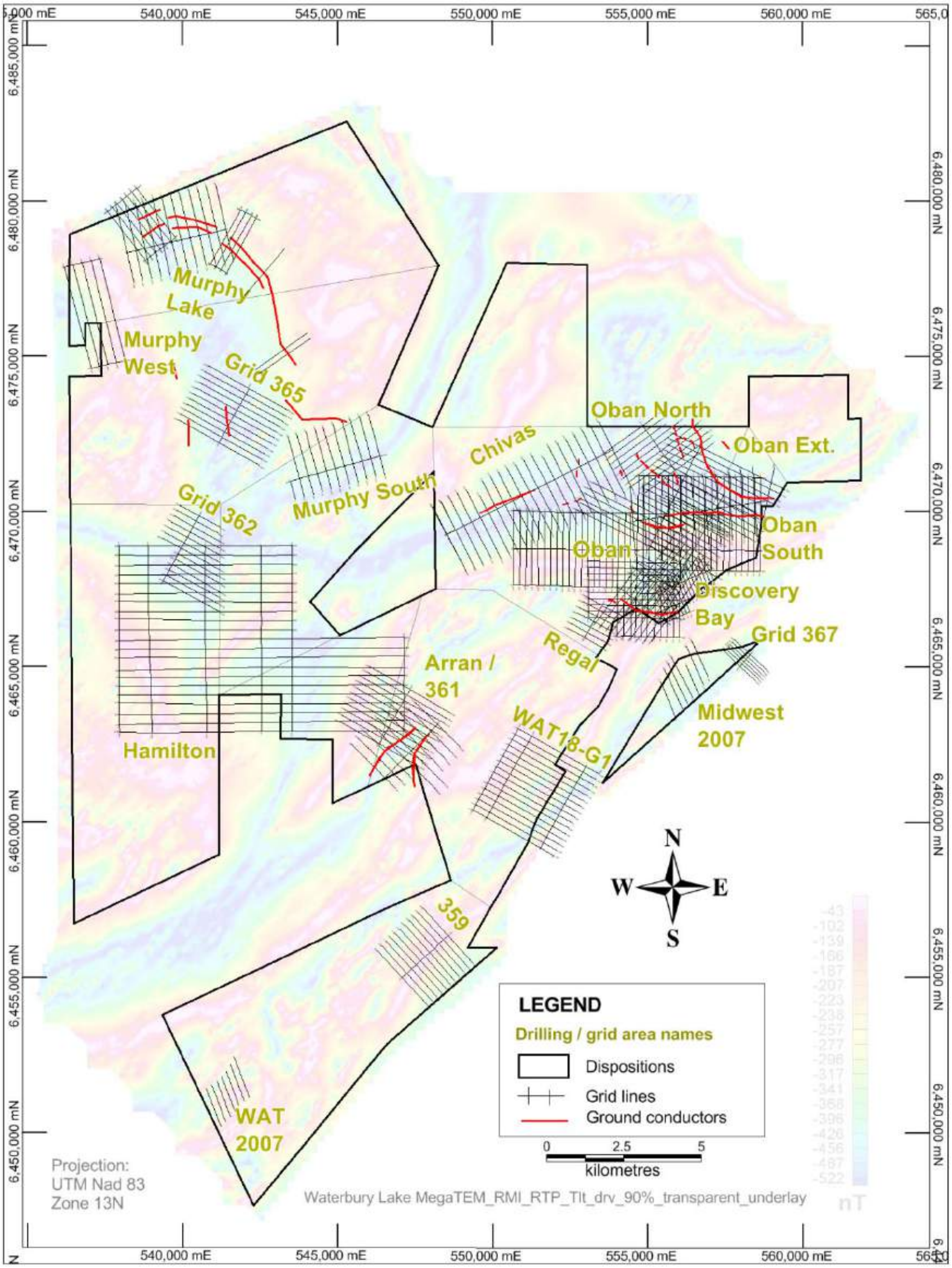


Figure 9-2: Property scale view of ground grid and defined ground electromagnetic conductors, 2006 – 2018.

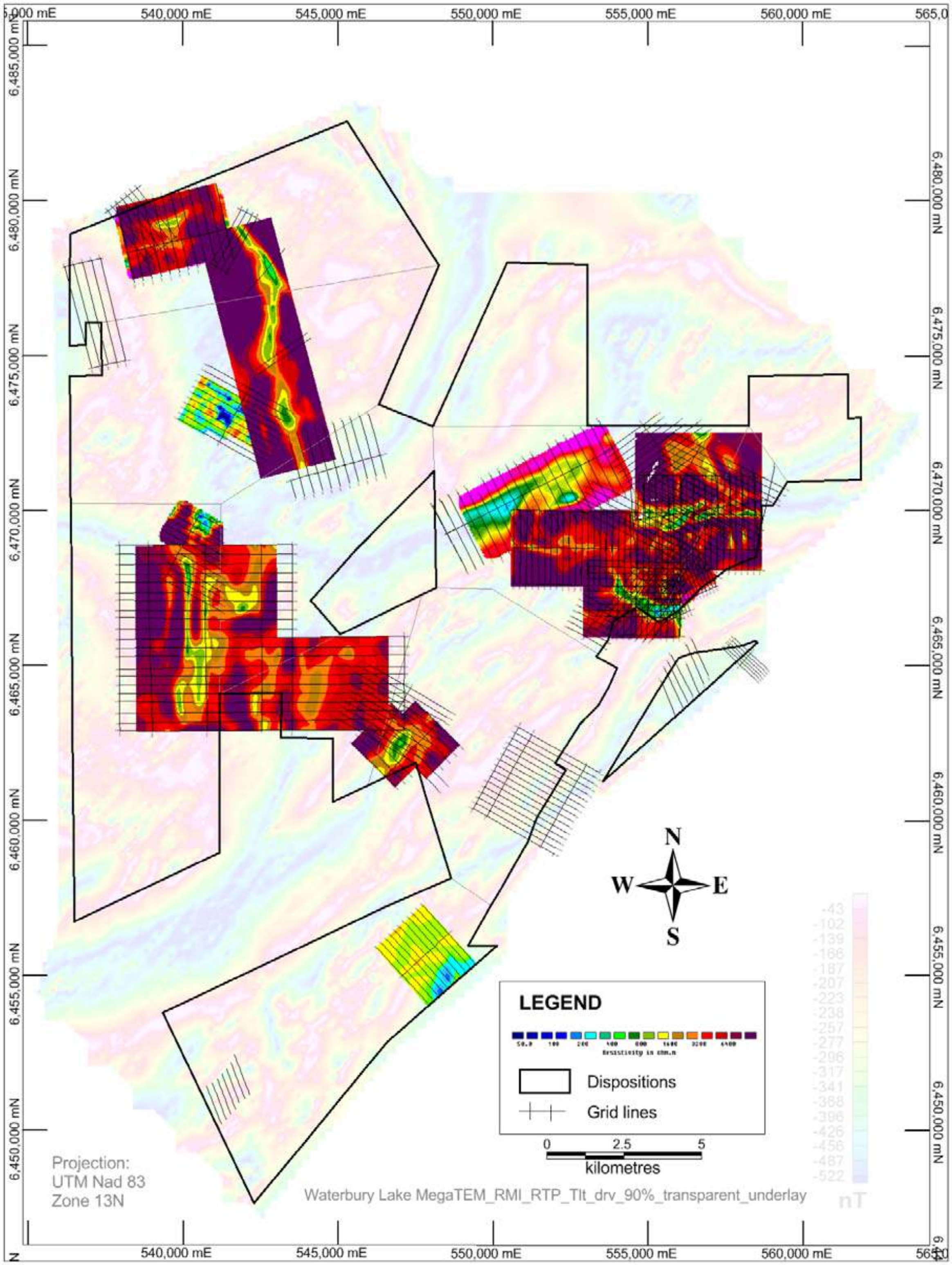


Figure 9-3: Property scale view of DC-IP ground resistivity surveying coverage, 2006 – 2017.

9.3 Surface Geochemical Surveying

Several reconnaissance scale surface geochemical surveys have been undertaken on the Waterbury Lake property. A boulder sampling program began during the fall of 2005 by Dahrouge Geological for Strathmore Minerals Corp. A total of 77 sandstone boulder samples were taken but no anomalous uranium concentrations were found, although several samples did have elevated proportions of illitic clay. A mobile metal ions (MMI) survey was carried out in 2007 on the northwest portion of the Waterbury Lake property by Mount Morgan Resources Ltd of Lac du Bonnet, Manitoba, and Canada. A total of 434 grid controlled soil samples were taken over two sampling grids. Several geochemical anomalies were identified throughout the two grids but the high to moderate tin, tantalum and tungsten response suggested the basement lithology was dominantly granitic. The anomalous uranium concentrations were interpreted to have likely originated from the felsic basement rather than a deeply buried uranium deposit (Appendix 16; (McElroy & Jeffrey, 2009)). A second MMI survey was carried out by Fission Energy Corp. geologists during the summer 2008 program. A total of 452 samples were collected around the Discovery Bay portion of the Waterbury Lake property. An additional 465 soil samples were taken on claim S-107359 to the south of Discovery Bay. MMI uranium anomalies were found to be coincident with north-easterly trending lineaments cut by easterly lineaments (Appendix 17; (Zastavnikovich, 2009); (McElroy & Jeffrey, 2009)).

During the summer 2009 program, Fission Energy Corp geologists completed a short reconnaissance scale boulder sampling program. Targets were based on the results of a detailed airborne radiometric survey that was flown earlier in the summer. No significant uranium mineralisation was found and the targets turned out to be dominantly conglomeratic sandstone boulders with slightly elevated radioactivity. Further analysis of the property wide airborne radiometric survey data from 2009 generated additional targets which required follow up in 2010. As in 2009, many of the target areas turned out to be boulder fields dominated by conglomeratic sandstone or felsic boulders with slightly above background levels of radioactivity (Pollock, 2010).

During the 2011 summer drill program a high density lake bottom and soil geochemical survey was undertaken within the Discovery Bay Corridor. A total of 166 samples (42 ‘A’ horizon soil, 41 ‘B’ horizon soil, 57 lake bottom organics and 26 sieved lithic) were taken along five 500 m long roughly north-south oriented traverses over the J Zone, PKB, PKB west, Talisker and Summit target areas. Full details on the procedures, methodology, results and interpretations of the survey can be found in the unpublished report Geochemical Interpretation Report on the Waterbury Lake uranium project – Disco Bay and West Lake Area orientation soil, lake-bottom and lakeshore H.Q. sampling (Pollock, 2010).

Three surface geochemical surveys were undertaken in 2012 which focused on the J Zone and Murphy Lake target areas. Shortly after the completion of the winter drill program a hydro-radiometric trial survey was undertaken over the J Zone by Special Projects Inc of Calgary, Alberta. The objective of the initial orientation survey was to determine if the hydro-radiometric instrument could detect weakly mineralised sandstone boulders or fault hosted radon on the bottom of McMahon Lake interpreted to originate from the J Zone. Measurements were made along the lake bottom through ice holes in several profiles which cut across the main J Zone. No anomalous readings were recorded in any of the profiles over the J Zone. A second trial survey was also conducted at the southern tip of Murphy Lake (Figure 9-5) where the 2009 airborne radiometric survey identified a moderate uranium anomaly adjacent to an EM conductor. A series of holes were drilled across the ice surface in the up-ice direction of the radiometric MSC12/035R 50 anomaly allowing for a small portion of southern tip of Murphy Lake to be surveyed. At the lake bottom directly up ice from the airborne anomaly a hydro-radiometric peak of 7.5 ppm (15 times the background value) was measured. It was concluded by Special Projects Inc. from the test survey at Murphy Lake that the hydro-radiometric instrument could successfully detect radioactive material on the lake bottom.

Follow up work during the summer 2012 drill program focused on the strongly anomalous zone at Murphy Lake. A thorough hydro-radiometric survey was performed over the entire southern tip of Murphy Lake (Figure 9-5) which identified an extensive strongly uraniferous zone covering the entire southern bay. Detailed ground follow up in the area of the hydro-radiometric anomaly was also undertaken over a three day period during summer 2012 (Figure 9-5) aiming to identify the surface source for the uranium anomaly. Two moderately radioactive pegmatite and biotite gneiss boulders were discovered within the anomalous area but the majority of the anomalies were identified as conglomeratic sandstone.

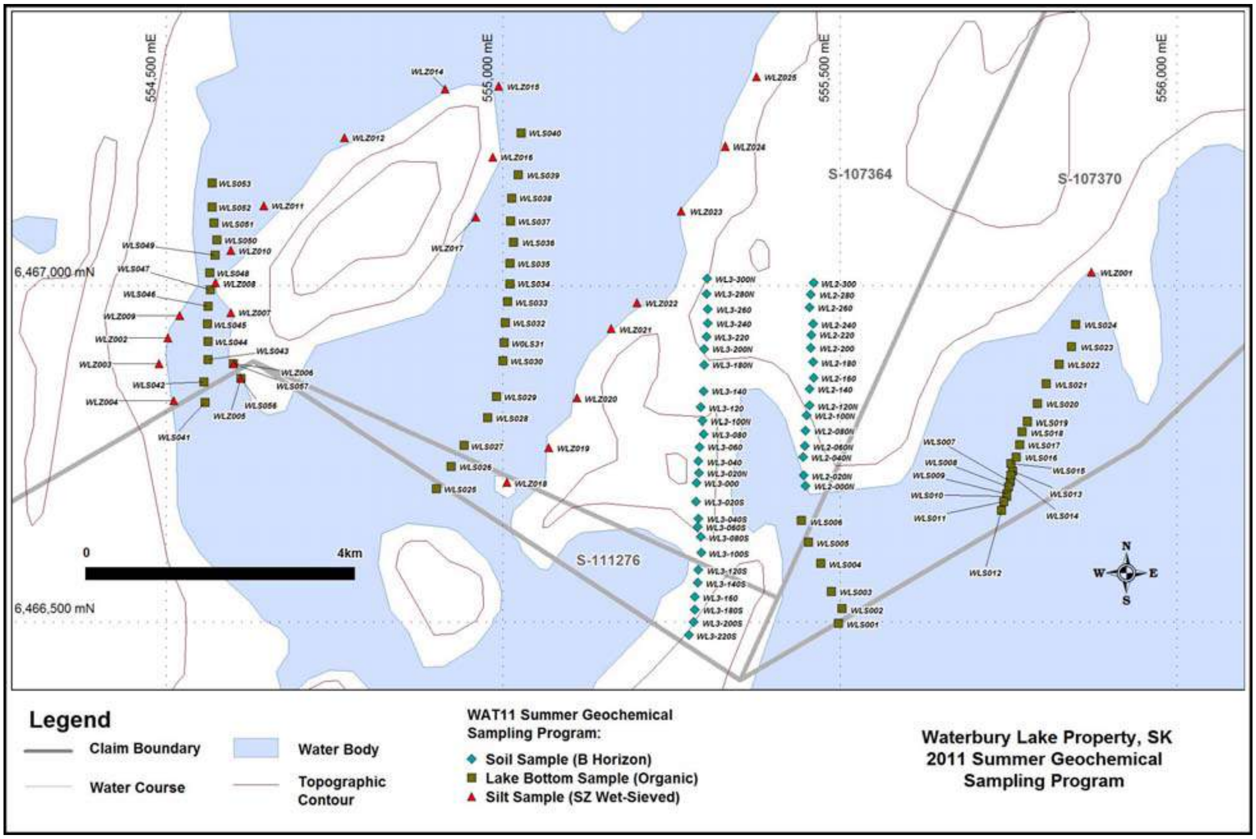


Figure 9-4: 2011 soil and lake sediment sampling locations.

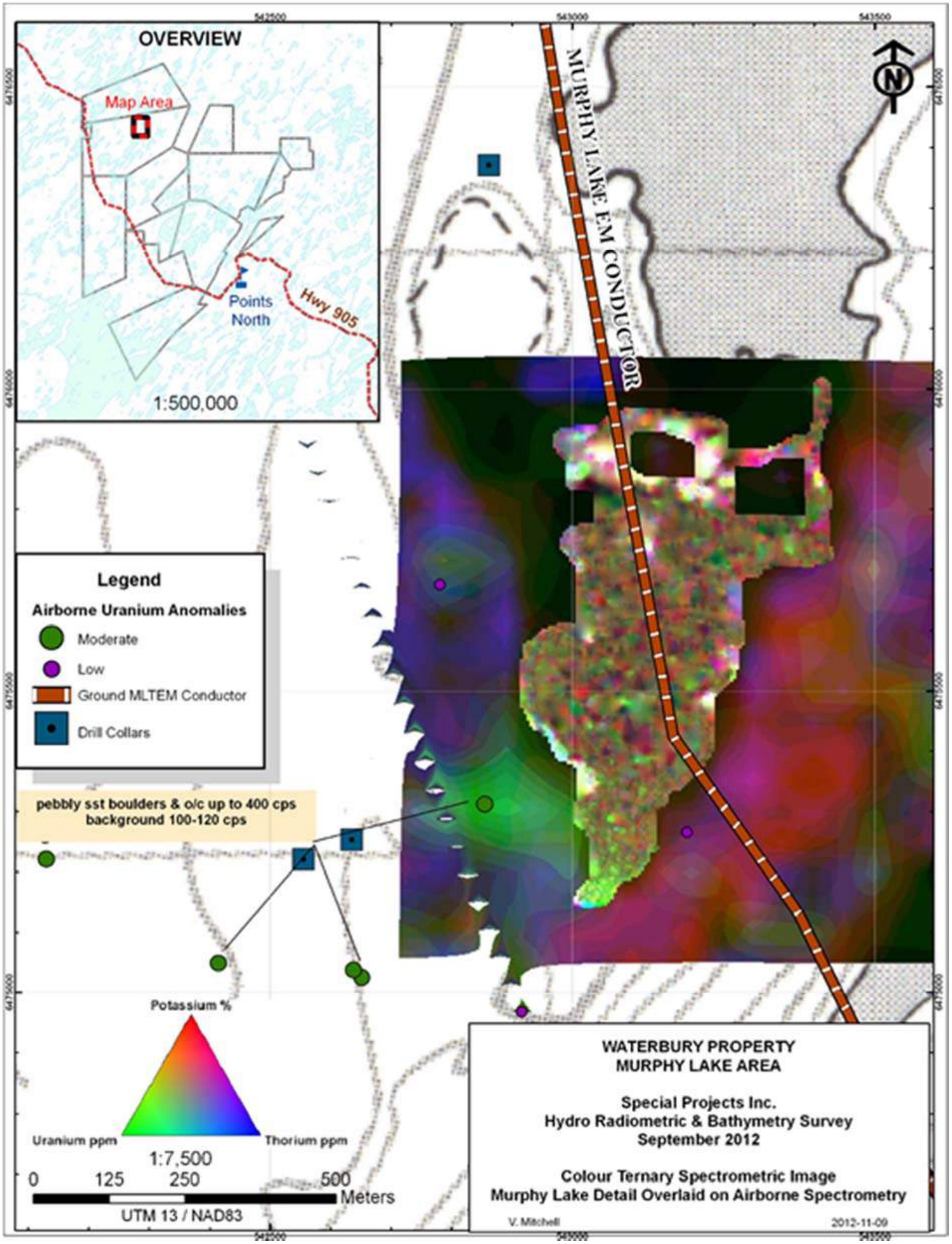


Figure 9-5: Murphy Lake hydro-radiometric survey area and contoured lake bottom radiometric results (from Fission Energy Corp, 2012).

10 DRILLING

The following is a description of historical and recent drilling competed at the J Zone and the Huskie deposits mainly by Fission and Denison, respectively. Although there are few significant differences in the methodologies and techniques (drilling, drill core handling, sampling, etc.) employed by Fission and Denison at the J Zone and the Huskie deposits, respectively, there are also many similarities and overlaps. The methodologies and techniques are discussed separately where significant differences exist.

In the opinion of the relevant Qualified Persons, there are no known drilling, sampling, or recovery factors at the J Zone and Huskie that could materially impact the accuracy and reliability of the results.

10.1 Type, Methodology, and Extent of Drilling

10.1.1 J Zone

For all drill programs from 2007 onward, with the exception of spring 2008, Bryson Drilling of Archerwill, Saskatchewan was contracted by Fission for drilling in the J Zone. Zinex Mining Corp A5 diamond drill rigs which have a maximum depth capacity of approximately 800 m drilling NQ sized core were utilized. All holes drilled on the Waterbury Lake project during these programs recovered standard 47.6 millimetre NQ core for the entire depth. River Valley Drilling was contracted by Fission for the short spring 2008 drill program. River Valley Drilling utilized a Zinex Mining Corp A5 diamond drill rig, which has a maximum depth capacity of approximately 800 m drilling NQ sized core.

Upon completion, each drill hole was cemented at 30m depth to the top of bedrock regardless of whether or not it was mineralized. Drill holes with readings greater than 13,000 cps on the sodium Iodide (NaI) gamma probe counter were cemented completely from 10 metres below the mineralized zone to 10 metres above the mineralized zone. All drill holes had the casing removed once drilling was complete.

10.1.2 Huskie

Majority of the historical and current drilling at Huskie was carried out with NQ (47.6 millimetres diameter) in 3-metre runs using TECH 5000 and Zinex A5 drills owned and operated by Hy-Tech Drilling of Smithers, BC and Bryson Drilling of Archerwill, SK, respectively. Some of the initial drilling was completed with HQ (63.5 millimetres diameter) through the sandstone section due to difficult ground conditions, reducing to NQ at the unconformity through the basement lithologies and mineralization. All holes completed at Huskie in 2017 and 2018 were inclined holes drilled in a south-southeasterly direction.

All mineralized holes within the Huskie deposit were cemented for the entire basement column to approximately 10 metres above the unconformity and all mineralized and non-mineralized holes were cemented from approximately 25 metres below the overburden-bedrock contact to the overburden-bedrock contact.

10.2 Drill Hole Collar Locations and Downhole Surveying

Fission used a high accuracy Trimble GeoX GPS system to spot all drill holes at the J Zone. The GeoX GPS provides easting and northing coordinates with accuracy of up to ± 50 cm without post processing or the use of a base station. Each hole was surveyed again at the exact collar location once the drill was moved from the setup in order to provide a more precise coordinate. All drill hole locations were planned and recorded using the UTM NAD 83 coordinate system.

Similarly, the collar locations of drill holes at Huskie were spotted on a grid established in the field, and collar sites were surveyed upon completion by Denison personnel using a Trimble Pro XRS GPS data logger receiver with real-time differential correction accurate to less than 1 metre.

All coordinates at the J Zone and Huskie were based on the North American Datum (NAD) of 1983 (NAD83), zone 13N.

Drill holes were named in sequence starting with the project name WAT (Waterbury), then the year, followed by sequential drill hole number, for example, WAT13-340 was the three hundred and fortieth hole drilled on the property (post 2006), and was drilled in 2013. Holes requiring a restart were assigned letters after the drill hole number to indicate the number of restarts, with A being one restart, B being two, and so on. Hole restarts are a function of either a) exceeded desired maximum deviation tolerances (measured from down hole orientation surveys) or b) abandoning due to set-up or rock conditions encountered.

For all drill programs at the J Zone and Huskie, a Reflex EZ-Shot orientation tool was used for down hole surveying in single shot mode. The EZ-Shot has a typical error of ± 0.5 degrees for azimuth readings and ± 0.2 degrees for dip readings. Holes were surveyed initially at roughly 20m depth using the Reflex EZ-Shot to verify that the azimuth and dip were correct before proceeding and then a reading was taken every 50 metres from surface using the same EZ-Shot tool. Because the EZ-Shot azimuth accuracy is affected by any nearby steel or magnetic rock, six meters of steel drill rods were pulled back for each reading to allow the tool to hang into the open bore hole. Appropriate declination corrections provided by the Natural Resources Canada website were then applied to the raw EZ-Shot azimuths to give true azimuths.

A Reflex EZ-Trac tool was also used at the J Zone by Fission. The EZ-Trac is essentially the same tool as EZ-Shot but allows for multiple consecutive readings to be wirelessly recorded with a handheld device. The majority of the completed drill holes were surveyed using the EZ-Trac as the rods were being removed with one reading taken every 9 meters. The EZ-Trac has a typical error of ± 0.35 degrees for azimuth readings and ± 0.25 degrees for dip readings.

10.3 Radiometric Logging of Drill Holes

Prior to 2010, Fission used a Mount Sopris 2PGA-1000 Poly-Gamma probe to survey all drill holes at J Zone. From 2010 onward, a Mount Sopris 2GHF-1000 triple gamma probe was used instead. Additional logging equipment including the Mount Sopris winch(s), Matrix logging system and computer software remained the same.

Denison also used a Mount Sopris 2GHF-1000 triple gamma probe (SN 4146-4112) attached to a MX-series winch and a MGX II console to survey every drill hole at Huskie. 2GHF-1000 probe measures natural gamma radiation using three different detectors: one 0.5 inch by 1.5 inch sodium iodide (NaI) scintillation crystal assembly and two ZP1320 Geiger Mueller (G-M) tubes installed above the NaI detector. These G-M tubes have been used successfully to determine grade in very high concentrations of U_3O_8. By utilizing three different detector sensitivities (the sensitivity of the detectors is very different from one detector to another), these probes can be used in both exploration and development projects across a wide spectrum of uranium grades. Accurate concentrations can be measured in uranium grades ranging from less than 0.1% to as high as 80% U_3O_8. Data are logged from all three detectors at a speed of 10 metres per minute down hole and 15 metres per minute up hole through the drill rods. Speed is generally slowed down while logging through the mineralized intervals at approximately 5 metres per minute.

The radiometric or gamma probe measures gamma radiation which is emitted during the natural radioactive decay of uranium (U) and variations in the natural radioactivity originating from changes in concentrations of the trace element thorium (Th) as well as changes in concentration of the major rock forming element potassium (K). Potassium decays into two stable isotopes, argon and calcium, which are no longer radioactive, and emits gamma rays with energies of 1.46 MeV. Uranium and thorium, however, decay into daughter products which are unstable (i.e., radioactive). The decay of uranium forms a series of about a dozen radioactive elements in nature which finally decay to a stable isotope of lead. The decay of thorium forms a similar series of radioelements. As each radioelement in the series decays, it is accompanied by emissions of alpha or beta particles or gamma rays. The gamma rays have specific energies associated with the decaying radionuclide. The most prominent of the gamma rays in the uranium series originate from decay of bismuth-214 (^{214}Bi), and in the thorium series from decay of thallium-208 (^{208}Tl) (Bernius, et al., 1997).

The natural gamma measurement is made when a detector emits a pulse of light when struck by a gamma ray. This pulse of light is amplified by a photomultiplier tube, which outputs a current pulse which is accumulated and reported as counts per second ("cps"). The gamma probe is lowered to the bottom of a drill hole and data are recorded as the tool travels to the bottom and then is pulled back up to the surface. The current pulse is carried up a conductive cable and processed by a logging system computer which stores the raw gamma cps data.

Since the concentrations of these naturally occurring radioelements vary between different rock types, natural gamma ray logging provides an important tool for lithologic mapping and stratigraphic correlation (Bernius, 1996). For example, in sedimentary rocks, sandstones can be easily distinguished from shales due to the low potassium content of the sandstones compared to the shales. The greatest value of the gamma ray log in uranium exploration, however, is in determining equivalent uranium grade.

The basis of the indirect uranium grade calculation (referred to as eU_3O_8 for equivalent U_3O_8) is the sensitivity of the detector used in the probe which is the ratio of cps to known uranium grade and is referred to as the probe calibration factor. Each detector's sensitivity is measured when it is first manufactured and is also periodically checked throughout the operating life of each probe against a known set of standard test pits, with various known grades of uranium mineralization or through empirical calculations. Application of the calibration factor, along with other probe correction factors, allows for immediate grade estimation in the field as each drill hole is logged.

Down-hole total gamma data are subjected to a complex set of mathematical equations, taking into account the specific parameters of the probe used, speed of logging, size of bore hole, drilling fluids, and presence or absence of any type of drill hole casing. The result is an indirect measurement of uranium content within the sphere of measurement of the gamma detector. A Denison in-house computer program, known as GAMLOG, converts the measured counts per second of the gamma rays into 10 cm increments of equivalent percent U_3O_8 (percent eU_3O_8). GAMLOG is based on the Scott's Algorithm developed by James Scott of the Atomic Energy Commission (AEC) in 1962 and is widely used in the industry (Scott, 1962).

The conversion coefficients for conversion of probe counts per second to percent eU_3O_8 equivalent uranium grades used by Denison are based on the calibration results obtained at the Saskatchewan Research Council (SRC) uranium calibration pits (sodium iodide crystal) and empirical values developed in-house (Petrie & Sweet, 2010) for the triple-gamma probe (Figure 10-1).

SRC down-hole probe calibration facilities are located in Saskatoon, Saskatchewan. The calibration facilities test pits consist of four variably mineralized holes, each approximately four metres thick. The gamma probes are calibrated a minimum of two times per year, usually before and after both the winter and summer field seasons.

Drilling procedures, including collar surveying, down-hole Reflex surveying, and radiometric probing are standard industry practice.

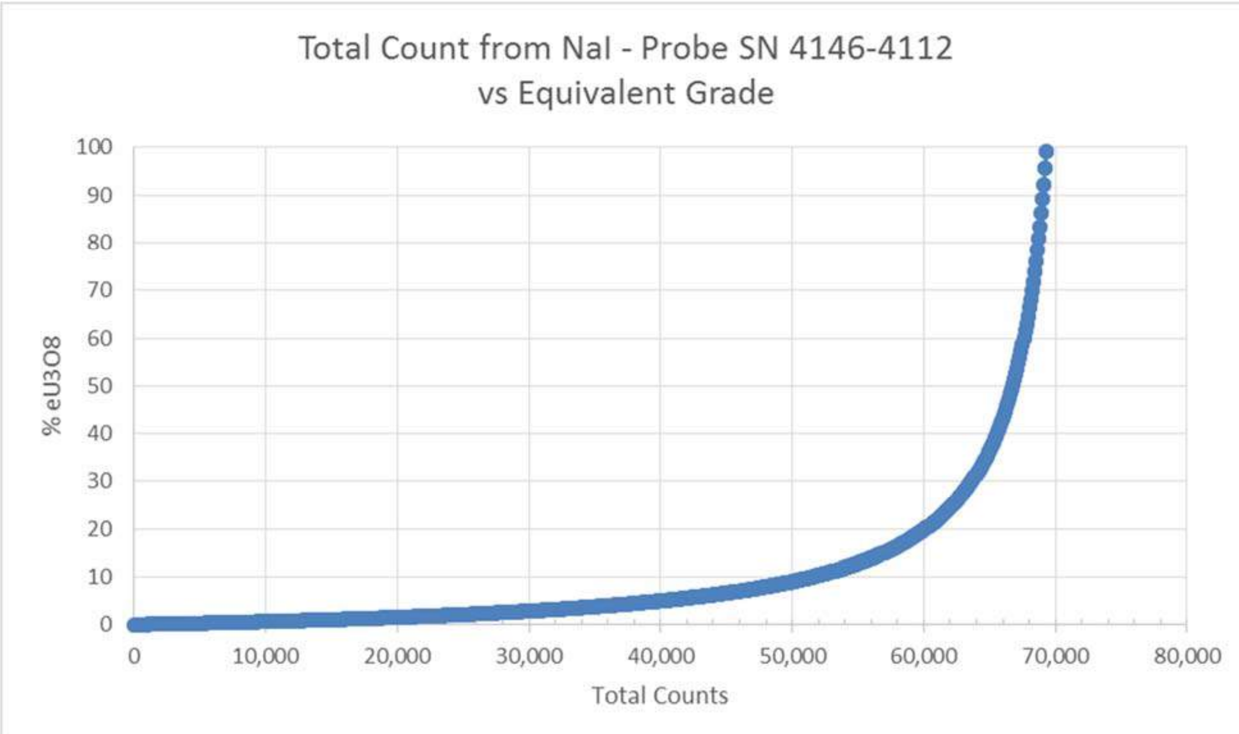


Figure 10-1: Calibration curve for the NaI scintillation crystal in Mount Sopris probe SN 4146-4112.

10.4 Drill Core Handling and Logging Procedures

10.4.1 J Zone

From 2010 onward, Fission used individual logging sheets specifically designed for capturing lithology, alteration, structure and geotechnical data. All drill cores were logged by a geologist onsite at the Waterbury Lake logging facilities.

The geotechnical logging protocols used at the J Zone changed several times by Fission between 2006 and 2007. For the 2010 drill programs and onward, individual sheets were used to record core recovery per run, fractures per meter and the number of core breaks per run where core could not be pieced back together, as well as the depths of core breaks. The updated logging sheets were designed to allow for importing of the data into computer modelling and database software.

Core photos were taken after the geological logging, geotechnical logging and sample mark-up were completed. Sets of three core boxes were placed on a stand in order from top to bottom and photographed together. Details of the core included in each photo (drill hole number, from – to depths and box numbers) were clearly marked on a whiteboard. The core was wet before being photographed as this generally allows subtle geological features or colours to be more easily discerned.

Radioactivity from core was measured with a hand held Exploranium GR-110 total count gamma ray scintillometer or a hand held Terraplus RS-125 total count Super Gamma-Ray Scintillometer. The scintillometers read up to a maximum of 9,999 cps.

For core with background levels of radiation, the maximum reading was recorded every two meters over the entire length. In mineralized zones (> 300 cps) drill core was removed sequentially in 50 centimetre sections and measured away from the core shack to ensure high-grade material did not influence readings from lower grade material. Scintillometer readings from mineralized core were recorded as maximum and minimum values over each 50cm core length and were recorded on the core boxes as well as the geotechnical logging sheets. Intervals of core that gave scintillometer readings of over 9,999 cps (off-scale) were separated out as detailed high-grade zones for the full extent of the off-scale radioactive zone. Scintillometer readings were recorded in the technical logging sheet for each drill hole.

Once core photos and sample splitting were completed, metal tags inscribed with the drill hole number, box number and from / to meterage were stapled on the front of each core box. Typically the last 50 boxes of each hole were placed into core racks to allow for easy access while the remaining boxes were cross stacked on levelled ground.

10.4.2 Huskie

At each drill site, core is removed from the core tube by the drill contractors and placed directly into three-row wooden core boxes with standard 1.5 meters length (4.5 metres total) for NQ core or two-row wooden boxes with standard 1.5 meters length (3 metres total) for HQ core. Individual drill runs are identified with small wooden blocks, onto which the depth in metres is recorded. Diamond drill core is transported at the end of each drill shift to an enclosed core handling facility at Denison's Waterbury Lake core storage. The core handling procedures at the drill site were industry standard. Drill holes are logged at the Waterbury Lake logging facilities by Denison personnel.

Before the core is split for assay, the core is photographed, descriptively logged, measured for structures, surveyed with a handheld scintillometer, and marked for sampling. Sampling of the holes for assay is guided by the observed geology, radiometric logs, and readings from a handheld scintillometer. The data was entered directly into Datamine Software Fusion geological data management software. Fusion is a comprehensive data repository and management suite for geological, geochemical, geotechnical, geophysical, quality control and quality assurance (QC/QA), mapping, surveying and other field data.

The general concept behind the scintillometer is similar to the gamma probe except the radiometric pulses are displayed on a scale on the instrument and the respective count rates are recorded manually by the technician logging the core or chips. The handheld scintillometer provides quantitative data only and cannot be used to calculate uranium grades; however, it does allow the geologist to identify uranium mineralization in the core and to select intervals for geochemical sampling, as described below.

Scintillometer readings are taken throughout the hole as part of the logging process, usually over three metre intervals, and are averaged for the interval. In mineralized zones, where scintillometer readings are above five times background (approximately 500 cps depending on the scintillometer being used), readings are recorded over 10 centimetre intervals and tied to the run interval blocks. The scintillometer profile is then plotted on strip logs to compare and adjust the depth of the down-hole gamma logs. Core boxes are marked with aluminum tags as well as felt marker and placed into core racks at the Waterbury core storage.

10.5 Drill Core Sampling for Lithogeochemical Analyses

10.5.1 Historical

Limited information is available for drill core samples collected before 2006. Most historic Asamera Oil Corp drill holes from drill programs conducted during the 1980s have limited sample records that document sample number, depth and ppm values for U_3O_8, Cu, Ni, Ag and As. These samples are noted as being analysed by ICP multi element analysis but there is no record of the laboratory. Cogema samples from 1988 have detailed sample descriptions, depths and 28 element analysis data, but the analysis method is not noted. Cameco samples from 1996 have 11 element analysis data as well as clay proportion analysis data (% illite, chlorite, kaolinite), but no documentation of the sampling protocols or procedures is available. Historical holes did not intersect any mineralization associated with the J Zone and Huskie deposits.

10.5.2 J Zone

10.5.2.1 Mineralized Sandstone and Basement

Mineralized zones in drill core were identified using a hand held Exploranium GR-110 total count gamma ray scintillometer. Drill core that gave readings of greater than or equal to 300 cps was considered mineralized and was therefore sampled for uranium assay (as well as multi-element geochemistry). Sampling protocol applied through mineralized zones was the same in both the Athabasca sediments and basement rocks. In zones of elevated radioactivity greater than 300 cps, continuous 50 cm samples were taken over the entire interval. A series of continuous 50 cm shoulder samples of nonradioactive rock were also taken above and below each mineralized zone. Typically four 50 cm shoulder samples were taken on each side of the mineralized zone, however in zones of particularly weak mineralization (> 300 cps, < 500 cps) the number of shoulder samples taken was typically reduced.

10.5.2.2 Non-mineralized Sandstone and Basement

During the 2006-2007 drill programs, sampling of drill core was limited to a combination of point sampling in areas of interest and regular composites throughout the length of each drill hole. After the discovery of the Roughrider deposit in 2008, Fission Energy Corp instituted a more structured sampling system in order to identify zones of elevated pathfinder elements that may serve as a vector to ore. This included regular composite samples at 10 metre intervals and point samples through all faulted and altered zones. This sampling protocol was further refined by MSC (Mineral Services Corp) to provide a more systematic and thorough approach to sampling each drill hole. The new protocol was implemented during the 2010 winter and summer drill programs. All geochemistry samples have been analysed by multi-element ICP-OES and uranium analysis by fluorimetry.

The Athabasca sediments are relatively uniform throughout the project area and therefore sampling methods do not need to account for the effect of varying lithology on the chemical composition of the material being analysed. The sediments are assumed to be relatively permeable, allowing for fairly wide-scale alteration and mineralization halos associated with circulating fluids to develop. As a result, geochemical anomalies associated with alteration and mineralization is expected to occur on a relatively large scale and hence do not require high resolution sampling to detect and map.

For the 2010 drill programs and onward, 10 metre composite samples were collected continuously throughout each intersection of the Athabasca sediments. Small subsamples were taken from the top of each row of core in each core box and combined over 10 metre intervals to make up each composite sample. In zones of strong to intense alteration, the composite sample intervals were shortened to 5 metres to provide tighter resolution. The final composite sample was ended at the last recognizable Athabasca material to ensure there was no chance of including basement rock in the sample. The proportion of shale and conglomerate and the alteration style and intensity were recorded for each composite sample.

During pre-2010 drill programs, continuous 10 metre composite samples were taken throughout the sandstone column to 20 metres above the unconformity, below which the sample density increased to a series of three 5 metre composite samples, two 1-metre composite samples and six 50 cm half split samples. In addition, 50 centimetre to 1 metre half split samples were taken of strongly altered or faulted zones throughout the sandstone at the logging geologists’ discretion.

The basement is characterized by significant, relatively small-scale lithological variation that has a considerable impact on the geochemical character of the material being analysed. Due to the relatively low permeability of the basement lithologies, alteration and mineralization effects are typically more localized than in the Athabasca and higher resolution sampling is therefore required in order to properly characterize them.

For the 2010 drill programs and onward, representative sampling of the basement was in the form of 50 centimetre samples of split (half) core taken every 10 metres throughout each intersection, starting immediately below the last recognizable Athabasca sediments. Where necessary, the sample positions were adjusted to ensure there were no overlaps with lithological boundaries. Representative samples were not taken where the interval in question was covered by mineralization, fault, pegmatite or alteration samples as described below. The rock type, alteration type and alteration intensity was recorded for each representative basement sample. Significant faults were sampled as 50 centimetre split core intervals directly over the fault and/or any associated intense alteration. Zones of strong to intense alteration that were not already covered by mineralization (see below) or fault samples were sampled as 50 cm split core intervals. Basement alteration samples were collected from the beginning of the alteration zone and their spacing varied with the width of the alteration zone as follows: 1 m spacing for alteration zones ≤ 5 m long; 2 m spacing for alteration zones between 5 and 30 m long; 5 m spacing for alteration zones > 30 m long. Lithological contacts were avoided by shifting the sample positions slightly and when necessary reducing the sample interval width as low as 30 cm. Alteration zones less than 50 cm long that were not covered by mineralization or fault samples were not sampled. Representative samples of pegmatites were taken in zones not already covered by any of the other sample types.

During pre-2010 drill programs, six 50 cm samples were routinely collected directly below the unconformity regardless of alteration, mineralization or structure. Basement composite samples were taken in the same fashion as the Athabasca composite samples: a collection of core chips from each row of the core box over a 10 m interval. This sampling method was deemed ineffective as it often grouped different basement lithologies in the same sample, and it was therefore abandoned prior to the 2010 drill programs. Pre 2010, point samples were taken in zones of interest which included fault zones and zones of elevated radioactivity or alteration.

10.5.3 Huskie

10.5.3.1 Mineralized Sandstone and Basement

Denison submits assay samples for geochemical analysis for all the cored sections through mineralized intervals, where core recovery permits. All mineralized core is measured with a handheld scintillometer as described above by removing each piece of drill core from the ambient background, noting the most pertinent reproducible result in counts per second, and carefully returning it to its correct place in the core box. Any core registering over 500 cps is flagged for splitting and sent to the laboratory for assay. All mineralized intervals were sampled using 0.5 m lengths. Barren samples are taken to flank both ends of mineralized intersections, with flank sample lengths at least 0.5 m on either end, which, however, may be significantly more in areas with strong mineralization.

All core samples are split with a hand splitter according to the sample intervals marked on the core. One half of the core is returned to the core box for future reference and the other half is bagged, tagged, and sealed in a plastic bag. Bags of mineralized samples are sealed for shipping in metal or plastic pails depending on the radioactivity level. Samples collected on 0.5 m spacing through the mineralized zone are analyzed using inductively coupled plasma optical emission spectroscopy ("ICP-OES") (Section 11.3.3).

10.5.3.2 Non-mineralized Sandstone and Basement

Three other types of drill core samples are collected as follows:

- Composite geochemical samples are collected over approximately 10 m intervals in the upper Athabasca sandstone and in fresh lithologies beneath the unconformity (basement) and over 5 m intervals in the basal sandstone and altered basement units. The samples consist of 1 cm to 2 cm disks of core collected at the top or bottom of each row of core in the box over the specified interval. Care is taken not to cross lithological contacts or stratigraphic boundaries.
- Representative/systematic core disks (1 to 5 centimetres in width) are collected at regular 5 m to 10 m intervals throughout the entire length of core until basement lithologies become unaltered. These samples are analyzed for clay minerals using reflectance spectroscopy.
- Select spot samples are collected from significant geological features (i.e., radiometric anomalies, structure, alteration etc.). Core disks 1 cm to 2 cm thick are collected for reflectance spectroscopy and split core samples, over the desired interval, are sent for geochemical analysis. Ten centimetre wide core samples may also be collected for density measurement.

These sampling types and approaches are typical of uranium exploration and definition drilling programs in the Athabasca Basin. The drill core handling and sampling protocols are industry standard.

10.6 Drill Core Sampling for Spectral Clay Analyses

At the J Zone, Fission collected samples for PIMA clay analysis at regular intervals throughout the entire length of each drill core. A small chip was cut from the first piece of core in each box and placed into a sealable plastic sample bag with the appropriate sequential sample number. One PIMA sample per core box roughly corresponds to one sample every 4.5 metres.

Denison collected systematic samples for Short wave near infrared (SWIR) spectral analysis. A small chip sample was taken at the end of each systematic geochemical sampling interval in sandstone or crystalline basement. Samples were air or oven dried prior to analysis in order to remove any excess moisture.

10.7 Drill Core Sampling for bulk density

10.7.1 J Zone

For the majority of drill holes designed to test and delineate the J Zone, bulk density samples were taken at 40 metre intervals throughout the entire length of the Athabasca sediments in each drill core. Approximately 10 cm of core was split (halved) and placed into a sequentially numbered sample bag and then submitted for bulk density measurements.

Bulk density samples were taken at 20 metre intervals throughout the basement intersection in each drill core. Because the bulk density samples in the basement occurred within the same depth intervals as the representative, fault, pegmatite or alteration samples, a 10 cm subsample of core was split and placed in a secondary sample bag inside the primary sample bag with the rest of the sample. The subsample was removed first at the laboratory and measured for bulk density, after which it was returned to the primary sample bag for geochemical analysis along with the remainder of the core sample.

Bulk density samples were taken at 2.5 metre intervals through any mineralized zones giving scintillometer readings of greater than or equal to 300 cps. The sampling procedure was the same as for regular basement bulk density samples, whereby a 10 centimetre subsample was placed into a smaller secondary bag inside the larger primary sample bag and returned to the primary bag for analysis once the bulk density measurement was complete.

Drill core samples collected for bulk density measurements were sent to SRC. Samples were first weighed as received and then submerged in de-ionized water and re-weighed. The samples were then dried until a constant weight was obtained. The sample was then coated with an impermeable layer of wax and weighed again while submersed in de-ionized water. Weights were entered into a database and the bulk density of each sample was calculated. Water temperature at the time of weighing was also recorded and used in the bulk density calculation.

10.7.2 Huskie

Denison collected a total of 12 mineralized bulk density samples representing a range of grades from the mineralized zones at Huskie. An approximately 10 centimetre long split core sample was taken at each predetermined depth interval. Samples were placed into pre-labeled plastic bags to be shipped to the lab for analyses.

The samples were analyzed using the same method at SRC as described above for J Zone.

10.8 Core Recovery and Use of Probe Data

10.8.1 J Zone

The mineralized rock of the J Zone is altered sandstone and basement gneisses. Locally, the core can be broken and blocky, but recovery was generally good averaging approximately 90% overall recovery. Core recovery was recorded for all drill holes in 3m intervals. Intervals where core loss was greater than 50% over 3m runs were rare forming approximately 2% of total assay database.

Due to the high rate of core recovery within the mineralized zone, chemical assays are considered reliable. In rare cases, some mineralization may have washed out during the drilling process. In these instances, close correlation of the down hole gamma probe and the observed chemical analyses can be undertaken. In such instances, a more accurate measurement of the pitchblende content should be determined by the gamma logging probe which was run in every hole.

10.8.2 Huskie

Core recovery at Huskie was generally excellent. For mineral resource estimation purposes, wherever core recovery was poor, the radiometric equivalent uranium values (“eU_3O_8”) were substituted for chemical assays where possible. For the Huskie 1, Huskie 2 and Huskie 3 zones mineral resource estimates, reported herein, 28%, 8% and 17% of the assay intervals respectively, relied on eU_3O_8 grades.

Denison is not aware of any drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the results.

10.9 Drilling Results

10.9.1 2006 Drilling

The 2006 drill program began on April 24 and ended on June 20. Eight drill holes totalling 2,666 m of drill core were completed during the program. All the holes were drilled vertically. WAT06-01, -03, -04 and -05B drill targets were primarily based on a combination of historic ground geophysical anomalies and EM anomalies identified from an airborne MEGATEM survey conducted in winter 2006. WAT06-02 was drilled west of three Asamera Oil Corp drill holes from the 1980s that intersected anomalous uranium and nickel concentrations at the unconformity as well as pelitic basement. No significant uranium mineralization was intersected.

10.9.2 2007 Drilling

The 2007 drill program began on November 1 and was completed on November 22. Eight drill holes recovered a total of 2,222 m of core. The 2007 drill program concentrated on triangular claim block S-107367 located 2 km southeast of Discovery Bay. WAT07-001 and WAT07-002 targeted an east-west fault zone interpreted from airborne geophysics to the south of the claim block. WAT07-003, -007 and -008 targeted an historic conductive zone and coincident magnetic low identified by a geophysical survey. WAT07-008 intersected an average of 12,393 cps over 70 cm on the 2PGA-1000 down hole gamma probe. WAT07-004, -005 and -006 targeted an interpreted NW-SE trending fault zone along the flank of a magnetic high to low transition. No other significant mineralization was intersected.

10.9.3 2008 Drilling

A spring drill program took place at Waterbury Lake from March 26 to April 13, 2008. Five drill holes recovered a total of 1,303 m of core. The program aimed to target resistivity and magnetic anomalies on the S-107367 grid and to follow up promising alteration and down hole gamma probe readings obtained in several 2007 drill holes. WAT08-009 was drilled to test for further mineralization around WAT07-008 but no significant mineralization was intersected.

A summer drill program took place at Waterbury Lake from May 13 to August 23, 2008. Nineteen drill holes were completed, recovering a total of 7,995 m of core. The initial three drill holes were planned to target the possible extension of the Roughrider deposit into the Waterbury Lake property. The third of these holes, WAT08-017, intersected just over 1,800 ppm U_3O_8 over a half meter interval, the highest uranium concentration recorded on the property up to that point in time. Eleven additional follow up holes were drilled in order to trace out mineralization in the vicinity. Holes WAT08-022C, WAT08-024, WAT08-031 and WAT08-032 intersected elevated uranium concentrations of between 300 and 1,200 ppm U_3O_8 over half meter intervals. No other significant mineralization was intersected in these holes. Three drill holes targeted resistivity and magnetic anomalies throughout the property. A further two drill holes tested a possible down dip extension of a mineralized structure northwest of the Roughrider zone.

10.9.4 2009 Drilling

The 2009 winter drill program at Waterbury Lake began on January 13 and ended on March 17. A total of 23 drill holes were completed, totalling 7,356 m of core. Thirteen drill holes targeted gravity, resistivity and magnetic lows throughout the property. Two drill holes followed up historic 'Esso North' grid drill holes to the far west of the as yet undiscovered J Zone, within the Discovery Bay Corridor in an area referred to as Talisker. Anomalous uranium was intersected in one of the

Talisker holes, WAT09-044, hosted in strongly graphitic pelitic gneiss but only over a half meter interval. Lastly, eight holes were drilled around the eastern property line of claim S-107370, targeting the possible extension of the Roughrider deposit into the Waterbury Lake property. Intervals of weakly anomalous radioactivity and hydrothermal alteration were encountered, but no significant uranium mineralization was intersected.

The 2009 Waterbury Lake summer drill program began on July 30 and was completed on August 21. A total of seven holes recovered 2,726 m of core. Five of the drill holes targeted the possible western extension of the Roughrider deposit high-grade ore onto the Waterbury Lake property. Again, intervals of well-developed hydrothermal alteration and weakly anomalous radioactivity were intersected, but the holes failed to intersect any significantly anomalous uranium mineralization. Two drill holes targeted a resistivity and magnetic low coincident with uranium MMI anomalies southwest along strike of the Midwest deposit in claim S-107359. No anomalous uranium was intersected.

10.9.5 2010 Drilling

The 2010 winter program began on January 18 and ended on March 26. Thirty-five holes were drilled, recovering 11,250 m of core. The first hole of the program targeted the possible southwest extension of the Roughrider deposit high-grade zone, but did not intersect any significant uranium mineralization. The second hole, WAT10-063A, was drilled to target the up dip extension of a radioactivity anomaly identified from previous drill holes and intersected over 10 m of high-grade uranium mineralization in what is now known as the J Zone. Twenty-five additional holes were drilled in order to provide initial delineation of the mineralized zone. Of the 27 holes targeting mineralization in the J Zone, 21 intersected moderate to strong uranium mineralization around the unconformity. A second Bryson drill rig was brought in to test the Talisker/Highland resistivity low to the west of the J Zone, within the Discovery Bay corridor. Nine holes were drilled in the area with the final hole, WAT10-092A (Highland area), intersecting moderate basement hosted uranium mineralization over a total length of 8.5 m. One additional drill hole targeted the possible southwest extension of the Roughrider high-grade zone and a nickel anomaly from historic holes, but no anomalous uranium or nickel mineralization was intersected.

The 2010 summer drill program began on July 22 and ended on September 7. Sixteen holes were drilled, recovering a total of 5,172 m of core. Three ‘geology holes’ were drilled to test the location of the poorly constrained north side orthogneiss / pelite contact. Seven holes targeted mineralization near holes drilled during the winter. Six of the seven holes intersected moderate to strong uranium mineralization. Three holes targeted mineralization in the J-East area near the eastern property boundary of claim S-107370. Two of these holes intersected weak to moderate uranium mineralization; the northernmost drill hole did not intersect any anomalous radioactivity. Finally, three holes were drilled to test for additional mineralization in Highland around WAT10-092A. WAT10-107A and WAT10-108 were vertical drill holes collared south where WAT10-092A intersected anomalous uranium mineralization. Both holes cored strongly altered lower sandstone and metasedimentary basement with weak to moderate intermittent uranium mineralization. The final hole was drilled to target the western extension of mineralization intersected in WAT10-092A. Weak, sporadic basement hosted uranium mineralization was intersected but of lower grade than that seen in WAT10-092A.

10.9.6 2011 Drilling

The winter 2011 drill program began on January 8 and ended on April 6. 82 holes were drilled during the program totalling 25,717 m of core. The main objectives of the drill program were to infill around the mineralization defined at the J Zone during 2010 drilling and expand the deposit along strike to the west using two drill rigs. Thirty-three out of 50 infill drill holes at the J Zone intersected uranium mineralization which effectively extended the deposit from 120 m in length to 370 m. The best grade x thickness intersected at the property to date was drilled in hole WAT11-131 which averaged 7.84 wt% U_3O_8 over 14.5 m. Thirteen holes were drilled in the Highland target area directly along strike of the high-grade mineralization seen in holes WAT11-143, WAT11-170 and WAT11-188 but no significant mineralization was intersected.

Another four drill holes followed up mineralization seen in drill hole WAT10-102 in J-East but failed to intersect mineralization of a similar thickness or grade. The PKB discovery, 200 m to the west of the J Zone, within the Discovery Bay corridor, was made early in the winter program by analysing the relationship between the location of a redefined Discovery Bay EM conductor and the J Zone. The EM survey directly over the J Zone showed the conductor, interpreted to reflect the graphitic cataclasite proximal to mineralization, occurring approximately 40 m to the south of the actual ore deposit. Drill hole WAT11-122 was collared 40 m north of the EM conductor trace in the PKB zone along the flank of a large resistivity low. The drill hole intersected 5.0 m of mineralization straddling the unconformity grading 0.52 wt% U_3O_8. An additional seven drill holes in the PKB area defined an ore lens approximately 50 m east-west and 30 m north-south roughly on strike with the J Zone. The same EM conductor and resistivity low relationship was applied 1.5 km west of the J Zone in drill hole WAT11-153A, which returned 1.5 m of mineralization averaging 0.23 wt% U_3O_8 and an additional 1.0 m of 0.09 wt% hosted in strongly altered metasediments, in an area now referred to as Summit.

A third drill rig, mobilized in February, tested geophysical anomalies along the Discovery Bay corridor and significant EM conductors with coincident resistivity anomalies in the Oban target area. Thin, intermittent uranium mineralization was intersected in five of seven exploration drill holes along the central O2 conductor at Oban with the strongest mineralization present in drill hole WAT11-172 hosted in hematized lower sandstone.

The summer 2011 drill program at Waterbury Lake began on June 16 and finished on July 21. A total of 7,584 m were drilled in 21 drill holes. Two drill rigs were utilized during the summer program with one rig testing for a mineralized corridor between the western extent of the J Zone eastern lens and the PKB mineralized lens, and the second drill rig testing exploration targets in the area around drill hole WAT11-153A, and in the Oban and Murphy Lake areas. The J Zone drill rig intersected unconformity mineralization in 11 of 12 drill holes and successfully established a mineralized corridor between the J Zone and PKB, defining the J Zone western lens. Five of the J Zone holes tested the metasedimentary corridor to the west of PKB and continued to intersect unconformity mineralization suggesting the deposit remains continuous along strike. The best mineralized intercept returned during the summer program was in drill hole WAT11-200 which intersected 11.5 m averaging 0.32 wt% U_3O_8. The second drill rig began in the 153A area (renamed as Summit) testing along strike of the mineralization intersected in hole WAT11- 153A. Drill hole WAT11-199, a 30 m step out to the west of 153A intersected 13.5 m of mineralization averaging 0.17 wt% U_3O_8 hosted in pervasively altered metasediments.

Three test holes were drilled in Oban testing the O1, O2 and O3 conductors along the flanks of resistivity lows interpreted to be caused by hydrothermal alteration associated with a mineralizing fluid. None of the Oban holes intersected uranium mineralization.

Three holes were drilled at the Murphy Lake target area testing a significant resistivity low and an offset series of strong EM conductors. No significant uranium mineralization was intersected in any of the Murphy Lake drill holes.

10.9.7 2012 Drilling

The winter 2012 drill program began on January 8 and ended on April 6. A total of 86 holes (32,770) were drilled during the program including 49 holes in and around the J Zone (Figure 10-2). The main objectives of the drill program in the J Zone area were to infill around the mineralization defined at the J Zone during 2010 drilling and expand the deposit along strike to the west. Forty of the 49 infill and step-out drill holes at the J Zone intersected uranium mineralization which successfully widened the lateral north-south mineralized dimensions by up to 55m and confirmed continuity of wide widths of mineralization in areas tested by earlier programs. Uranium mineralization was intersected all along the J Zone's east-west strike length, which now extends for 667 metres. Generally, wider intervals of discrete mineralization were intersected in the J Zone areas as compared to previous drilling, including widths up to 23.0m (WAT12-226), 18.5m (WAT12-293), 12.5m and 13.5m (WAT12-229) and 14.0m (WAT12-237B) (as measured down-hole; not necessarily true width).

Significant results include:

- Hole WAT12-242 (Line 300W): 9.0m of 1.37% U_3O_8, including 1.50m of 3.72% U_3O_8 and 1.50m of 2.64% U_3O_8 (unconformity).
- Hole WAT12-244 (Line 300W): 5.50m of 1.97% U_3O_8, including 1.0m of 9.61% U_3O_8; 4.0m of 0.28% U_3O_8 (unconformity).
- Hole WAT12-247 (Line 300W): 8.0m of 1.05% U_3O_8, including 3.0m of 2.22% U_3O_8 (unconformity).
- Hole WAT12-229 (Line 270W): 12.5m of 0.36% U_3O_8; 13.5m of 0.47% U_3O_8, including 1.0m of 1.66% U_3O_8.
- Hole WAT 12-237B (Line 285W): 14.0m of 0.27% U_3O_8, including 2.50m of 0.63% U_3O_8 (sandstone and unconformity).
- Hole WAT12-253B (Line315W): 5.50m of 0.42% U_3O_8 (unconformity).
- Hole WAT12-300 (Line375W): 12.0m of 0.21%U_3O_8, including 5.0m of 0.41% U_3O_8 (unconformity).
- Hole WAT12-293 (Line 390W): 18.5m of 0.10% U_3O_8; 0.50m of .11% U_3O_8 (unconformity).
- Hole WAT12-295 (Line 390W): 13.5m of 0.13% U_3O_8; 1.50m of 0.19% U_3O_8 (unconformity).
- Hole WAT12-226 (Line 480W): 23.0m of 0.20% U_3O_8, including 3.0m of 0.64% U_3O_8 (unconformity); 3.0m of 0.27% U_3O_8 (basement).
- Hole WAT12-228 (Line 480W): 12.5m of 0.31% U_3O_8, including 1.0m of 1.22% U_3O_8 (unconformity); 1.5m of 0.66% U_3O_8 (basement).
- Hole WAT12-284C (Line525W): 3.0m of 1% U_3O_8 (basement).
- Hole WAT12-221 (Line 465W): 5.0m of 0.44% U_3O_8; 1.0m of 0.20% U_3O_8 (sandstone); 2.50m of 0.13% U_3O_8; 1.50m of 0.06% U_3O_8; 4.0m of 0.24% U_3O_8 (unconformity).

10.9.8 2013 Drilling

A total of 68 drill holes and 11 restarts were completed during the 2013 winter drill program, which totaled 21,012.9 meters (Figure 10-3). The 2013 program focused on the delineation and growth of the J Zone. Drilling was segregated into areas A, B and C (J Zone East, Central and West) within the J Zone and the primary objective was expansion of the zone both west and north of the known mineralized area.

The following is a description of the results from the winter drill program. Results include radioactive readings. Natural gamma radiation in drill core that is reported were measured in counts per second (cps) using a hand held Exploranium GR-110G total count gamma-ray scintillometer. The relevant Qualified Persons caution that scintillometer readings are not directly or uniformly related to uranium grades of the rock sample measured, and should be used only as a preliminary indication of the presence of radioactive materials. The degree of radioactivity within the mineralized intervals is highly variable and associated with visible pitchblende mineralization. All intersections are down-hole, core interval measurements and true thickness is yet to be determined.

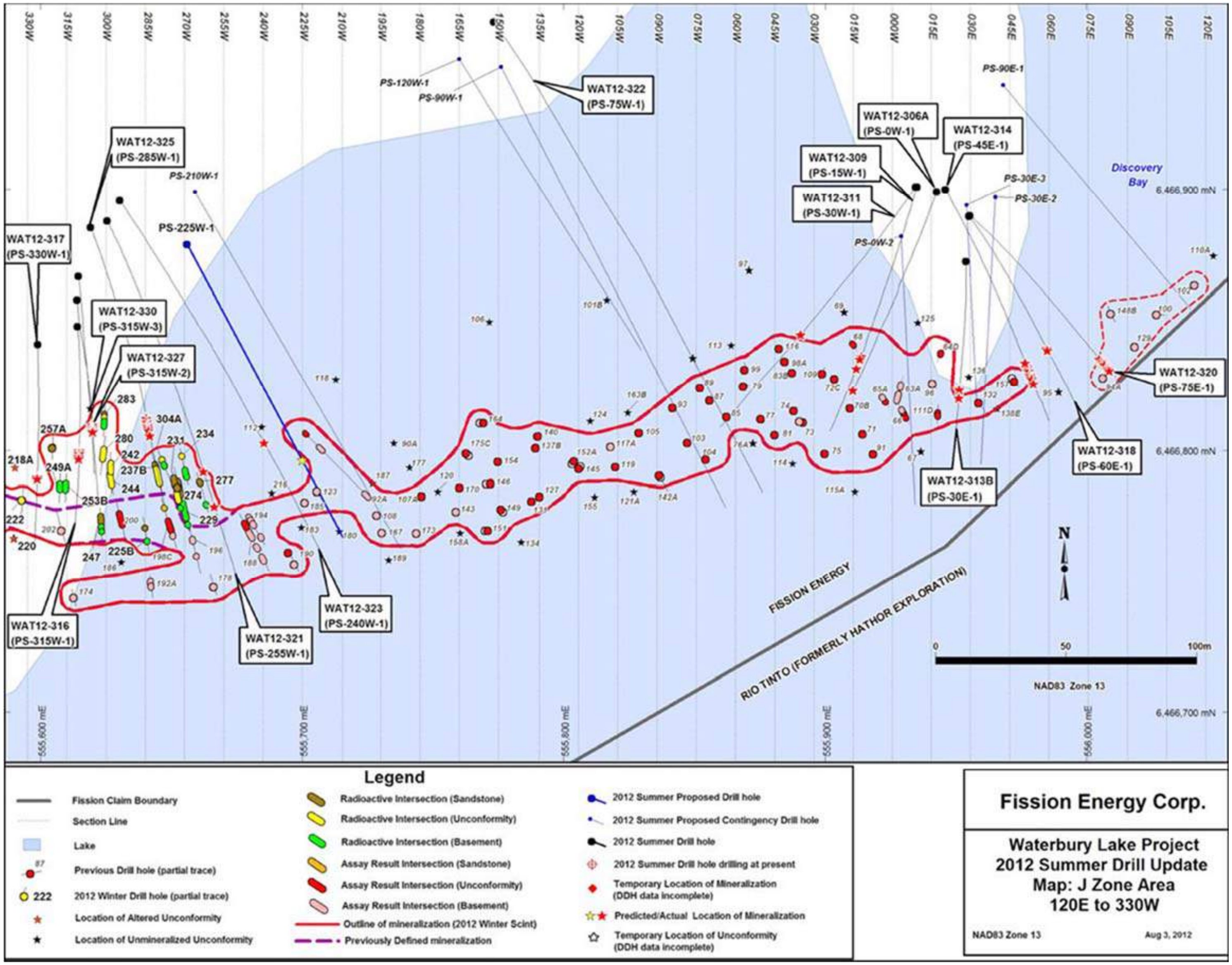


Figure 10-2: J Zone Summer 2012 drill holes (from Fission 2012 Assessment Report).

J Zone Area A drill hole highlights:

Area A is the eastern most section of the J Zone located between lines L120E and L210W. A total of 20 holes were drilled in this region of which 4 were mineralized (Table 10-1), intersecting weak to off-scale radioactivity. Drilling in Area A focused on testing for the extension of basement hosted mineralization adjacent to Rio Tinto's Roughrider deposit and further delineating the northern boundary of the J Zone for unconformity associated mineralization.

- WAT13-359 (line 070E) was drilled along the eastern boundary of the J Zone and intersected a 4.0m wide zone (209.5 – 213.5m) of weak to off-scale basement hosted radioactivity, including a 0.1m interval of off-scale (>9999 cps) radioactivity. Two subordinate zones of weak to moderate basement hosted radioactivity occurred to a depth of 226.5m. Hole WAT13-359 intersected 4.0m (209.5 - 213.5m) grading 0.443% U_3O_8 including 0.5m of 2.14% U_3O_8.
- WAT13-345 (line 150W) intersected a 12.0m wide zone (184.5 – 196.5m) of weak to moderate uranium mineralization straddling the unconformity (190.0m). This intersection extends the J Zone boundary approximately 10m to the north on line 150W. Hole WAT13-345 intersected 7.5m (185.5m - 193m) grading 0.108% U_3O_8.
- WAT13-373 (line 120W) intersected a 3.0m interval of weak to moderately radioactive basement mineralization 45m to the north of the current delineated boundary. This intersection represents the northernmost mineralized intersection of the J Zone. Hole WAT13-373 intersected 2.5m (213.5m - 216m) grading 0.088% U_3O_8.

J Zone Area B drill hole highlights:

Area B is the central section of the J Zone located between lines 210W and 435W. A total of 18 holes were drilled in this region of which 11 were mineralized (Table 10-1). Drilling in Area B focused on drill testing open areas to the north and south of the J Zone Deposit delineated boundary.

- WAT13-338 (line 405W) intersected a 5.0m wide interval (199.5 – 204.5m) of weak to strongly radioactive unconformity associated mineralization, including a 0.1m wide interval of off-scale (>9999 cps) radioactivity. Hole WAT13-338 intersected 1.5m (203.5m - 204.5m) grading 0.859% U_3O_8.
- WAT13-352A (line 250W) intersected a 19.0m wide zone (204.5 – 223.5m) of weak to moderate radioactivity straddling the unconformity (206.0m). This intersection fills in a gap to the south on line 255W. Hole WAT13-352A intersected 15m (204m - 219m) grading 0.174% U_3O_8.

- WAT13-398 (line 260W) intersected a 15.0m wide zone (195.5 – 210.5m) of weak to moderate radioactivity straddling the unconformity (197.0m). This intersection extends the J Zone boundary to the north on line 255W. Hole WAT13-398 intersected 10m (198m - 208m) grading 0.132% U_3O_8.

J Zone Area C drill hole highlights:

Area C is the western most section of the J Zone and is located west of (and including) line 435W. The J Zone had previously been delineated westward to line 540W (hole WAT12-289). Winter 2013 drilling in Area C was designed to test for additional associated mineralization between line 435W and line 540W as well as test westward to line 660W along trend to assess the potential for mineralization beyond the currently defined western boundary.

A total of 30 holes were drilled in Area C. Fifteen holes were mineralized (Table 10-1) including 2 westward step-out drill holes (WAT13-380 and 383) which extended the J Zone mineralized boundary an additional 20m west to line 560W (WAT13-380). Several holes in Area C intersected wide zones of mineralization, confirming the potential of Area C as a significant part of the J Zone Deposit.

Nine holes between lines 495W to 510W (WAT13-346, 350, 354, 357A, 361A, 364, 368, 371 and 374) were drilled with a collar azimuth of approximately 275°, in order to optimally intersect mineralization where a complex north-south fault was interpreted to off-set mineralization. Several of these holes intersected significant widths of mineralization higher up in the sandstone above the unconformity than previous proximal north-south oriented holes had encountered.

- WAT13-346 (line 500W) intersected a 22.5m wide interval (196.0 – 218.5m) of weak to strong radioactive mineralization, including a 0.1m interval of off-scale (>9999 cps) radioactivity, that straddles the unconformity (209.5m). Hole WAT13-346 intersected 7.0m (197 - 204m) grading 0.599% U_3O_8 and 5.0m (206.5 – 211.5m) grading 0.178% U_3O_8.
- WAT13-368 (line 500W) intersected an 18.0m wide interval (188.5 – 206.5m) of weak to strong radioactive mineralization, including a 0.1m interval of off-scale (>9999 cps) radioactivity, occurring dominantly in the sandstone directly above the unconformity (203.9m). This intersection is approximately 10m north of the currently defined boundary of the J Zone. Hole WAT13-368 intersected 17m (189.0 – 206m) grading 0.360% U_3O_8 including 0.5m (203.5 - 204m) grading 2.0% U_3O_8.
- WAT13-366 (line 490W) intersected a 12.5m wide interval (187.0 – 199.5m) of weak to strong radioactive mineralization, including a 0.2m interval of off-scale (>9999 cps) radioactivity, primarily hosted in the lower sandstone directly above the unconformity (198.4m). Hole WAT13-366 intersected 10.5m (189 – 199.5m) grading 0.640% U_3O_8 including 4.0m (190.5 – 194.5m) grading 1.252% U_3O_8.

- WAT13-377 (line 525W) intersected a 12.0m wide interval (218.5 – 230.5m) of weak to strong radioactive basement mineralization, including several narrow intervals totaling 0.31m of off-scale (>9999 cps) radioactivity. Hole WAT13-377 intersected 17m (219.0 – 236.0m) grading 0.374% U_3O_8, including 3.0m (219.5 – 222.5m) grading 1.252% U_3O_8.

Table 10-1: J Zone Winter 2013 Assay Results (>0.05% U_3O_8 cut-off), (Armitage & Sexton, 2013).

AREA	Hole ID	Grid Line	From (m)	To (m)	Interval (m)	U_3O_8 (%)	Unconformity Depth (m)
A	WAT13-343	135W		No significant mineralization			210.3
A	WAT13-345	150W	185.5	193.0	7.5	0.108	190.0
			196.0	196.5	0.5	0.077	
A	WAT13-348	105E	302.0	306.0	4.0	0.080	197.1
A	WAT13-351	090E		No significant mineralization			199.9
A	WAT13-353A	105E		No significant mineralization			198.4
A	WAT13-356	075E		No significant mineralization			200.9
A	WAT13-359	070E	209.5	213.5	4.0	0.443	203.2
			219.5	220.0	0.5	0.060	
			225.0	226.0	1.0	0.097	
A	WAT13-362	060E		No significant mineralization			204.1
A	WAT13-365	045E		No significant mineralization			199.7
A	WAT13-367	045E		No significant mineralization			209.7
A	WAT13-370	035E		No significant mineralization			213.9
A	WAT13-372	025E		No significant mineralization			209.0
A	WAT13-373	120W	213.5	216.0	2.5	0.088	203.9
A	WAT13-375	105W		No significant mineralization			201.5
A	WAT13-376	0		No significant mineralization			203.5
A	WAT13-379	085W		No significant mineralization			198.9
A	WAT13-381	080W		No significant mineralization			208.5
A	WAT13-384	105W		No significant mineralization			198.8
A	WAT13-387	150W		No significant mineralization			195.3
A	WAT13-389B	175W		No significant mineralization			194.0
B	WAT13-331	275W	229.5	231.5	2.0	0.157	206.9
B	WAT13-333	375W	213.5	214.0	0.5	0.074	209.9
B	WAT13-336	390W		No significant mineralization			215.0
B	WAT13-338	405W	199.5	200.0	0.5	0.238	203.5
			203.0	204.5	1.5	0.859	
B	WAT13-347A	225W	206.5	210.5	4.0	0.051	197.1
B	WAT13-349A	235W		No significant mineralization			197.3
B	WAT13-352A	250W	204.0	219.0	15.0	0.174	206.0
			221.5	223.5	2.0	0.069	

AREA	Hole ID	Grid Line	From (m)	To (m)	Interval (m)	U_3O_8 (%)	Unconformity Depth (m)
B	WAT13-355	235W	226.0	232.5	6.5	0.111	206.0
B	WAT13-382	380W		No significant mineralization			201.0
B	WAT13-385	360W		No significant mineralization			20.7
B	WAT13-388	315W		No significant mineralization			200.0
B	WAT13-390	435W		No significant mineralization			202.2
B	WAT13-391	300W		No significant mineralization			205.9
B	WAT13-393	255W		No significant mineralization			199.2
B	WAT13-394	265W		No significant mineralization			197.4
B	WAT13-395	245W		No significant mineralization			203.0
B	WAT13-397	280W	224.0	226.5	2.5	0.087	203.5
B	WAT13-398	260W	198.0	208.0	10.0	0.132	197.0
C	WAT13-332	605W		No significant mineralization			210.1
C	WAT13-334	615W		No significant mineralization			206.3
C	WAT13-335	615W		No significant mineralization			210.2
C	WAT13-337	660W		No significant mineralization			217.9
C	WAT13-339	445W		No significant mineralization			211.0
C	WAT13-340A	660W		No significant mineralization			215.8
C	WAT13-341	450W	205.0	215.5	10.5	0.152	204.9
C	WAT13-342	660W		No significant mineralization			200.3
C	WAT13-344A	615W		No significant mineralization			209.1
C	WAT13-346	500W	197.0	204.0	7.0	0.599	209.5
			206.5	211.5	5.0	0.178	
			225.0	225.5	0.5	0.155	
C	WAT13-350	500W	202.5	207.5	5.0	0.245	207.1
			211.0	211.5	0.5	0.139	
			215.0	224.5	9.5	0.239	
C	WAT13-354	495W	194.5	203.0	8.5	0.700	206.1
C	WAT13-357A	510W		No significant mineralization			207.2
C	WAT13-358	470W	198.5	203.0	4.5	0.079	203.0
C	WAT13-360	465W	190.0	201.0	11.0	0.147	198.0
C	WAT13-361A	505W	215.5	216.5	1.0	0.142	210.0
C	WAT13-363	480W		No significant mineralization			220.9
C	WAT13-364	505W	198.0	198.5	0.5	0.170	206.8
			201.0	203.0	2.0	0.088	
			206.5	209.5	3.0	0.241	
C	WAT13-366	490W	189.0	199.5	10.5	0.640	198.4
			208.0	208.5	0.5	0.095	
C	WAT13-368	500W	189.0	206.0	17.0	0.360	203.9
C	WAT13-369	495W	191.0	192.5	1.5	0.335	201.8

AREA	Hole ID	Grid Line	From (m)	To (m)	Interval (m)	U_3O_8 (%)	Unconformity Depth (m)
			195.5	202.5	7.0	0.364	
C	WAT13-371	505W	194.5	197.5	3.0	0.078	204.1
C	WAT13-374	490W	No significant mineralization				203.0
C	WAT13-377	525W	219.0	236.0	17.0	0.374	212.0
			239.0	239.5	0.5	0.094	
C	WAT13-378A	580W	No significant mineralization				205.7
C	WAT13-380	560W	246.5	248.0	1.5	0.047	220.3
C	WAT13-383	540W	214.0	220.0	6.0	0.304	207.5
C	WAT13-386	570W	No significant mineralization				206.8
C	WAT13-392	465W	No significant mineralization				206.4
C	WAT13-396	490W	No significant mineralization				197.2

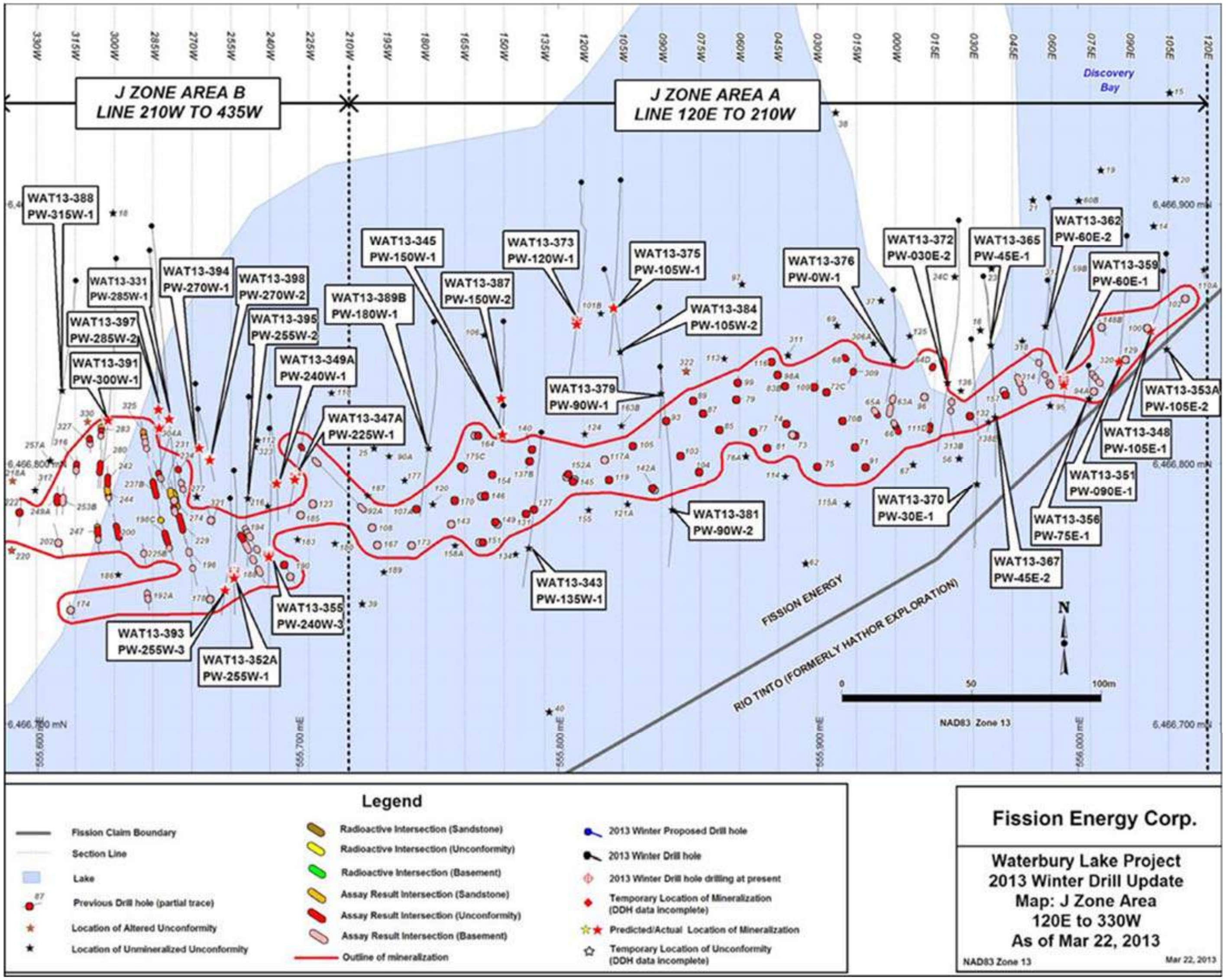


Figure 10-3: Plan view map showing the approximate J Zone deposit outline and unconformity drill hole pierce points (from Fission 2013).

10.9.9 2014 Drilling

A total of nine diamond drill holes for a total of 3,100 metres were completed in 2014. Drilling followed up on existing drilling results in the Oban and Discovery Bay areas. Within the Oban area, drill holes WAT14-406A and WAT14-407 intersected weak mineralization (up to 1,700 ppm partial U over 0.5 metres), while in the Discovery Bay area WAT14-411A intersected 1,215 ppm U-p over 1.0 metre (Carmichael, 2014).

10.9.10 2015 Drilling

A total of 12 drill holes for a total of 4,420.8 metres were completed in 2015. Four holes focused on testing DC-IP resistivity low anomalies in the Summit area northwest of the J Zone. Eight holes tested similar DC-IP resistivity low targets along the Oban North and South conductors on the WAT15-G1 grid. No significant alteration or structure was noted from the drilling in the Summit area. Weak anomalous uranium mineralization was noted from drilling on line 1200E of the WAT15-G1 grid in the Oban area which was worthy of further follow-up drilling (Carmichael, 2015).

10.9.11 2016 Drilling

A total of 8 drill holes for a total of 3,153 metres were completed in 2016. Six of the holes (WAT16-426 through WAT16-431) were completed over the Oban are on grids WAT15-G1 and WAT16-G1 and two holes of the holes (WAT16-432A to WAT16-433) were completed over the Hamilton Lake area on grid WAT16-G2. WAT16-433 intersected 389 ppm partial U from 421.5 to 422.0 metres depth and 299 ppm partial U from 422.0 to 422.5 metres depth immediately above the unconformity on Line 30+00N of the WAT16-G2 grid.

10.9.12 2017 Drilling

Work completed during the 2017 exploration season included the drilling of 18 drill holes for a total of 8,524.5 metres. The drilling was completed in two phases: nine drill holes, WAT17-434 through WAT17-442, for a total of 4,802.8 metres were drilled during a winter program on the WAT16-G2 grid and a further nine holes, WAT17-443 through WAT17-451, for a total of 3,721.7 metres were drilled during a summer program on the Discovery Bay 2008 grid.

The winter drilling on the WAT16-G2 grid (Hamilton Lake area) was testing targets derived from a 2016 DC-IP ground resistivity survey, targets were primarily the coincidence of the modelled robust edges of several prominent north-south trending basement resistivity lows which were defined along the western margin of the survey and the interpreted unconformity contact. Drill hole WAT17-436 intersected 934 ppm partial U from a 0.5 metre spot sample taken at 522.3 metres depth in a granite located footwall to a prominent fault structure defined on Line 33+00N of the WAT16-G2 grid. Follow-up drill hole WAT17-438, which targeted the fault structure near the unconformity, intersected 381 ppm U partial over 0.5 metres from 412.9 metres depth, 2,330 ppm partial U over 0.5 metres from 414.1 metres depth, 140 ppm partial U over 0.5 metres from 416.6 metres depth and 140 ppm partial U over 0.5 metres depth from 431.7 metres depth. The remainder of the drill holes from the winter 2017 drill program did not intersect any anomalous geochemistry.

The summer 2017 drilling was following up on historic drill holes WAT08-029, which had anomalous uranium in the basal sandstone and WAT09-053, which had intersected anomalous structure and alteration in the basement suggesting there was the possibility that a uranium mineralization system had been overshot by WAT08-029 and undershot by WAT09-053. A 2008 DC-IP ground resistivity survey on the Discovery Bay 2008 grid had provided the initial basement resistivity low targets for drill holes WAT08-029 and WAT-09-053.

Drill holes WAT17-443 through WAT17-451 were drilled along the south-eastern margin of disposition S-107370 targeting a weak east-west trending airborne magnetics low trend roughly 1500 metres to the northeast of the J Zone deposit. Drilling intersected the unconformity around an elevation of 290 metres above sea level and a fault bounded package of graphitic metasediments. Hanging-wall to the metasedimentary package is granite and footwall to the metasedimentary package is a granitic gneiss unit. The hanging-wall contact fault is interpreted to be the primary off-set fault with as much as 14 metres of off-set at the unconformity. The basement lithologies are interpreted to strike roughly east-west and dip moderately steep to the north (foliation and lithological contacts indicate and dip averaging around -65° to the north).

A summary of the drill hole results for WAT17-443 to WAT17-451 is provided below and drill hole collar coordinates, azimuth and dip is provided in Table 10-2. As the drill holes are oriented steeply toward the south-southeast and the mineralized lenses are interpreted to dip moderately to the north, the true thickness of mineralization is expected to be approximately 75% of the intersection lengths.

Drill hole WAT17-443 intersected 0.173% U_3O_8 over 4.5 metres from 284.1 to 288.6 metres depth, 0.085% U_3O_8 over 1 metre from 290.2 to 291.2 metres depth and 1.183% U_3O_8 over 1 metre from 298 to 299 metres depth. Drill hole WAT17-444 which was drilled as a 50 metre step down dip on section from WAT17-443 intersected 0.072% U_3O_8 over 1 metre from 341.3 to 342.3 metres depth, 0.585% U_3O_8 over 1 metre from 347.4 to 348.4 metres depth and 0.174% U_3O_8 over 1 metre from 362 to 363 metres depth. Drill holes WAT17-445 through WAT17-448 were drilled as a fence of drill holes 50 metres along strike to the west of drill holes WAT17-443 and WAT17-444. Drill hole WAT17-445 intersected 0.058% U_3O_8 over 1 metre from 271.5 to 272.5 metres depth and 0.168% U_3O_8 over 1 metre from 278 to 279 metres depth. Drill hole WAT17-446A, which ended up being a 65 metre step down dip from drill hole WAT17-445, intersected 9.103% U_3O_8 over 3.7 metres (including 16.78% U_3O_8 over 2 metres) from 306.5 to 310.2 metres depth, 0.225%

U_3O_8 over 1 metre from 336.1 to 337.1 metres depth and 0.084% U_3O_8 over 1.5 metres from 342.3 to 343.8 metres depth.

Drill holes WAT17-449 through WAT17-451 were drilled as a fence of drill holes 50 metres along strike to the west of drill holes WAT17-445 through WAT17-448. Drill hole WAT17-449 intersected 0.108% U_3O_8 over 1 metre from 321.5 to 322.5 metres depth, 0.065% U_3O_8 over 1 metre from 345.1 to 346.1 metres depth, 0.052% U_3O_8 over 1 metre from 349.4 to 350.4 metres depth, 1.72% U_3O_8 over 7.5 metres (including 8.172% U_3O_8 over 1.5 metres) from 369 to 376.5 metres depth and 0.289% U_3O_8 over 5 metres (including 1.004% U_3O_8 over 1 metre) from 379.3 to 384.3 metres depth. Drill hole WAT17-450A, which was a 50 metre step up-dip of WAT17-449, intersected 0.179% U_3O_8 over 1 metre from 279 to 280 metres depth, 0.406% U_3O_8 over 1 metre from 314.5 to 315.5 metres depth and 1.487% U_3O_8 over 4.5 metres (including 3.895% U_3O_8 over 1m and 2.0% U_3O_8 over 1m) from 318.5 to 323 metres depth and 0.1% U_3O_8 over 1 metre from 335 to 336 metres depth. Drill hole WAT17-451, which was drilled as a 50 metre step down dip from WAT17-449, intersected 0.282% U_3O_8 over 3.5 metres from 402 to 405.5 metres depth and 0.179% U_3O_8 over 1 metre from 420.5 to 421.5 metres depth.

Table 10-2: Drill hole parameters for drill holes WAT17-443 to WAT17-451.

Hole ID	UTM NAD83-13		Elev. (m a.s.l.)	Length (m)	Azimuth (True)	Dip (Deg.)	UC Depth (m)
	Easting	Northing					
WAT17-434	540207	6467689	476.5	481.4	265	-81	376.5
WAT17-435	540142	6467370	477	645.8	272	-77	375.9
WAT17-436	540042	6467370	477	532.6	272	-67	429.6
WAT17-437	540028	6467972	465	575	268	-70	419
WAT17-438	540084	6467370	477	495	268	-71	416.8
WAT17-439	540770	6467375	493	537	265	-70	384.8
WAT17-440	540015	6468595	481	480	265	-70	437.9
WAT17-441	540000	6466775	483	531	265	-70	458.8
WAT17-442	540015	6468595	481	525	265	-82	409.5
WAT17-443	556852.55	6467761.81	492.20	425.7	152	-73	212.89
WAT17-444	556835.20	6467799.75	492.84	420	152	-73	211.98
WAT17-445	556803.58	6467742.11	492.45	375	152	-73	210.65
WAT17-446	556791.58	6467769.09	491.61	33	152	-75.5	---
WAT17-446A	556791.58	6467769.09	491.61	390	152	-75.5	206.5
WAT17-447	556830.97	6467685.25	490.10	321	155	-85	216.3
WAT17-448	556773.92	6467805.47	493.00	446	155	-75	207.65
WAT17-449	556729.18	6467793.76	494.18	420	153	-73.3	212.3
WAT17-450	556744.63	6467760.94	490.81	39	153	-74	---
WAT17-450A	556744.63	6467760.94	490.81	387	153	-74	210.7
WAT17-451	556709.97	6467827.98	500.74	465	153	-72.5	218.5

10.9.13 2018 Drilling

A 13,110 metre, 28 drill hole drilling program was completed during 2018, including 21 holes completed during the winter on the Huskie zone, and seven holes completed during the summer; three of which were on the Huskie zone and the remaining four were testing regional targets along strike of the inferred Midwest Structure as it cross-cut the Oban grid area.

The winter drill program on the Waterbury Lake Project focused on testing for possible extensions to the Huskie zone mineralization, which was discovered during a summer 2017 drill program on the property. Of the 21 holes completed during the winter program, significant mineralization was encountered in drill hole WAT18-452, which included 4.5% U_3O_8 over 6.0 meters (including 5.8% U_3O_8 over 4.5 meters) and 1.9% U_3O_8 over 1 metre. Drill holes WAT18-453 through WAT18-472 thoroughly tested the immediate and along strike potential of the Huskie zone. Although significant structure and alteration was frequently intersected, significant uranium mineralization was absent in these holes.

A total of three drill holes were completed as part of the summer 2018 program at the Huskie zone, with targets located both up-dip and down-dip of the known mineralization, with a view to test for high-grade extensions related to northeast striking cross-cutting faults associated with the regional Midwest structure. Drill hole WAT18-475A, completed as a 50 metre step up-dip of the know mineralization, intersected 0.12% eU_3O_8 over 1.0 metre from 277.5 metres and 0.15% eU_3O_8 over 1.0 metre from 285.5 metres. Due to core loss, the interval is reported as radiometric equivalent U_3O_8 (“e U_3O_8”) derived from a calibrated total gamma downhole probe. The two holes designed to test for extensions down-dip of Huskie, WAT18-473 and WAT18-474 intersected the targeted structure but no significant mineralization was encountered.

Drill hole WAT18-475A would be the last hole drilled into the Huskie zone in 2018. The 28 drill holes completed over the Huskie zone at a 50 metre by 50 metre spacing had defined a mineralized zone between 50 and 225 metres vertically below the sub-Athabasca unconformity (265 and 435 metres vertically below surface) and measures approximately 250 metres along strike, up to 170 metres along dip, with individual lenses varying in interpreted true thickness between approximately 2 and 7 metres. Summary of highlights from the 2017- 2018 drilling at Huskie are presented in Table 10-3 and drill hole collar coordinates, azimuths and dips are provided in Table 10-4.

Table 10-3: Summary of Highlights from the 2017 and 2018 Drilling at Huskie.

Hole ID	From	To	Length	Sample	%U_3O_8	Lens
WAT17-443	298	298.5	0.5	S060512	1.52	Huskie 1
WAT17-444	347.4	347.9	0.5	S060517	1.17	Huskie 2
WAT17-446A	307.7	308.2	0.5	S060527	12.3	Huskie 2
WAT17-446A	308.2	308.7	0.5	S060528	10.6	Huskie 2
WAT17-446A	308.7	309.2	0.5	S060529	40.7	Huskie 2
WAT17-446A	309.2	309.7	0.5	S060530	3.52	Huskie 2
WAT17-449	375	375.5	0.5	S060558	8.81	Huskie 2
WAT17-449	376	376.5	0.5	S060560	15.4	Huskie 2
WAT17-449	381.3	381.8	0.5	S060567	1.53	Huskie 1
WAT17-450A	319	319.5	0.5	S060593	1.54	Huskie 2
WAT17-450A	319.5	320	0.5	S060594	6.25	Huskie 2
WAT17-450A	321.5	322	0.5	S060598	2.61	Huskie 2
WAT17-450A	322	322.5	0.5	S060599	1.39	Huskie 2
WAT17-451	402	402.5	0.5	S060609	1.15	Huskie 2
WAT18-452	419.5	420	0.5	S060766	4.84	Huskie 2
WAT18-452	421.5	422	0.5	S060770	13.5	Huskie 2
WAT18-452	422	422.5	0.5	S060771	12.9	Huskie 2
WAT18-452	422.5	423	0.5	S060772	1.14	Huskie 2
WAT18-452	423	423.5	0.5	S060773	8.41	Huskie 2
WAT18-452	423.5	424	0.5	S060774	10.5	Huskie 2
WAT18-452	438	438.5	0.5	S060787	3.19	Huskie 1
WAT18-460A	303.5	304	0.5	S060802	1.24	Huskie 2

Notes:

1. U_3O_8 is the chemical assay of mineralized split core samples.
2. As the drill holes are oriented steeply toward the south-southeast and the mineralized lenses are interpreted to dip moderately to the north, the true thickness of mineralization is expected to be approximately 75% of the intersection lengths.

A total of four holes were completed during the summer 2018 program on regional targets approximately 2.5 to 3.0 kilometres to the northeast of the Huskie deposit, where the regionally interpreted Midwest structure is projected to intersect the geologically favourable GB and Oban trends. The regional exploration drilling was highlighted by two drill holes along the GB trend, completed approximately 100 metres apart on a north-south fence, which both intersected basement-hosted uranium mineralization. The mineralization occurred as structurally-controlled disseminations of uraninite (pitchblende) associated with massive clay replacement. Highlight intersections included: 0.43% U_3O_8 over 1.0 metre (including 0.73% U_3O_8 over 0.5 metre) from 262.5 to 263.5 metres in drill hole WAT18-478 and 0.20% U_3O_8 over 0.5 metre from 372.0 to 372.5 metres, 0.45% U_3O_8 over 0.5 metre from 410.5 to 411.0 metres and 0.31% U_3O_8 over 0.5 metre from 420.0 to 420.5 metres in drill hole WAT18-479.

Table 10-4: Summary of 2018 diamond drill hole parameters.

Hole ID	UTM NAD83-13		Elev. (m a.s.l.)	Length (m)	Azimuth (True)	Dip	UC Depth (m)
	Easting mE	Northing mN					
WAT18-452	556758.57	6467841.59	495.10	541.0	153°	-75.3°	213.35
WAT18-453	556672.58	6467794.45	500.56	59.0	156°	-73.3°	---
WAT18-453A	556672.58	6467794.45	500.56	557.0	154°	-73.3°	216.80
WAT18-454	556693.13	6467867.51	505.00	53.0	151°	-72.5°	---
WAT18-454A	556693.13	6467867.51	505.00	506.0	151°	-72.6°	224.50
WAT18-455	556664.19	6467834.33	504.54	585.3	151°	-73.3°	219.80
WAT18-456	556646.57	6467868.85	508.04	539.0	151°	-73.3°	224.50
WAT18-457	556747.57	6467880.92	501.14	62.0	151°	-76.3°	---
WAT18-457A	556747.57	6467880.92	501.14	36.0	155°	-76.5°	---
WAT18-457B	556747.57	6467880.92	501.14	581.0	153°	-76.3	220.40
WAT18-458	556626.26	6467906.47	510.03	563.0	152°	-73.3°	230.85
WAT18-459	556816.77	6467834.93	494.13	122.0	151°	-74.5°	---
WAT18-459A	556816.77	6467834.93	494.13	451.4	152°	-74.5°	208.20
WAT18-460	556690.02	6467759.57	495.41	41.0	152°	-73.3°	---
WAT18-460A	556690.02	6467759.57	495.41	407.0	152°	-73.3°	215.00
WAT18-461	556899.84	6467777.14	490.54	240.7	151°	-74.0°	208.60
WAT18-462	556899.84	6467783.00	490.54	401.0	154°	-75.5°	208.60
WAT18-463	556674.87	6467766.13	497.65	428.0	176°	-74.0°	215.00
WAT18-464	556673.27	6467724.60	493.66	38.0	173°	-74.0°	---
WAT18-464A	556673.27	6467724.60	493.66	392.0	173°	-74.0°	212.00
WAT18-465	556880.10	6467818.73	493.13	155.0	151°	-75.5°	---
WAT18-466	556893.29	6467790.96	491.28	44.0	154°	-81.5°	---
WAT18-466A	556893.29	6467790.96	491.28	398.0	154°	-81.8°	---
WAT18-467	556575.22	6467764.71	503.88	407.0	173°	-74.0°	226.80
WAT18-468	556324.39	6467905.64	498.05	533.0	180°	-75.0°	223.10
WAT18-469	556574.60	6467722.82	500.74	380.0	180°	-73.5°	224.15
WAT18-470	556326.45	6467780.95	495.23	428.0	180°	-75.0°	209.50
WAT18-471	556575.42	6467651.53	496.06	266.0	180°	-82.0°	212.60
WAT18-472	556791.94	6467891.32	496.51	581.0	153°	-76.3°	217.70
WAT18-473	556776.08	6467860.90	494.64	515.0	154°	-76.3°	215.00
WAT18-474	556861.50	6467840.20	494.01	185.0	154°	-75.5°	---
WAT18-474A	556853.77	6467832.39	494.01	455.0	155°	-75.5°	210.60
WAT18-475	556745.80	6467699.71	489.69	38.0	154°	-81.0°	---
WAT18-475A	556745.80	6467699.71	489.69	327.0	154°	-81.0°	204.00
WAT18-476	557037.78	6470098.45	484.96	356.6	180°	-71.0°	215.60
WAT18-477	557445.00	6470105.50	478.61	431.0	180°	-70.0°	208.60
WAT18-478	557649.45	6470577.68	498.91	407	0°	-72.0°	216.20
WAT18-479	557648.61	6470498.85	488.28	494.4	0°	-74.0°	215.70

11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 Sample Preparation and Security

11.1.1 J Zone

The field program is supervised on-site by an experienced geologist with the role of Project Manager. The Project Manager oversaw all quality control aspects from logging, to sampling to shipment of the samples. Drill core was split once geological logging, sample mark up and photographing were completed. All drill core samples were marked out and split at the Fission splitting shack by Fission employees, put into 5-gallon sample pails and sealed and transported to Points North, Saskatchewan only prior to shipment. The samples were then transported directly to SRC Geoanalytical Laboratories (“SRC”) located in Saskatoon Saskatchewan by Marsh Expediting. Samples were prepared for analysis by SRC upon arrival. Beyond the marking, splitting and bagging conducted at the project site, Fission employees were not involved in sample preparation. No special security measures are enforced during the transport of core samples apart from those set out by Transport Canada regarding the transport of dangerous goods. Mineralized pulp material sent back to the Waterbury Lake Project from SRC Laboratories and were used as field reference material.

Sample data were recorded in typical three tag sample booklets provided by Alltech Mining Solutions. One tag was stapled into the core box at the start of the appropriate sample interval, one tag was placed into the sample bag and the final tag was retained in the sample booklet for future reference. For each sample, the date, drill hole number, project name and sample interval depths were noted in the sample booklet. The data were transcribed to excel spread sheet and stored on the Fission data server. Sample summary files were checked for accuracy against the original sample booklets after the completion of each drill program. The digital sample files also contain alteration and lithology information.

All geochemical, assay and bulk density samples were split using a manual core splitter over the intervals noted in the sample booklet. Half of the core was placed in a plastic sample bag with the sample tag and taped closed with fibre tape. The other half of the core was returned to the core box in its original orientation for future reference. After the completion of each sample, the core splitter, catchment trays and table were cleaned of any dust or rock debris to avoid contamination. Samples were placed in sequentially numbered 5 gallon plastic pails. Higher grade samples were generally packed into the centre of each pail and surrounded by lower grade or non-mineralized core in order to shield the radioactivity emitted.

All drill core samples were evenly and symmetrically split in half in order to try and obtain the most representative sample possible. Mineralized core samples which occur in drill runs with less than 80% core recovery are flagged for review prior to the resource estimation process. Core photos of the flagged samples are examined and individual samples showing a significant amount of core loss within the interval are removed from the resource estimate in order to avoid including samples which may have assay grades artificially increased through the removal of lower-grade matrix material. Recovery through the mineralized zone is generally good however and assay samples are assumed to adequately represent in situ uranium content.

All geochemical, assay and bulk density core samples were submitted to SRC. Samples are first dried and then sorted according to matrix (sandstone / basement) and then radioactivity level. Red line and ‘1 dot’ samples are sent to the geoanalytical laboratory for processing while samples ‘2 dot’ or higher (> 2,000 cps) are sent to a secure radioactive sample facility for preparation.

SRC is licensed by the Canadian Nuclear Safety Commission (CNSC) to safely receive process and archive radioactive samples. The facility is ISO/IEC 17025:2005 accredited by the Standards Council of Canada. Core sample residues are retained at the SRC sample storage facility after being analysed. Samples taken for short wave infrared spectroscopy” (SWIR) analysis using a Portable Infrared Mineral Analyser (PIMA) analyzer for clay analysis were sent to Ken Wasyliuk of Northwind Resources Ltd. (Northwind) of Saskatoon, an independent geological consultant with significant SWIR analytical experience. SRC is independent of Fission.

A series of blank and reference pulp samples were included with the samples from each drill hole for ICP-OES and uranium assay analysis. Duplicate samples of Athabasca, mineralized and basement rocks were also submitted as part of the project’s quality assurance / quality control (QA/QC) program (see Section 12.2 below). Results obtained for the QA/QC samples are compared with the original sample results to monitor data quality (Section 12.3).

11.1.2 Huskie

Denison have incorporated industry-standard sampling procedures throughout all exploration programs including drilling programs undertaken at Huskie in 2017 and 2018. Drill core is monitored by Denison staff from the time it is taken out of the ground until it is split and the samples are delivered to the laboratory. Unauthorized personnel are not permitted access to the drill rigs or the core logging and splitting facility at all times. Routine core handling and sampling procedures comprised the following:

- Core was placed in directly in wooden core boxes at the drill site and transported to Denison’s Waterbury Lake core yard by the authorized field personnel at the end of every shift.
- Upon arrival, core from the drill is marked logged, photographed, marked for sampling and split by Denison geologists.

- All samples are placed sealed clear plastic bags along with a pre-printed sample tag with sample number and barcode.
- Sealed samples bags are placed in sealed and labelled 5-gallon plastic pails or steel drums before transported to the Saskatchewan Research Council Geoanalytical Laboratories (SRC) in Saskatoon, Saskatchewan for analyses.
- All samples for U_3O_8 assays are transported directly in sealed containers by land to the SRC laboratory by Denison personnel.
- A sample transmittal form that identifies each batch of samples is prepared and presented to the receiving lab personnel.
- SRC performs sample preparation on all samples submitted.

11.2 Laboratory Sample Preparation Procedures

11.2.1 Sample Receiving

Samples are received at the SRC laboratory as either dangerous goods (qualified Transport of Dangerous Goods [TDG] personnel required) or as exclusive use only samples (no radioactivity documentation attached). On arrival, samples are assigned an SRC group number and are entered into the Laboratory Information Management System (LIMS).

All received sample information is verified by sample receiving personnel: sample numbers, number of pails, sample type/matrix, condition of samples, request for analysis, etc. The samples are then sorted by radioactivity level. A sample receipt and sample list is then generated and e-mailed to the appropriate authorized personnel at Denison. Denison is notified if there are any discrepancies between the paperwork and samples received.

11.2.2 Sample Sorting

To ensure that there is no cross-contamination between sandstone and basement, non-mineralized, low level, and high-level mineralized samples, they are sorted by their matrix and radioactivity level. Samples are firstly sorted in their group into matrix type (sandstone and basement/mineralized).

The samples are then checked for their radioactivity levels. Using a Radioactivity Detector System, the samples are classified into one of the following levels:

- “Red Line” (minimal radioactivity) <500 cps
- “1 Dot” 500 – 1,999 cps

- “2 Dots” 2000 – 2,999 cps
- “3 Dots” 3000 – 3,999 cps
- “4 Dots” 4000 – 4,999 cps
- “UR” (unreadable) >5,000 cps

The samples are then sorted into ascending sample numerical order and transferred to their matrix designated drying oven.

11.2.3 Sample Preparation

After the drying process is complete, “Red line” and “1 Dot” samples are sent for further processing (crushing and grinding) in the main SRC laboratory. All radioactive samples at “2 Dots” or higher are sent to a secure radioactive facility at SRC for the same sample preparation. Plastic snap top vials are labelled according to sample numbers and sent with the samples to the appropriate crushing room. All highly radioactive materials are kept in a radioactive bunker until they can be transported by TDG trained individuals to the radioactivity facility for processing.

Rock samples are jaw crushed to 60% passing -2 mm. Samples are placed into the crusher (one at a time) and the crushed material is put through a splitter. The operator ensures that the distribution of the material is even, so there is no bias in the sampling. One portion of the material is placed into the plastic snap top vial and the other is put in the sample bag (reject). The first sample from each group is checked for crushing efficiency by screening the vial of rock through a 2 mm screen. A calculation is then carried out to ensure that 60% of the material is -2 mm. If the quality control (QC) check fails, the crushing is redone and checked for crushing efficiency; if it still fails, the QC department is notified and corrective action is taken.

The crusher, crusher catch pan, splitter, and splitter catch pan are cleaned between each sample using compressed air.

The reject material is returned to its original sample bag and archived in a plastic pail with the appropriate group number marked on the outside of the pail. The vials of material are then sent to grinding; each vial of material is placed in pots (six pots per grind) and ground for two minutes. The material is then returned to the vials. The operator shakes the vial to check the fineness of the material by looking for visible grains and listening for rattling. The sample is then screened through a 106 micron sieve, using water. The sample is then dried and weighed; to pass the grinding efficiency QC, there must be over 90% of the material at minus 106 micron. The material is then transferred to a labelled plastic snap top vial.

The pots are cleaned out with silica sand and blown out with compressed air at the start of each group. In the radioactive facility, the pots are cleaned with water. Once sample pulps are generated, they are returned to the main laboratory to be chemically processed prior to analysis. All containers are identified with sample information and their radioactivity status at all times. When the preparation is completed, the radioactive pulps are returned to a secure radioactive bunker, until they can be transported back to the radioactive facility. All rejected sample material not involved in the grinding process is returned to the original sample container. All highly radioactive materials are stored in secure radioactive designated areas.

Sample preparation methods for the samples used in the Huskie mineral resource estimate meet or exceed industry standards.

11.3 Analytical Methods

All mineralized assay core samples from the J Zone and the Huskie deposit were analysed by the ICP1 package offered by SRC, which includes 62 elements determined by Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES). Boron analysis and uranium by fluorimetry (partial digestion) have also been conducted on all samples. Non-mineralized core samples from the Huskie drilling were analyzed using the ICP-MS1 with a lower detection limit (SRC, 2007).

11.3.1 Method: ICP1

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

11.3.1.1 Method Summary

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 62 analytes (46 total digestion, 16 partial digestion), with nine analytes being analyzed for both partial and total digestions (Ag, Co, Cu, Mo, Ni, Pb, U, V, and Zn) plus boron. These samples are also sometimes analyzed for Au by fire assay.

11.3.1.2 Partial Digestion

For partial digestion analysis, samples were crushed to 60% -2 mm and a 100 g to 200 g sub-sample was split out using a riffler. The sub-sample pulverized to 90% -106 µm using a standard puck and ring grinding mill. The sample was then transferred to a plastic snap top vial. An aliquot of pulp is digested in a digestion tube in a mixture of HNO_3:HCl, in a hot water bath for approximately one hour, then diluted to 15 mL using de-ionized water. The samples were then analyzed using a Perkin Elmer ICP-OES instrument (models DV4300 or DV5300)

11.3.1.3 Total Digestion

An aliquot of pulp is digested to dryness in a hot block digestor system using a mixture of concentrated $HF:HNO_3:HClO_4$. The residue is dissolved in 15 mL of dilute HNO3 and analyzed using the same instrument(s) as above.

11.3.2 Method: ICP-MS

(The multi-element determination by ICP-MS)

11.3.2.1 Method Summary

The analytical package includes the analysis of 47 elements and oxides using a three acid (HF/HNO3/HClO4) “total” digestion and a suite of 42 elements using a two acid (HNO3/HCl) “partial” digestion. Analysis of the lead isotopes (204Pb, 206Pb, 207Pb, and 208Pb) are also included in the package. Boron is determined by ICP-OES analysis after fusion with NaO2/NaCO3. PerkinElmer instruments (models Optima 300DV, Optima 4300DV, and Optima 5300DV) are currently in use. The samples generally analyzed by this package are non-radioactive, non-mineralized sandstones and basement rocks with low concentrations of uranium (<100 ppm).

11.3.2.2 Partial Digestion

An aliquot of pulp is digested in a mixture of ultra-pure concentrated nitric and hydrochloric acids (HNO3:HCl) in a digestion tube in a hot water bath then diluted to 15 mL using de-ionized water prior to analysis. As, Ge, Hg, Sb, Se and Te are subject to partial digestion only, as these elements are not suited to total digestion analysis. The ICP-MS instruments used are PerkinElmer Elan DRC II.

11.3.2.3 Total Digestion

An aliquot of pulp is digested to dryness in a hot block digestor system using a mixture of ultra-pure concentrated acids HF:HNO3:HClO4. The residue is dissolved in 15 mL of 5% HNO3 and made to volume using de-ionized water prior to analysis.

11.3.3 Method: U_3O_8 wt% Assay (ICP-OES)

(The determination of U_3O_8 wt% in solid samples by ICP-OES)

11.3.3.1 Method Summary

When ICP1 U partial values are ≥1,000 ppm, sample pulps are re-assayed for U_3O_8 using SRC's ISO/IEC 17025:2005-accredited U_3O_8 (wt%) method. In the case of uranium assay by ICP-OES, a pulp is already generated from the first phase of preparation and assaying (discussed above).

11.3.3.2 Aqua Regia Digestion

An aliquot of sample pulp is digested in a 100 mL volumetric flask in a mixture of 3:1 HCl:HNO3, on a hot plate for approximately one hour, then diluted to volume using de-ionized water. Samples are diluted prior to analysis by ICP-OES.

11.3.3.3 Instrument Analysis

Instruments in the analysis are calibrated using certified commercial solutions. The instruments used were PerkinElmer Optima 300DV, Optima 4300DV, or Optima 5300DV.

Detection Limits: 0.001% U_3O_8

11.3.4 Method: U_3O_8 wt% Assay (DNC)

(The determination of U_3O_8 wt% in solid samples by delayed neutron counting)

SRC in 2009 documented the method summary for the Delayed Neutron Counting ("DNC") technique as follows.

Samples previously prepared as pulps for ICP total digestion are used for the DNC analysis. The pulps are irradiated in a Slowpoke 2 nuclear reactor for a given period of time. After irradiation, the samples are pneumatically transferred to a counting system equipped with six helium-3 detectors. After a suitable delay period, neutrons emanating from the sample are counted. The proportion of delayed neutrons emitted is related to the uranium concentration. For low concentrations of uranium, a minimum of one gram of sample is preferred, and larger sample sizes (two to five grams) will improve precision. Several blanks and certified uranium standards are analyzed to establish the instrument calibration. In addition, control samples are analyzed with each batch of samples to monitor the stability of the calibration. At least one in every ten samples is analyzed in duplicate. The results of the instrument calibration, blanks, control samples, and duplicates must be within specified limits otherwise corrective action is required.

Analysis for uranium by DNC incorporates four separate flux/site conditions of varying sensitivity to produce an effective range of analysis from zero to 150,000 µg U per capsule (samples of up to 90% U can be analyzed by weighing a fraction of a gram to ensure that there is no more than 150,000 µg U in the capsule). Each condition is calibrated using between three and seven reference materials. For each condition, one of these materials is designated as a calibration check sample. As well, there is an independent control sample for each condition.

11.3.5 Drill Core Bulk Density Analysis

Drill core samples collected for bulk density measurements were sent to SRC. Samples were first weighed as received and then submerged in de-ionized water and re-weighed. The samples were then dried until a constant weight was obtained. The sample was then coated with an impermeable layer of wax and weighed again while submersed in de-ionized water. Weights were entered into a database and the bulk density of each sample was calculated. Water temperature at the time of weighing was also recorded and used in the bulk density calculation.

11.3.6 Reflectance Clay Analyses

11.3.6.1 J Zone

Core chip samples for clay analysis were sent to Northwind, a private facility in Saskatoon, for analysis on a PIMA spectrometer using short wave infrared spectroscopy. Samples are air or oven dried prior to analysis in order to remove any excess moisture. Reflective spectra for the various clay minerals present in the sample are compared to the spectral results from Athabasca samples for which the clay mineral proportions have been determined in order to obtain a semi-quantitative clay estimate for each sample.

11.3.6.2 Huskie

Core chip samples for clay reflectance analysis are analyzed using an ArcSpectro FT-NIR (Fourier transform near-infrared) ROCKET spectrometer. This included all analyses performed on samples from the Huskie deposit. Samples were air or oven dried prior to analysis in order to remove any excess moisture. The transmission spectra of the reflectance samples were sent to AusSpec, based in New Zealand. The spectra are interpreted using an aiSIRIS automated spectral interpretation system. The mineral assemblage for each sample is listed in order of spectral dominance and represents the spectral contribution of the mineral to the spectrum.

11.4 Quality Assurance and Quality Control

Quality assurance/quality control (“QA/QC”) programs provide confidence in the geochemical results and help ensure that the database is reliable to estimate mineral resources. Denison has developed and documented several QA/QC procedures and protocols for all exploration projects which include the following components:

- Determination of precision – achieved by regular insertion of duplicates for each stage of the process where a sample is taken or split

- Determination of accuracy – achieved by regular insertion of standards or materials of known composition
- Checks for contamination – achieved by insertion of blanks
- In the opinion of the relevant Qualified Persons, Denison's procedures and protocols are considered to be reasonable and acceptable.

11.4.1 Sample Standards and Field Duplicates

Analytical standards are routinely used to monitor analytical precision and accuracy, and field standards are used as an independent monitor of laboratory performance. The internal QA/QC sampling program used for the J Zone and Huskie drilling is detailed below.

11.4.1.1 Assay Sample Standards

Fission developed three assay standards for the J Zone drilling: Low grade (LG), medium grade (MG) and high grade (HG). The samples were each developed from samples previously assayed for % U_3O_8 by SRC with assay values of 0.049-0.052 % U_3O_8, 1.80-2.17 % U_3O_8 and 14.2-30.3 % U_3O_8, respectively. Each sample was prepared by SRC by combining 300 g of the coarse-rejects fraction of 10 basement samples falling within the required grade range into a 3 kg composite sample. Each of the three composite samples (i.e. LG, MG and HG) were blended, ground, dried and sieved at 106 microns. Sample homogeneity was tested by U_3O_8 assays on 7 subsamples and the relative standard deviations were < 1.0 %.

Table 11-1: Certified assay values of U_3O_8 for the LG, MG and HG reference samples used for the J Zone drilling.

Sample name	Element	Certified Mean (Expected Value)	Two Standard Deviations
WAT-LG	U_3O_8	540 ppm	28 ppm
WAT-MG	U_3O_8	2.05%	0.09%
WAT-HG	U_3O_8	20.96%	0.87%

Figure 11-1, Figure 11-2 and Figure 11-3 show the results of the low (32 samples), medium (16 samples) and high grade (16 samples) certified reference material used in 2013 J Zone drilling. The analysis of the reference samples returned U_3O_8 values within the acceptable limits and no significant accuracy issues were noted (Armitage & Sexton, 2013).

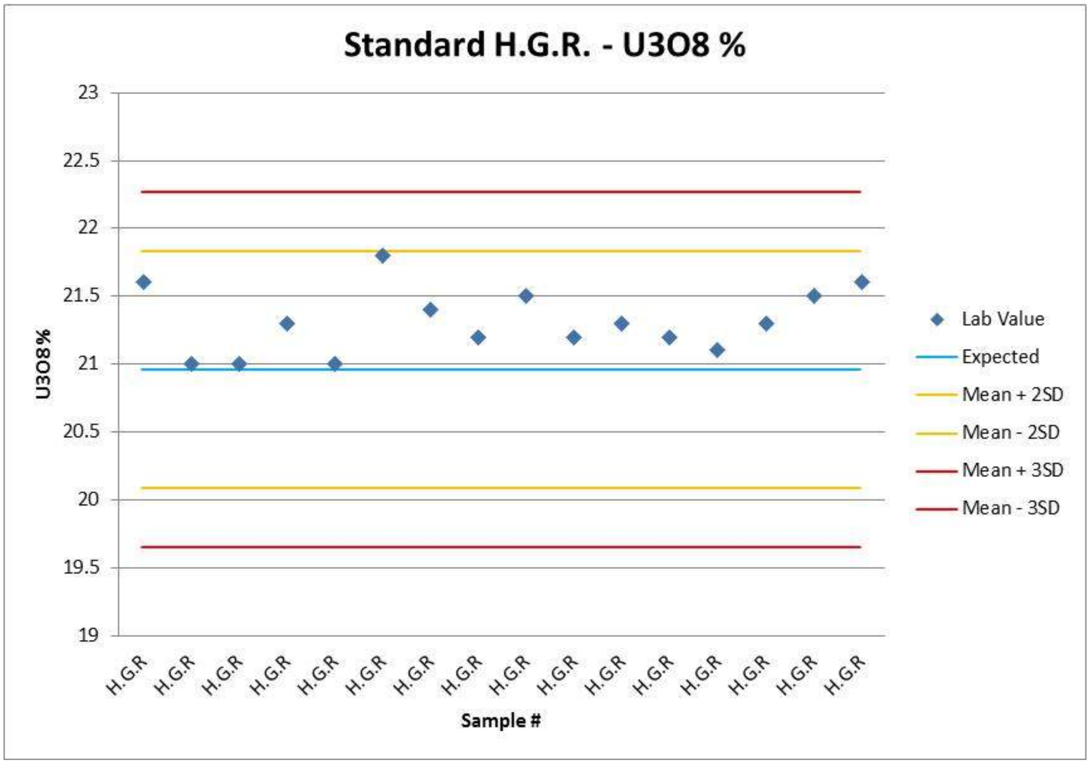


Figure 11-1: Results for analyses of 2013 certified high grade reference samples, J Zone.

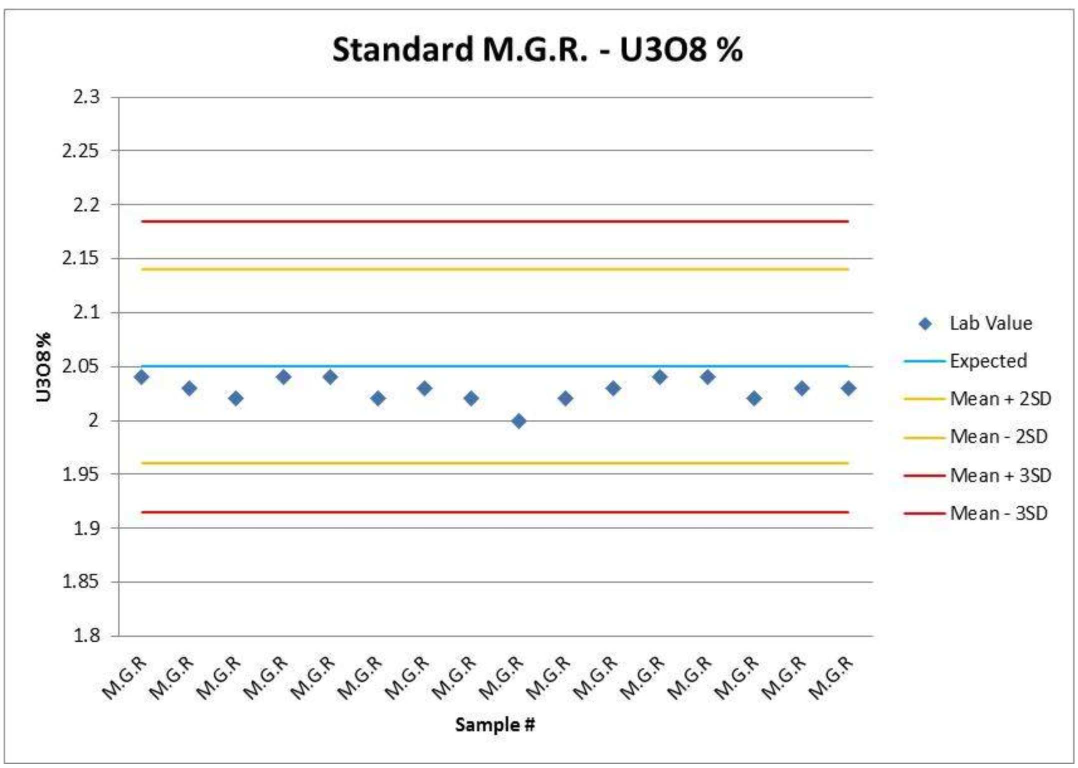


Figure 11-2: Results for analyses of 2013 certified medium grade reference samples, J Zone.

Figure 11-3: Results for analyses of 2013 certified low grade reference samples, J Zone.

Denison uses external assay standards prepared in-house by Cameco using uranium ores from Cameco's Blind River Refinery in Ontario and the Cree Extension-Millennium project in northern Saskatchewan. Due to the radioactive nature of the standard material, insertion of the standard materials is performed at SRC instead of in the field. For the Huskie deposit, the external assay standards used included USTD1, USTD2, USTD3, USTD4 and USTD6. For uranium assays SRC personnel, using the standards appropriate for each batch, added these standards to the sample groups.

Plots for the USTD-series standards are shown in Figures 11-4 to 11-8. Note that the method used to calculate the upper limit ("UL") and lower limit ("LL") for the USTD-series standards were revised from "mean plus or minus 5%" to "mean plus or minus three standard deviations". The values for the USTD-series standards were also updated in 2017, based on additional statistical data obtained by SRC since 2011.

The analysis of the reference samples returned U_3O_8 values within the acceptable limits and no significant accuracy issues were noted.

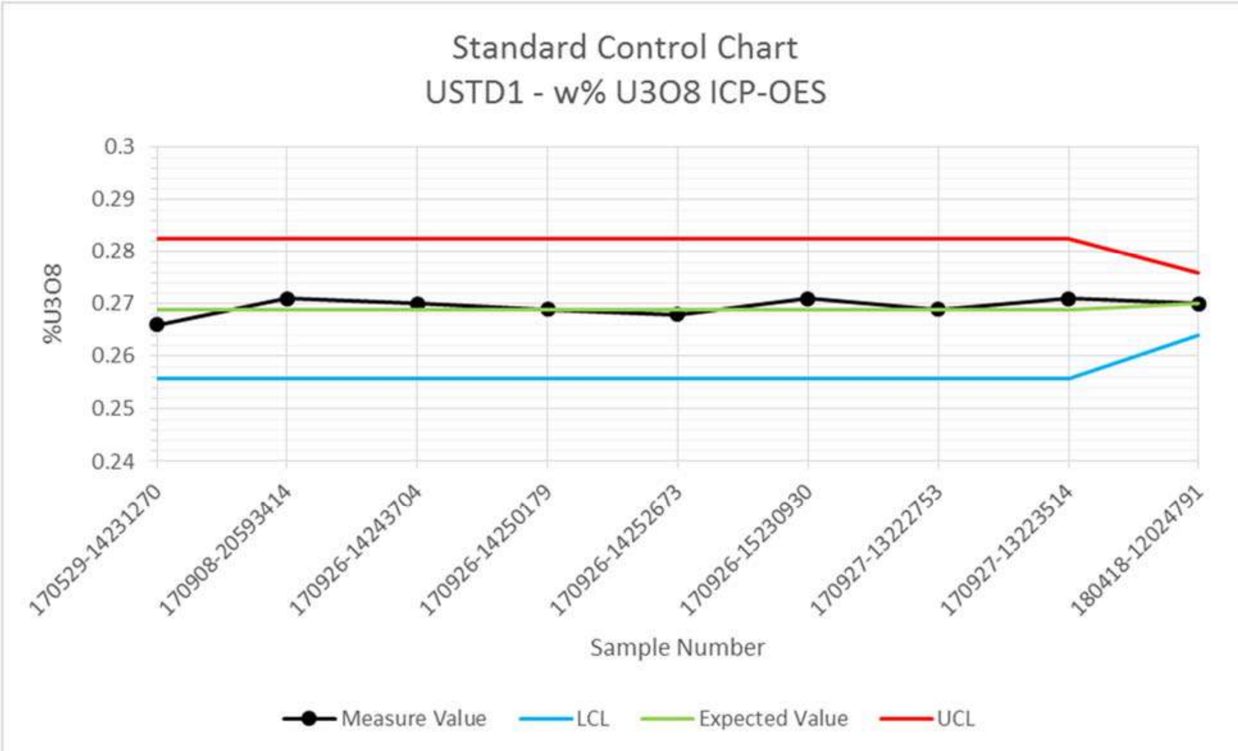


Figure 11-4: Analytical Results for Control Sample USTD1 for Huskie Assays.

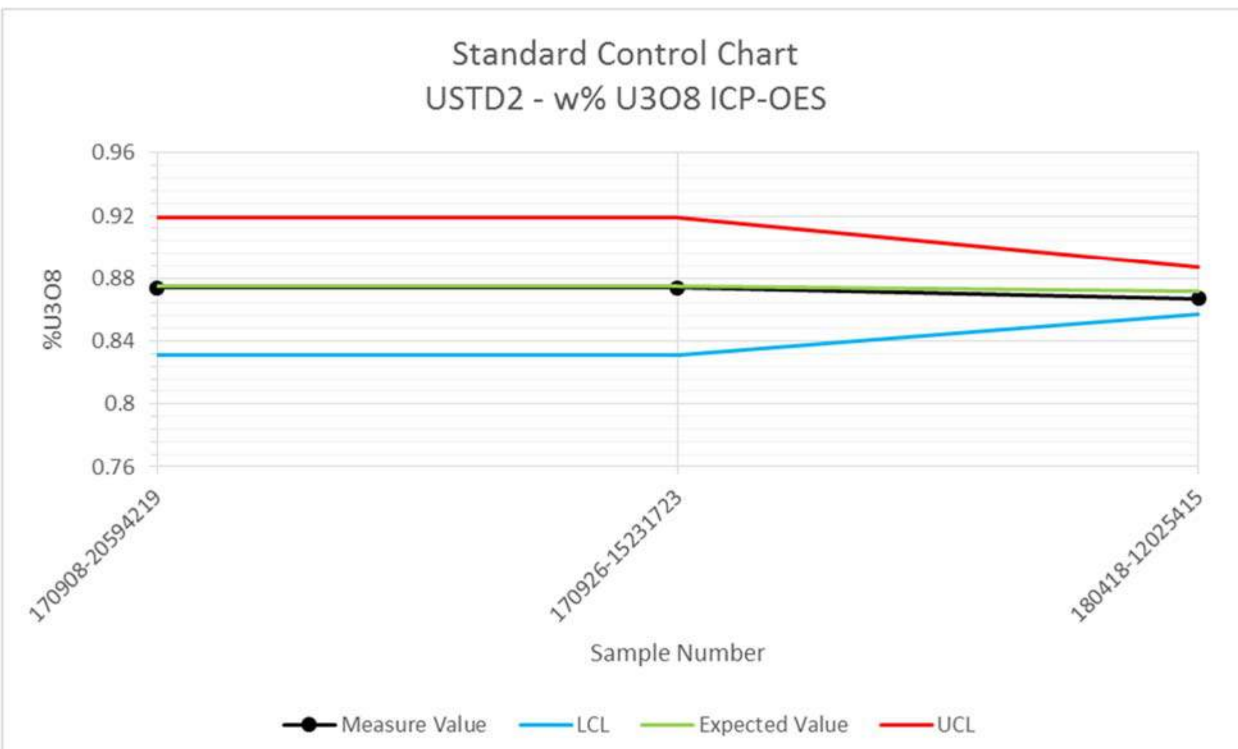


Figure 11-5: Analytical Results for Control Sample USTD2 for All Huskie Assays.

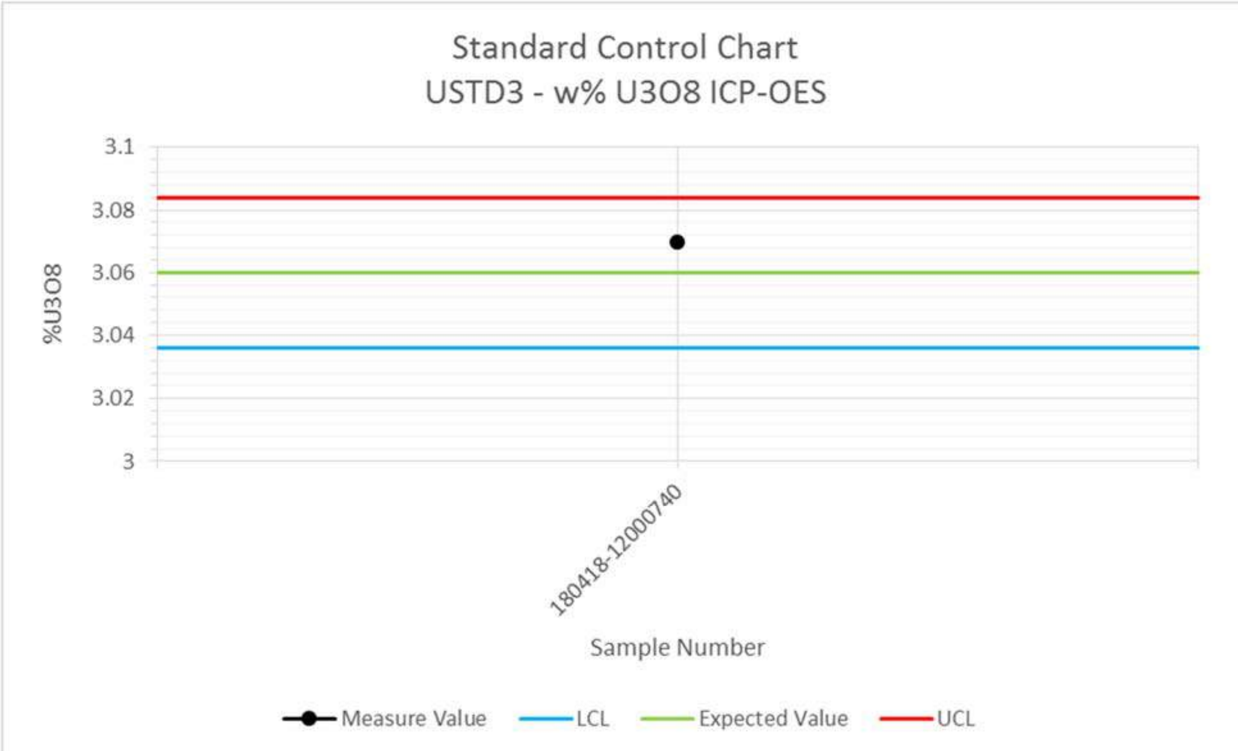


Figure 11-6: Analytical Results for Control Sample USTD3 for Huskie Assays.

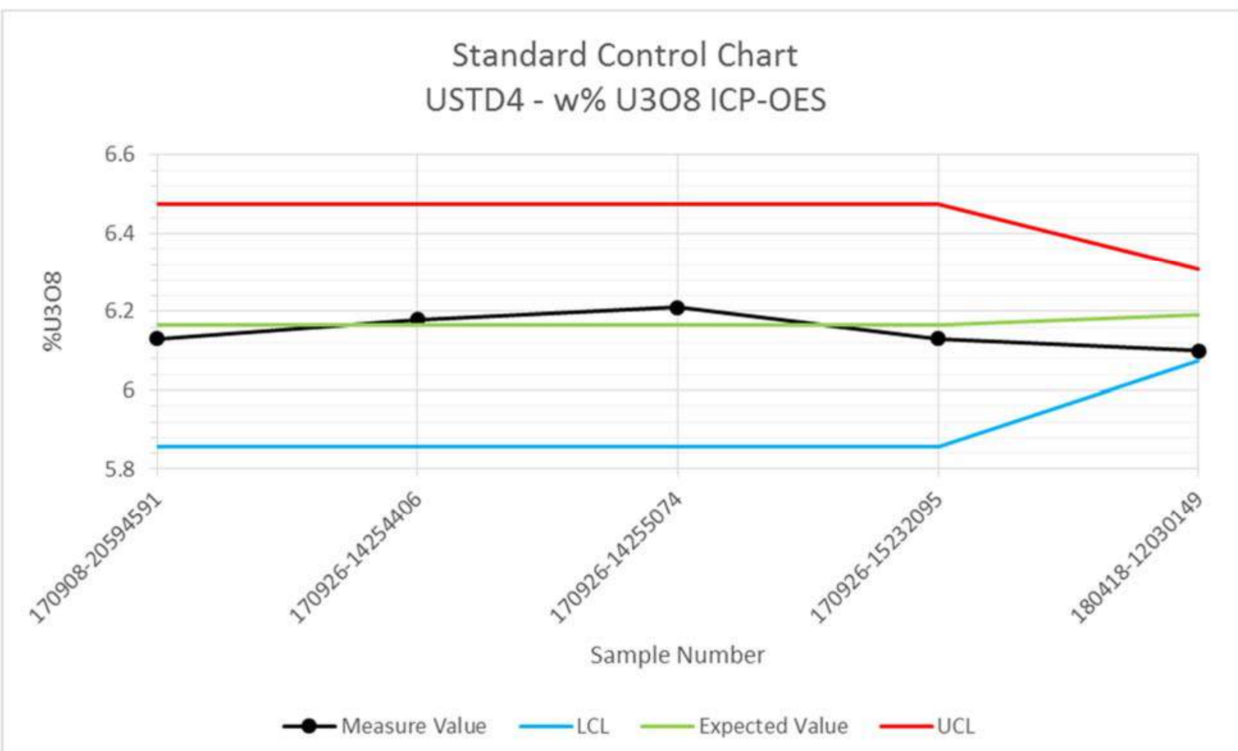


Figure 11-7: Analytical Results for Control Sample USTD4 for All Huskie Assays.

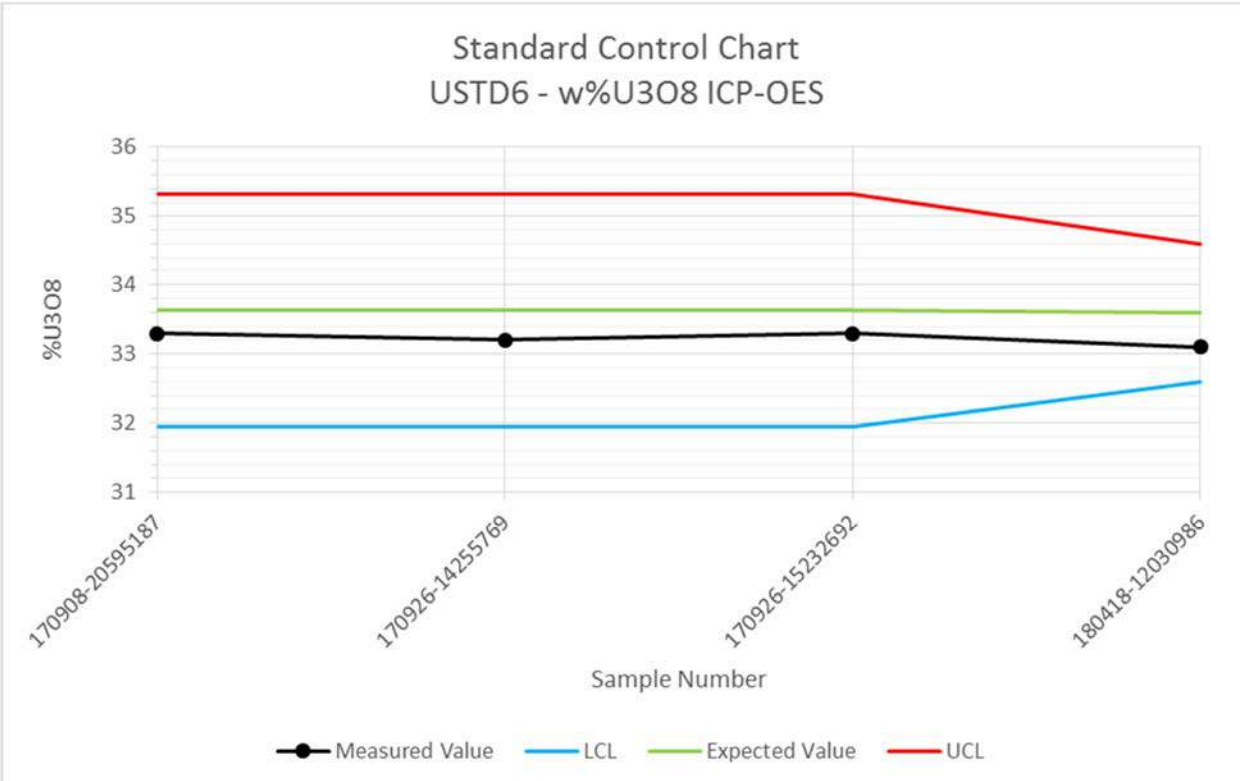


Figure 11-8: Analytical Results for Control Sample USTD6 for Huskie.

11.4.1.2 Field Assay Duplicates

Analyses of duplicate samples are an essential component of quality control. Duplicates are used to evaluate the field precision of analyses received, and are typically controlled by rock heterogeneity and sampling practices. Core duplicates are prepared by collecting a second sample of the same interval, through splitting the original sample, or other similar technique, and are submitted as an independent sample to ensure they are blind to the sample preparation laboratory. Duplicates are typically submitted at a minimum rate of one per 25 samples in order to obtain a collection rate of 4%. The collection may be further tailored to reflect field variation in specific rock types or horizons.

Figure 11-9 shows the results of analyses of field core duplicates plotted against original analyses for the J Zone. A 1:1 reference line is shown in red for J Zone (Sexton & Armitage, 2013).

Figure 11-10 shows results of analyses of field core duplicates plotted against original analysis for Huskie.

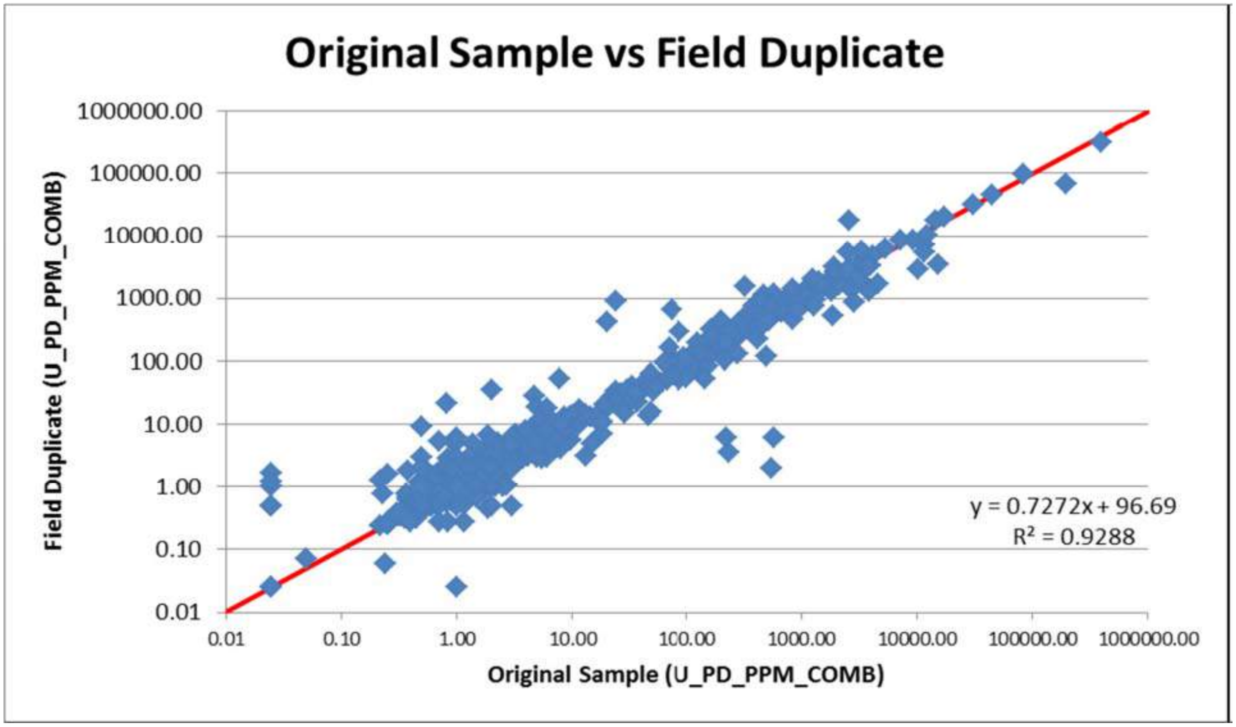


Figure 11-9: Results for original samples versus their field duplicate plotted on a log scale base 10.

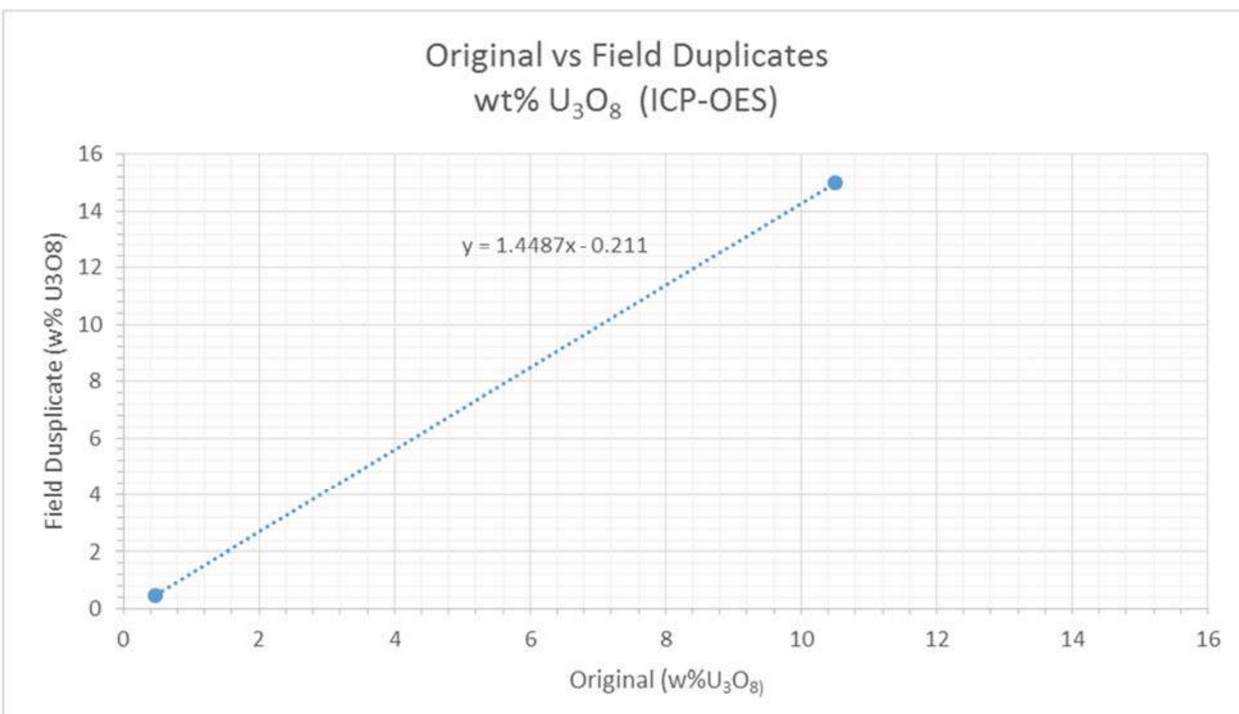


Figure 11-10: Analytical Results for Field Duplicate Samples for Huskie.

11.4.1.3 Blanks

For the 2013 J Zone drilling, Fission used twenty pulps from the winter 2010 drill program as blanks. These samples were selected to satisfy the criteria of having "U; ICP ICP1 Total" < 2 ppm and "U; Fl. ICP1 Partial" < 1 ppm. One blank pulp was inserted for each drill hole that intersected mineralization and from which samples were sent for U_3O_8 assay. The blanks were re-packaged, assigned a new sample number and inserted in sequence within the mineralized interval. The entire blank pulp sample was submitted for analysis. Blank samples were analysed by ICP-OES (ICP1 package) and assayed for U_3O_8 % and Au by fire assay. Blank samples were not inserted with samples from non-mineralized holes.

Results for the 17 field blanks used during the 2013 drill program were found to be acceptable (Figure 11-11). A blank failure is defined as any assay value greater than two times the elements detection limit.

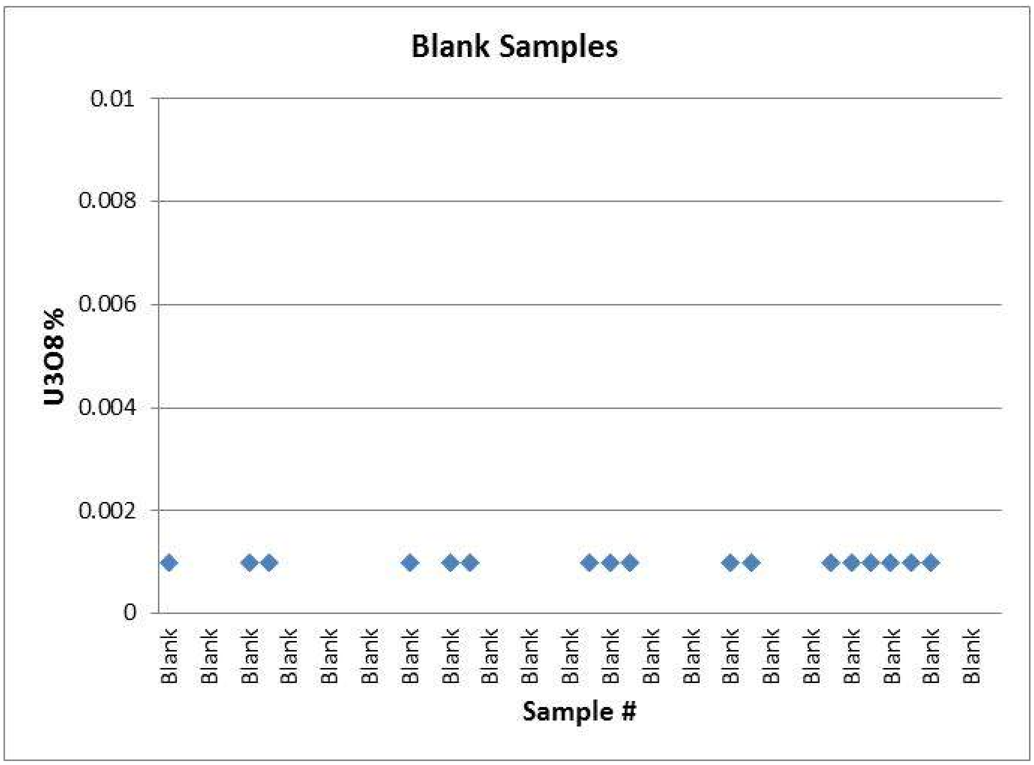


Figure 11-11: Results of the 2013 blank reference samples for U_3O_8, J Zone.

Denison did not use field blanks for the 2017 and 2018 drilling programs at Huskie. Instead, it relied on SRC's internal QA/QC sampling program to check for contamination by insertion of "blanks" at the lab.

11.4.2 Laboratory Internal Quality Assurance and Quality Control

The SRC laboratory has a quality assurance program dedicated to active evaluation and continual improvement in the internal quality management system. The laboratory is accredited by the Standards Council of Canada as an ISO/IEC 17025 Laboratory for Mineral Analysis Testing and is also accredited ISO/IEC 17025:2005 for the analysis of U_3O_8. The laboratory is licensed by the Canadian Nuclear Safety Commission ("CNSC") for possession, transfer, import, export, use, and storage of designated nuclear substances by CNSC Licence Number 01784-1-09.3. As such, the laboratory is closely monitored and inspected by the CNSC for compliance.

All analyses are conducted by SRC, which has specialized in the field of uranium research and analysis for over 30 years. SRC is an independent laboratory, and no associate, employee, officer, or director of Denison is, or ever has been, involved in any aspect of sample preparation or analysis on samples from the Gryphon or Phoenix deposits.

The SRC uses a laboratory management system ("LMS") for quality assurance. The LMS operates in accordance with ISO/IEC 17025:2005 (CAN-P-4E) "*General Requirements for the Competence of Mineral Testing and Calibration Laboratories*" and is also compliant to CAN-P-1579 "*Guidelines for Mineral Analysis Testing Laboratories*". The laboratory continues to participate in proficiency testing programs organized by CANMET (CCRMP/PTP-MAL).

Quality control samples (reference materials, blanks, and duplicates) are included with each analytical run, based on the rack sizes associated with the method. The rack size is the number of samples (including QC samples) within a batch. Blanks are inserted at the beginning, standards are inserted at random positions, and duplicates are analyzed at the end of the batch. Quality control samples are inserted based on the analytical rack size specific to the method (Table 11-2).

Table 11-2: Quality Control Sample Allocations

Rack Size	Methods	Quality Control Sample Allocation
20	Specialty methods including specific gravity, bulk density, and acid insolubility	2 standards, 1 duplicate, 1 blank
28	Specialty fire assay, assay-grade, umpire and concentrate methods	1 standard, 1 duplicate, 1 blank
40	Regular AAS, ICP-AES and ICP-MS methods	2 standards, 1 duplicate, 1 blank
84	Regular fire assay methods	2 standards, 3 duplicates, 1 blank

All instruments are calibrated using certified materials. Quality control samples were prepared and analyzed with each batch of samples. Within each batch of 40 samples, one to two quality control samples were inserted.

Results for the BL2A, BL3, BL4a and BL5 standards used for the J Zone drilling are illustrated in Figures 11-12 to 11-15.

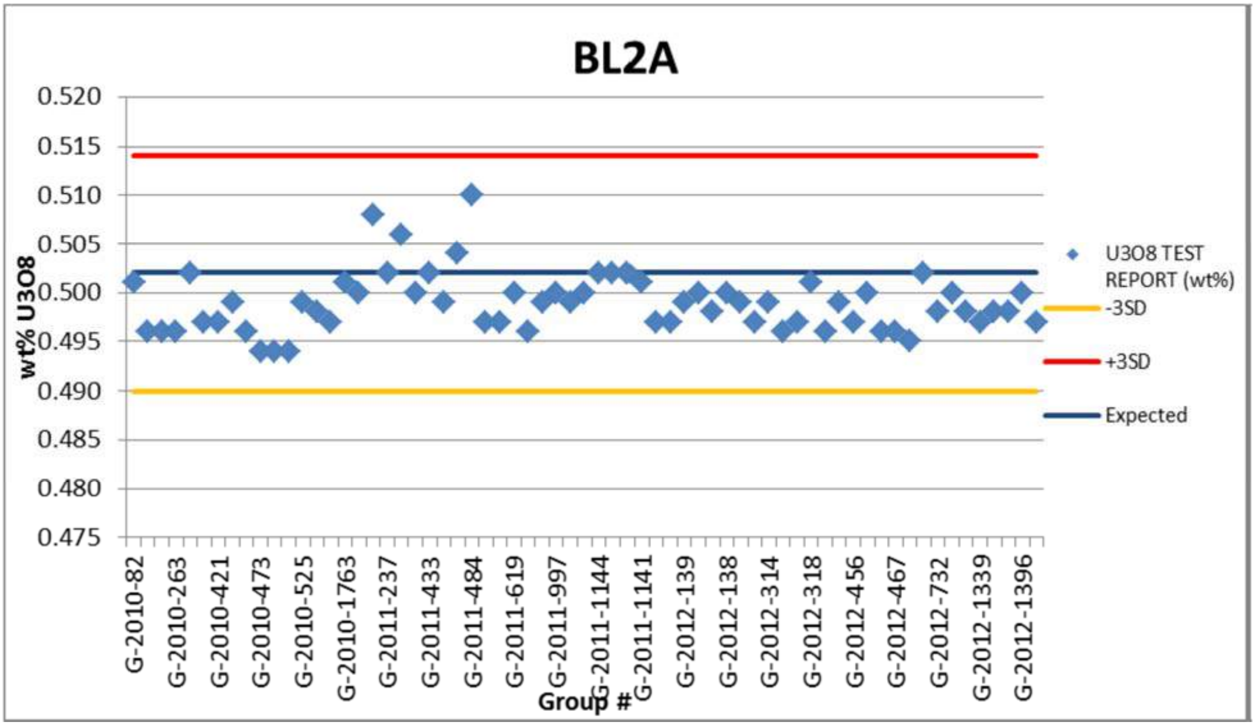


Figure 11-12: Results of the BL2A reference samples, J Zone.

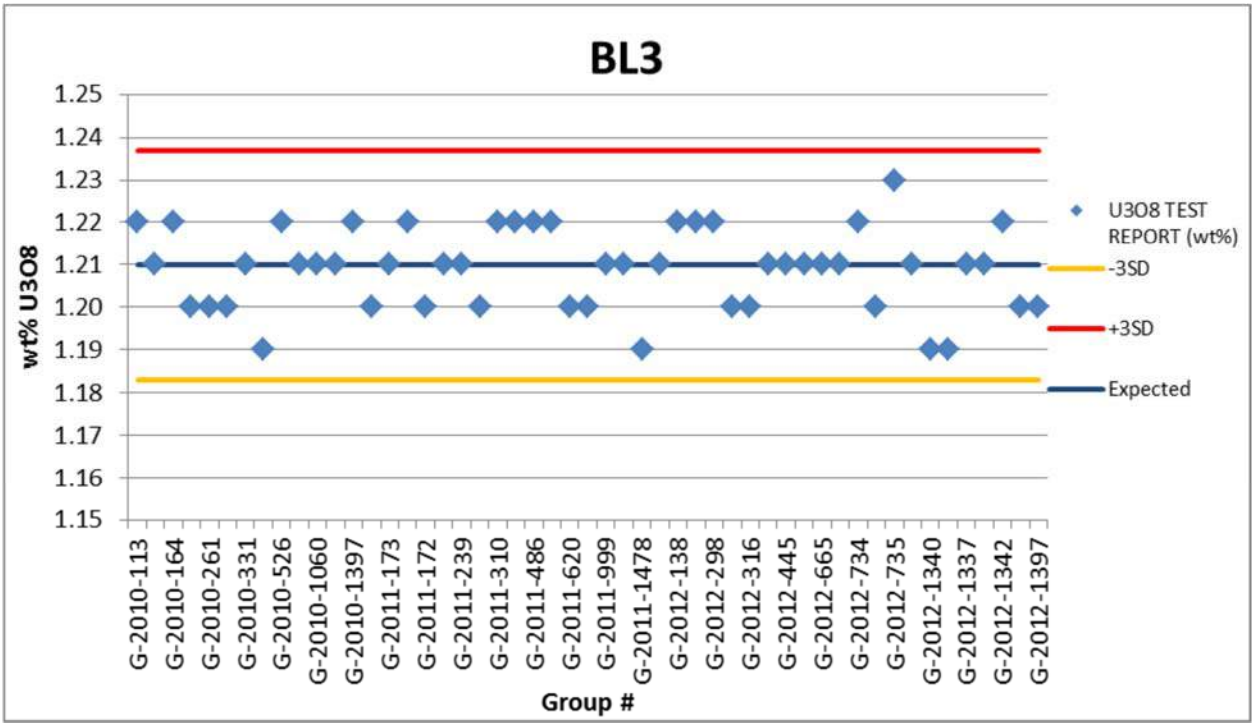


Figure 11-13: Results of the BL3 reference samples, J Zone.

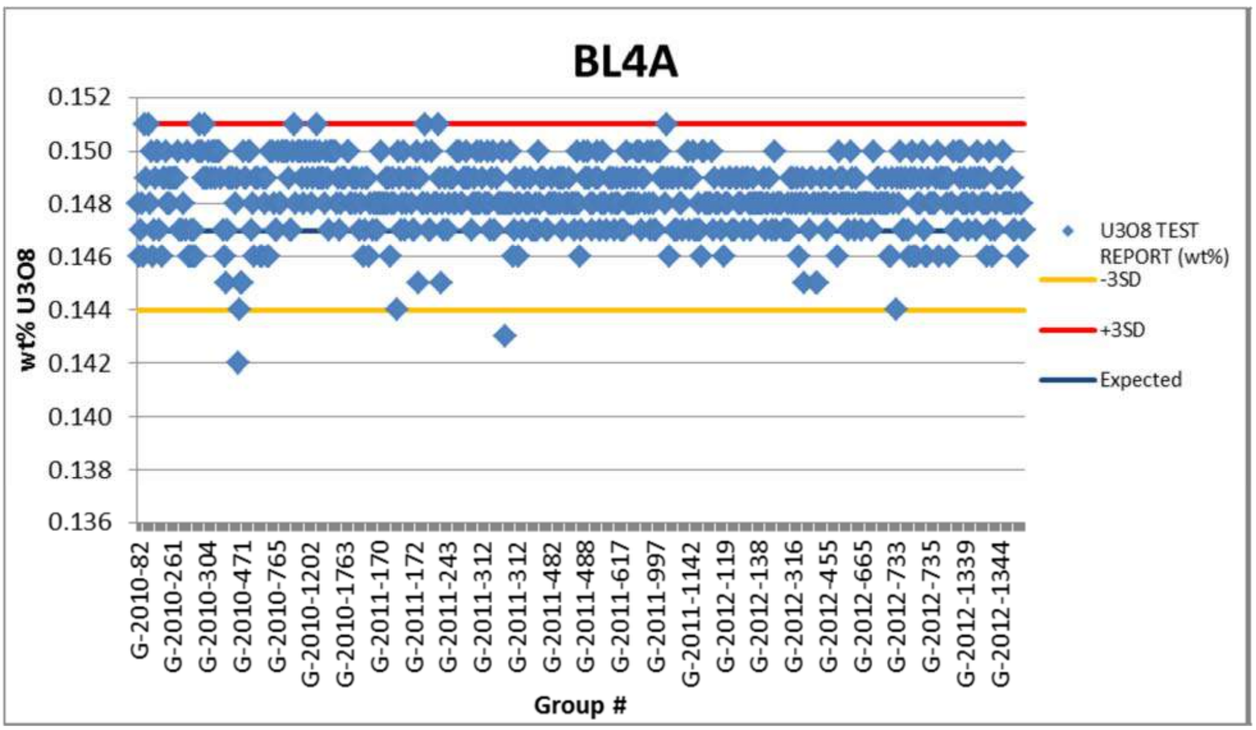


Figure 11-14: Results of the BL4A reference samples, J Zone.

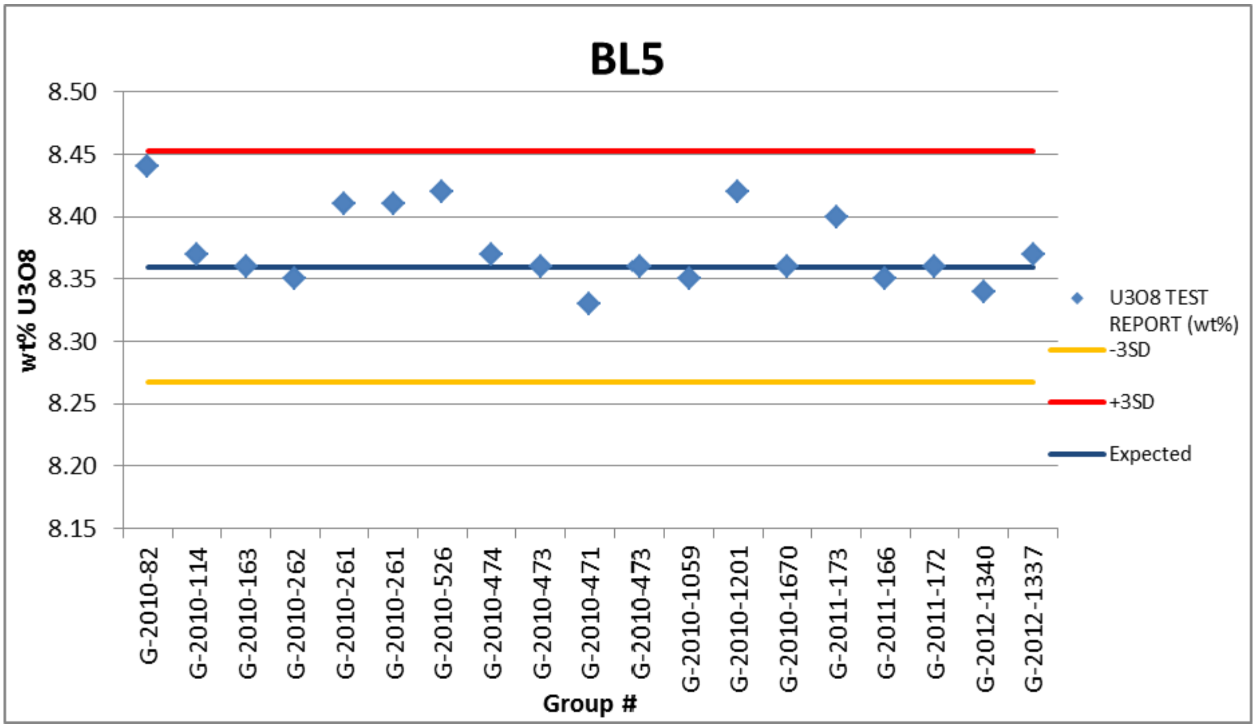


Figure 11-15: Results of the BL5 reference samples, J Zone.

For the Huskie drilling, SRC used three U_3O_8 reference standards: BL4a, BL5 and SRCUO2, which have concentrations of 0.147% U_3O_8, 8.36% U_3O_8, and 1.58 % U_3O_8, respectively. BL4a and BL5 are both prepared by CANMET and SRCUO2 is prepared in-house by SRC. A duplicate is performed at the end of each batch of samples. As well, a blank sample is inserted into each batch of samples to monitor the potential for contamination during sampling, processing, and analysis. Figure 11-16 to Figure 11-19 show results of analyses of the BL4a, BL5 and SRCUO2 standards, as well as the blank samples for the Huskie drilling.

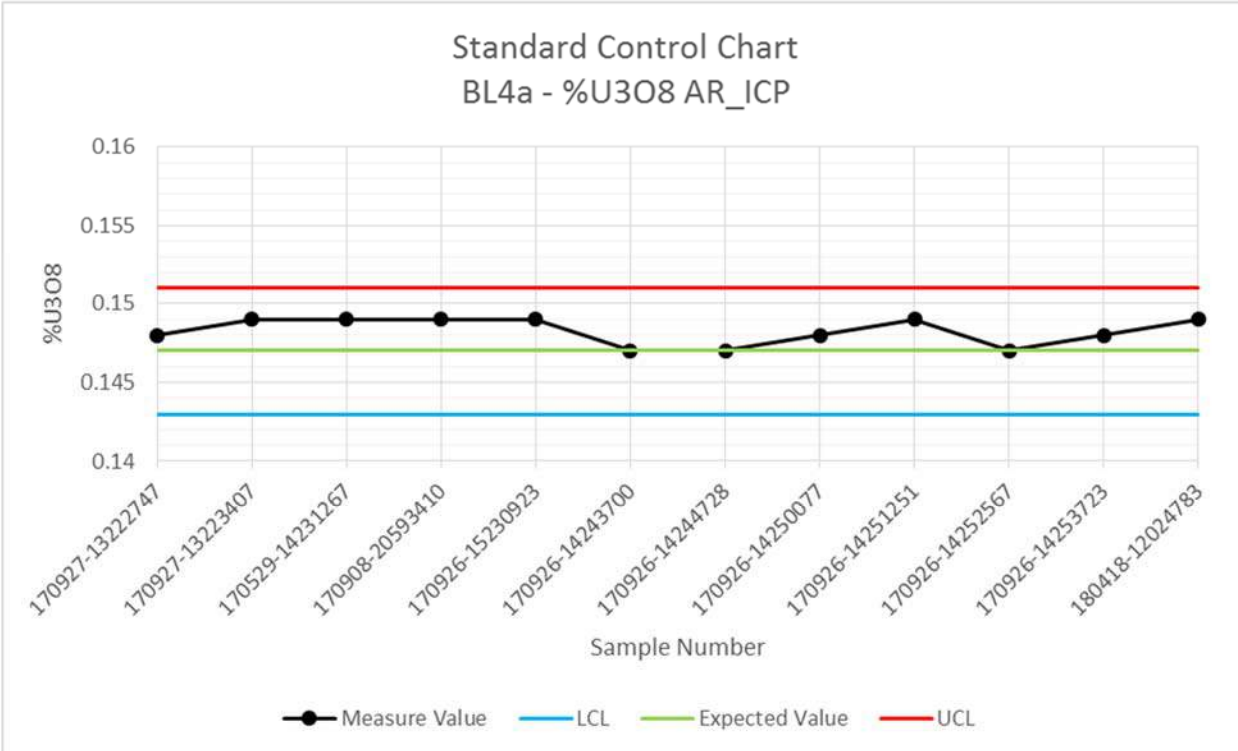


Figure 11-16: Analytical Results for Control Sample BL4a for Huskie.

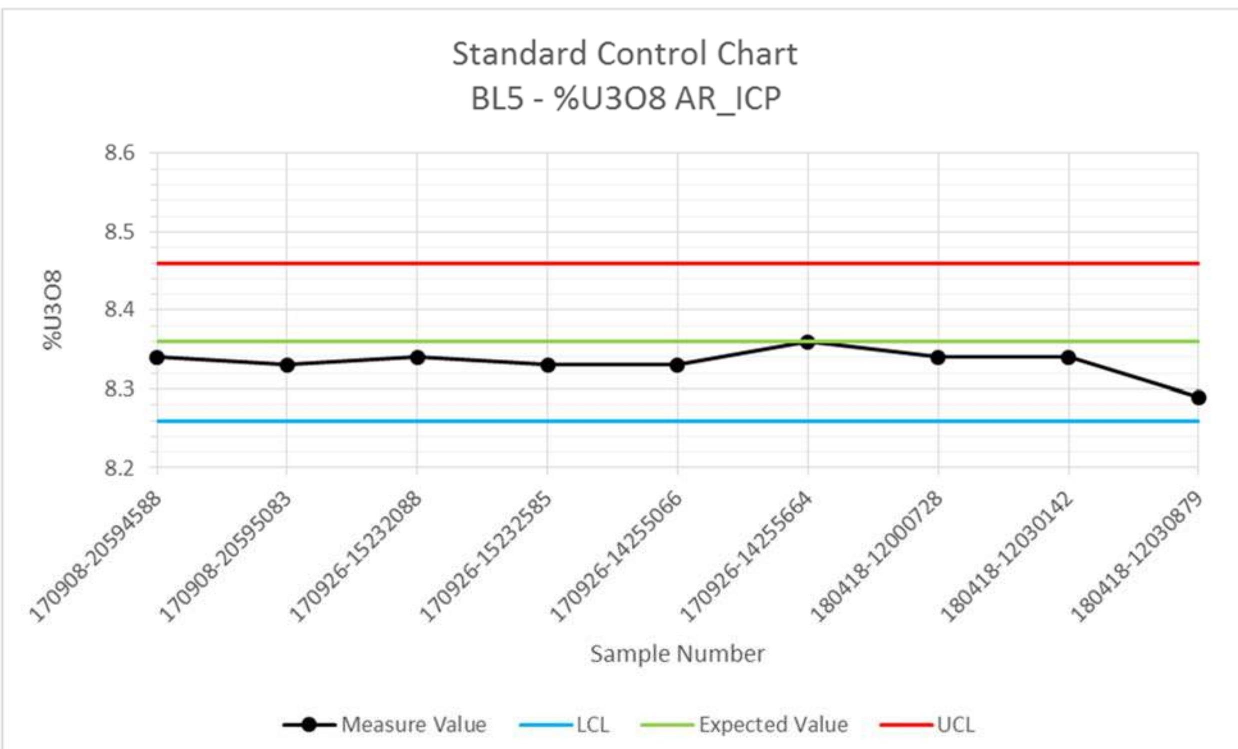


Figure 11-17: Analytical Results for Control Sample BL5 for Huskie.

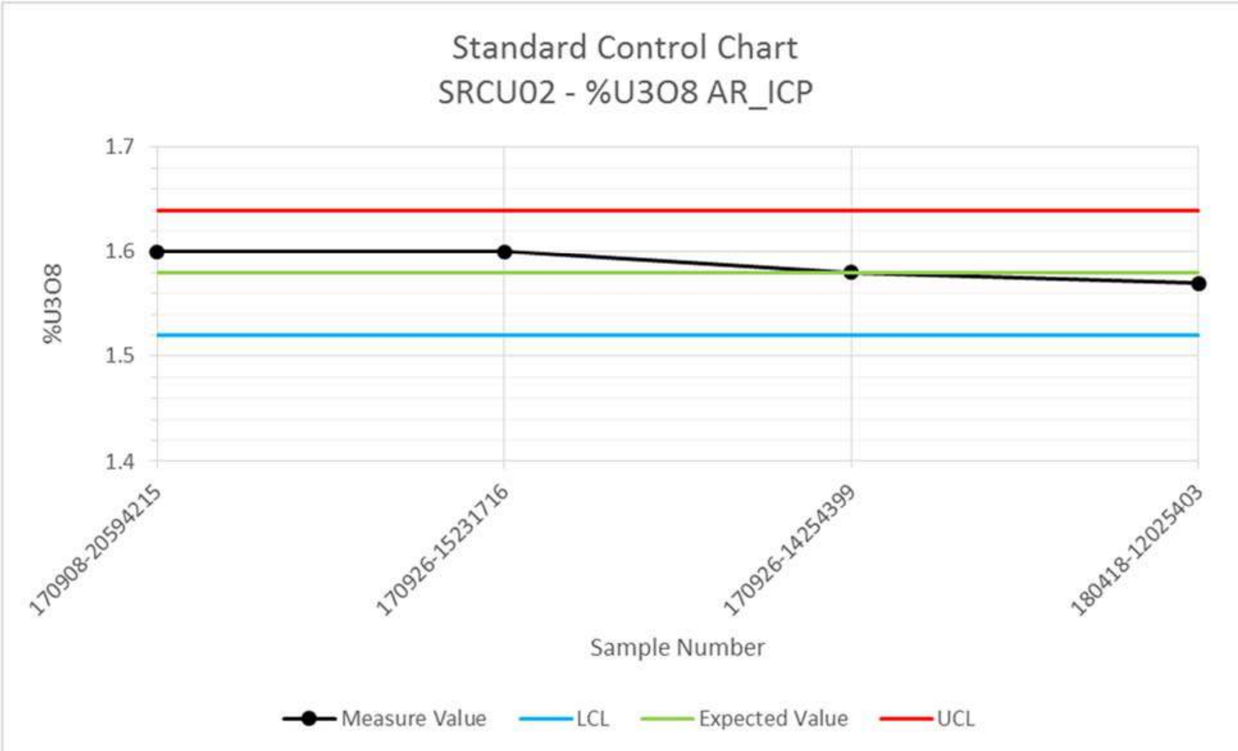


Figure 11-18: Analytical Results for Control Sample SRCU02 for Huskie.

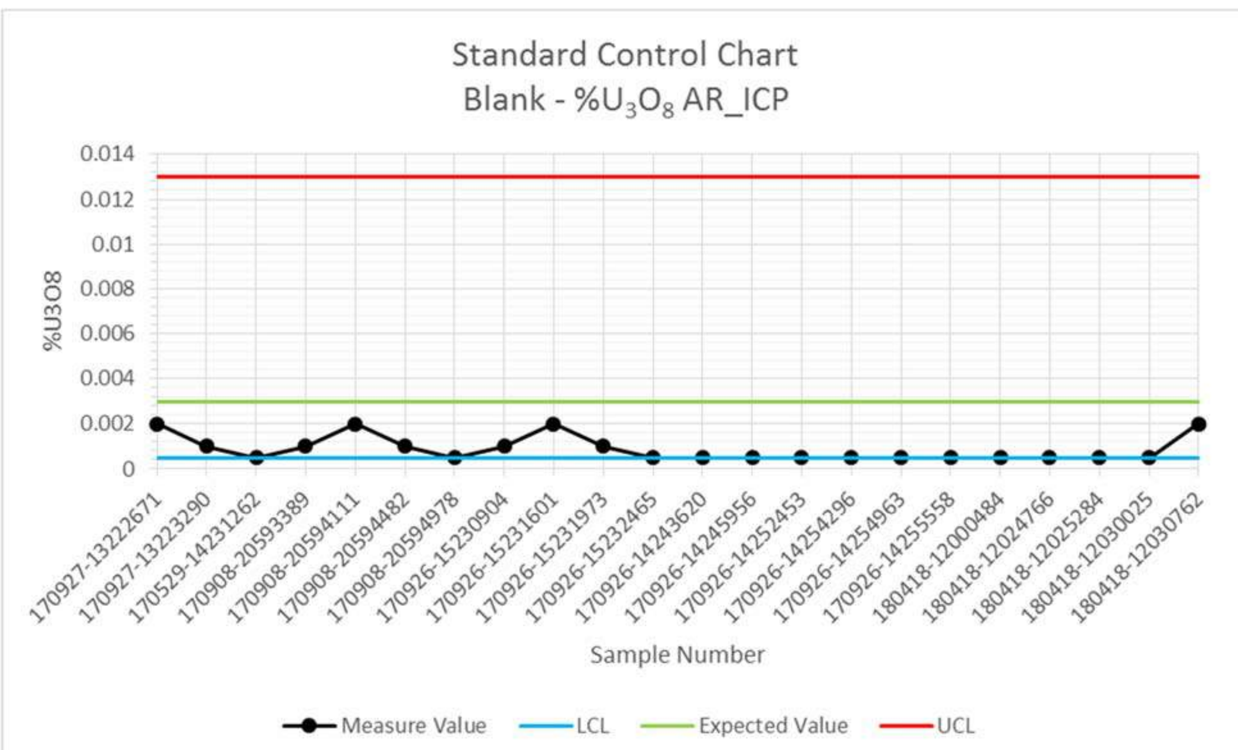


Figure 11-19: Analytical Results for Blank Control Sample for Huskie.

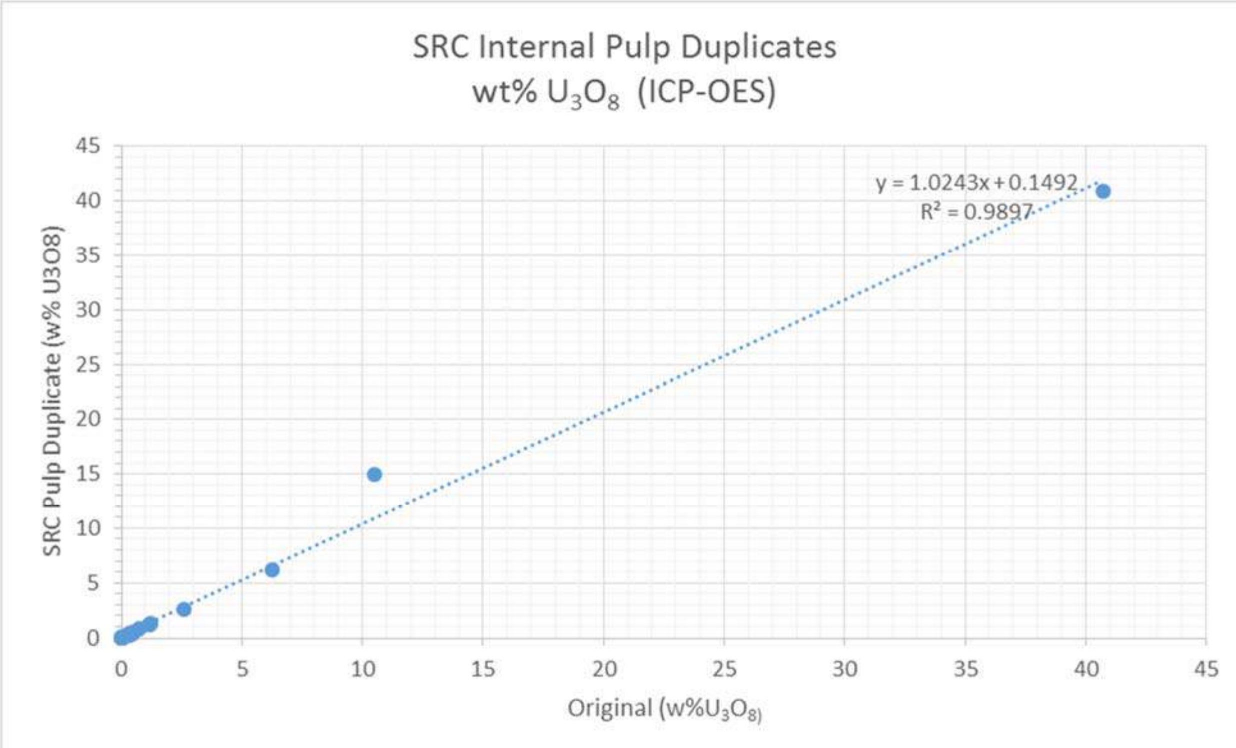


Figure 11-20: Analytical Results for the Pulp Duplicates Versus the Original Assay Samples for Huskie.

Before the results leave the laboratory, the standards, blanks, and split replicates are checked for accuracy, and issued provided the senior scientist is fully satisfied. If for any reason there is a failure in an analysis, the sub-group affected will be re-analyzed, and checked again. A corrective action report will be issued and the problem is investigated fully to ensure that any measures to prevent the re-occurrence can and will be taken. All human and analytical errors are, where possible, eliminated. If the laboratory suspects any bias, the samples are re-analyzed and corrective measures are taken.

11.4.3 External Laboratory Check Analysis

In addition to the QA/QC described above, for the Huskie drilling, Denison sent one in every 25 to a separate facility located at SRC Analytical Laboratories in Saskatoon. These samples were analyzed using Delayed Neutron Counting ("DNC") for uranium analysis to compare the uranium values using two different methods, by two separate laboratories.

The DNC method is specific for uranium and no other elements are analyzed by this technique. The DNC system detects neutrons emitted by the fission of U-235 in the sample, and the instrument response is compared to the response from known reference materials to determine the concentration of uranium in the sample.

In order for the analysis to work, the uranium must be in its natural isotopic ratio. Enriched or depleted, uranium cannot be analyzed accurately by DNC.

For the Huskie deposit, seven assay pairs were analyzed using both ICP-OES total digestion and the DNC assay technique. As it can be seen in Figure 11-21, the results obtained from the DNC laboratory compare well with those obtained from the SRC Geoanalytical laboratory. It can be seen that correlation is excellent. Uranium grades obtained with the DNC technique were used only as check assays and were not directly used for mineral resource estimation.

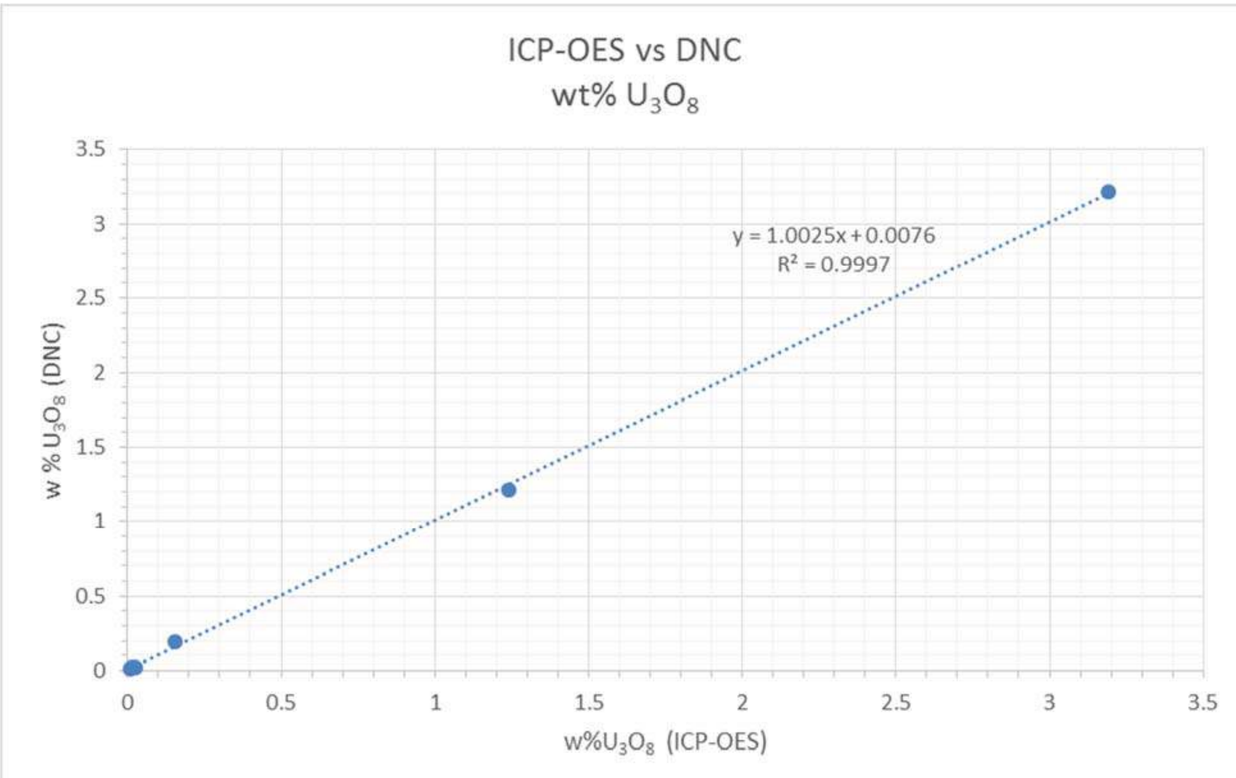


Figure 11-21 Analytical Results DNC Versus ICP-OES Assay Values for Huskie.

11.4.4 Laboratory Security and Confidentiality

SRC considers customer confidentially and security to be of utmost importance and takes appropriate steps to protect the integrity of sample processing at all stages from sample storage and handling to transmission of results. All electronic information is password protected and backed up on a daily basis. Electronic results are transmitted with additional security features. Access to SRC's premises is restricted by an electronic security system. The facilities at the main laboratory are regularly patrolled by security guards 24 hours a day.

After the analyses are completed, analytical data are securely sent using electronic transmission of the results. The electronic results are secured using WINZIP encryption and password protection. These results are provided as a series of Adobe PDF files containing the official analytical results and a Microsoft Excel file containing only the analytical results.

11.4.5 The Qualified Persons Opinion on the QA/QC Procedures

In the opinion of the relevant Qualified Persons, sample preparation, security, and analytical procedures meet industry standards, and the QA/QC programs as designed and implemented by Fission and Denison for the J Zone and Huskie are adequate; consequently, the assay results within the drill hole database are suitable for use in a mineral resource estimate.

12 DATA VERIFICATION

12.1 J Zone

The following description of the data verification completed by Fission between 2010 and 2013 on the J Zone was extracted from the 2012 Technical Report for Fission titled "*Technical Report on the Waterbury Lake Uranium Project Including Resource Estimate on the J Zone Uranium Deposit, Waterbury Lake Property, Athabasca Basin, Northern Saskatchewan*", dated February 29th, 2012 and revised on May 29th, 2012 by Armitage and Nowicki, which is filed on SEDAR under Fission's profile.

The 2013 resource for the J Zone was defined by 12,551 assay samples collected from 268 drill holes totaling 88,770m completed by Fission between January, 2010 and April, 2013. All geological data was reviewed and verified by the relevant Qualified Persons as being accurate to the extent possible.

To complete the updated resource estimate on the J Zone, GeoVector assessed the raw drill core database that was available from the drill program completed between January and March, 2013 on the Property. GeoVector was provided with an updated drill hole database which included collar locations, down hole survey data, assay data, lithology data, down hole radioactive data, core recovery data and specific gravity ("SG") data.

The database was checked for typographical errors in assay values and supporting information on source of assay values was completed. Sample overlaps and gapping in intervals were also checked. Verifications were also carried out on drill hole locations, down hole surveys, and lithologic information. Generally the 2013 database was in good shape and was accepted by GeoVector as is. The 2013 data was added to the database used for the previous resource estimate.

The relevant Qualified Persons did not conduct check sampling of the core; were confident in the integrity of the samples collected by Fission and believe the sample preparation, analysis and security for the J Zone to have been done within the CIM Definition Standards guidelines as required by NI 43-101, and; did visually inspect the core and the majority of the significant uranium intercepts from the 2010 to 2012 drill programs.

The relevant Qualified Persons also inspected the majority of the significant uranium intercepts with a hand held Exploranium GR-110G total count gamma-ray scintillometer and confirmed the presence of uranium mineralization. The relevant Qualified Persons caution that scintillometer readings are not directly or uniformly related to uranium grades of the rock sample measured, and should be used only as a preliminary indication of the presence of radioactive materials.

QAQC procedures performed by Fission on assay samples are explained in detail in Section 11. In the opinion of the relevant Qualified Persons, they are in accordance with industry best practice and consider them to be reasonable and acceptable for resource estimation.

There was no verification or repeat logging of down hole orientation surveys. Gamma probe surveys are recorded while going down hole and up hole resulting in two survey files for each hole. The overall gamma probe up and down results can be compared to ensure that no spurious readings were recorded.

12.2 Huskie

Prior to mineral resource estimation, Denison performed detailed QAQC and data verification of all datasets, which in Denison's view are in accordance with industry best practice and consider them to be reasonable and acceptable for resource estimation. Denison has performed additional QAQC and data verification of the database as described in the sub sections below.

Denison conducted audits of all records to ensure that the grade, thickness, elevation, and location of uranium mineralization used in preparing the current resource estimates were accurate. Denison performed the following queries on the digital project database. No significant issues were identified.

- 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.
- Core recovery table: searched for core recoveries greater than 100% or less than 75%, overlapping intervals, missing collar data, negative widths, and data points past the specified maximum depth in the collar table.
- Lithology and Probe tables: searched for duplicate entries, intervals past the specified maximum depth in the collar table, overlapping intervals, negative widths, missing collar data, missing intervals, and incorrect logging codes.
- Geochemical and assay table: searched for duplicate entries, sample intervals past the specified maximum depth, negative widths, overlapping intervals, sampling widths exceeding tolerance levels, missing collar data, missing intervals, and duplicated sample IDs.

In addition, a review of selected drilling campaign reports and associated data appendices were reviewed to validate and support the drill hole database content. No inconsistencies or errors in the database were noted.

The assay table contains 201 laboratory records. Denison verified all 201 records representing 100% of the data for uranium values against five different laboratory certificates. No discrepancies were identified.

Based on the data validation by Denison and the results of the standard, blank, and duplicate analyses, Denison is of the opinion that the assay database is of sufficient quality for mineral resource estimation. Denison additionally carried out checks of the digital probe equivalent uranium database used for resource estimation by verifying the probe equivalent uranium database against original assay data. Denison verified that in instances were core recovery was less than 75%, radiometric data could be substituted for chemical assays and that the assay database was of sufficient quality for mineral resource estimation.

As outlined in Section 2.5, Cliff Revering of SRK, and Mr. Serdar Donmez and Mr. Dale Verran of Denison, visited the Waterbury Lake property on August 20th and 21st, 2018 accompanied by Mr. Paul Burry (Project Geologist, Waterbury Lake Project) of Denison. During the visit Mr. Revering, Mr. Donmez and Mr. Verran also visited several drill sites and verified the occurrence of high grade mineralization visually and by way of handheld scintillometer. Additional routine discussions were held at Denison's exploration office in Saskatoon with Denison's technical personnel.

To construct the 3D geology model and the mineralized wireframes and to complete the resource estimate for the Huskie deposit, Denison relied solely on lithological and structural data from detailed core logs and geochemical assays collected from holes drilled by Denison in 2017 and 2018 at Huskie.

Based on Denison's validation of the Huskie deposit data, Denison is of the opinion that the assay and probe equivalent databases are of sufficient quality for mineral resource estimation.

12.3 Opinion on Adequacy of Data

The relevant Qualified Persons consider the J Zone and the Huskie deposit data to be reliable and appropriate for the preparation of a Mineral Resource estimate.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

13.1 J Zone

The following description of the mineral processing and metallurgical testing completed in 2011 was extracted from the 2012 Technical Report for Fission titled "*Technical Report on the Waterbury Lake Uranium Project Including Resource Estimate on the J Zone Uranium Deposit, Waterbury Lake Property, Athabasca Basin, Northern Saskatchewan*", dated February 29th, 2012 and revised on May 29th, 2012 by Armitage and Nowicki, which is filed on SEDAR under Fission's profile. No additional testing has been completed in 2012 or 2013.

In order to provide a preliminary assessment of the metallurgical characteristics of the J Zone mineralization, an assessment of the mineralogical and leaching characteristics of a representative selection of drill core samples was undertaken between July and December 2011.

The study is based on a suite of 48 samples of mineralized material collected from thirty-two drill holes (2010 and 2011 programs). These were chosen to provide good spatial representation of the J Zone (and J-East) mineralization as well as representing a wide range of uranium content and covering a range of different settings (i.e. sandstone / conglomerate hosted, basement hosted, south-side lens, J-East). The samples were derived from the half split core remaining after the initial geochemical / assay sampling process. The radioactivity, measured in cps, was recorded for each piece of core and a flagging tape label was stapled into the core box to mark the sample location.

All samples were submitted to the SRC for comprehensive mineralogical analysis and preparation of thin sections for petrographic analysis by MSC. The results of mineralogical work were used, in conjunction with spatial considerations, to define suitable composite samples for preliminary leaching test work undertaken by the SRC Mining and Minerals Division. Results of this work are summarised below with details provided in unpublished reports MSC11/043 and Zhang (2011).

13.1.1 Mineralogical Analysis

The principal objective of this study was to determine the overall mineral assemblage of the J Zone ore and to provide a better understanding of the mineralogy and texture of the uranium-bearing phases.

Semi-quantitative Rietveld XRD analysis was undertaken on all 48 samples and, in addition, SRC determined the uranium content (in ppm U) of each sample by XRF analysis. Based on the XRD, a subset of 24 samples was selected for quantitative mineralogical analysis (Q-Min) by the SRC. This involved high-resolution compositional scanning of the sample pulps (-106 micron powder, as used for XRD and XRF analysis) by electron microprobe followed by image analysis to determine the proportion of mineral phases identified and quantitative EPMA analysis of all identified minerals. In addition to the analytical work undertaken at the SRC, MSC undertook petrographic and detailed SEM-EDS analysis of small subsamples from 30 of the mineralized samples. The results of this work are described in detail in MSC report MSC11/043.

The mineralogical analyses determined that the most abundant uranium-bearing minerals in the J Zone are uraninite and/or pitchblende, and coffinite. The gangue mineralogy is essentially comprised of various amounts of quartz, phyllosilicates (illite-sericite, chlorite, biotite, kaolinite) and (Fe, Ti)-oxides (hematite, goethite and anatase recognized by XRD analyses). Feldspars also occur in most samples and carbonates as well as a variety of sulphides are locally present. Ni-arsenides are recognized throughout the samples as well.

Uranium-bearing phases vary in size from microcrystalline to coarse-grained. Finer-grained phases occur as fracture infill or interstitial to quartz and /or phyllosilicates and are commonly associated with Ni-arsenides. Coarser-grained uranium phases form polycrystalline aggregates, variably associated with Fe-oxides (hematite and/or goethite) and microcrystalline copper-bearing sulphides. Uranium zoning is observed in some samples, in which aggregates and fractures of lead-poor uraninite are lined by lead-rich uraninite.

The results of the mineralogical analyses identified five groupings of samples with ore mineralogies typically dominated by either uranium oxide or uranium silicate phases. Samples taken from the PKB area (portion of J Zone western lens) were found to dominantly contain a high proportion of uranium silicate minerals with minor amounts of uranium oxides. Samples taken from the central and western portions of the J Zone eastern lens were dominated by uranium oxides with only minor amounts of uranium silicates. The central uranium oxide zone appears to be flanked to the east and west by two regions dominated by uranium silicates or a roughly even mixture of silicate and oxide phases.

13.1.2 Acid Leaching Tests

Leaching tests were undertaken by SRC Mining and Minerals Division on composite samples prepared from the sample set discussed in the previous section. The primary objective of the leaching test work was to provide an initial assessment of the amenability of J Zone ore to acid leaching methods and to use the extraction rate of uranium as an indicator of the acid leaching efficiency. Only the leaching time and rate of acid addition were considered in the tests while the other parameters (e.g. solid percentage in the slurry, temperature, pressure and agitation conditions) remained fixed. The results of the leaching test work are presented in Zhang (2011) and are summarised below.

13.1.2.1 Composite preparation

Composite ore samples were prepared from 47 of the samples included in the mineralogical analysis discussed above. A total of five composite samples were defined based on the location to provide spatially representative coverage of the J Zone as well as J-East and PKB. In addition, the results of mineralogical work (in particular variations in the proportion of U-silicates vs U-oxides) were considered in defining the composite samples. The composites each include samples originating from 3 to 7 different drill holes, and representing different lithologies, uranium grades and mineralogy. The uranium grade in the composite samples varies from a low of 0.71 % U_3O_8 in Composite 1 to a high of 3.23 % U_3O_8 in Composite 3. A summary of the composite sample features is presented in Table 13-1, and the assays of uranium, gold, and other significant constituents for the five composites are provided in Table 13-2.

Table 13-1: Summary of composite sample features.

Composite Sample #	Number of Samples Included	Total weight (kg)	Sample Source Area	Host Lithologies	Dominant Uranium Phase (from QMin)
1	7	2.65	PKB (Western lens)	Basal conglomerate, metasediments	Silicates >> oxides
2	7	2.11	West edge of the J Zone eastern lens	Metasediments, unknown gneisses	Oxides > silicates
3	11	3.65	Center of the J Zone eastern lens	Sandstone, basal conglomerate, metasediments	Oxides >> silicates
4	5	1.79	East edge of the J Zone eastern lens	Sandstone, metasediments	Silicates > oxides
5	5	2.05	Mid lens	Metasediments	Oxides ≈ silicates

Table 13-2: Assays for uranium, gold and other constituents for the five studied composites used for leaching tests.

Composite Sample		Au	Ni	As	Mo	Fe_2O_3
	(%)	(g/ton)	(ppm)	(ppm)	(ppm)	(%)
Composite 1	0.71	0.17	2,982	2,560	72	6.03
Composite 2	1.33	0.08	2,704	3,495	371	5.12
Composite 3	3.23	N/A	3,145	8,218	744	15.8
Composite 4	1.39	0.5	834	1,567	498	17.1
Composite 5	1.14	0.37	4,762	3,850	122	9.8

13.1.2.2 Leaching Test Methods

Acid leaching was performed on each of the composite samples for 12 hours under atmospheric pressure and at a temperature of 55-65°C. The atmospheric leach represents the circuit at the Rabbit Lake mill, one of the local area mills which could be considered for processing the J Zone ore. Agitation was used to create adequate turbulence. Sodium Chlorate was used as the oxidant. The tests were undertaken on the assay lab rejects from XRD analyses that were ground to 90% passing 106 microns. The percentage of solids in the slurry was set at 50%. The only variables were the acid addition and leaching residence time. Two different H2SO4 dosages were used to create an initial leaching environment with 25 mSc/cm and 55 mSc/cm, respectively. Each composite sample was split into two subsamples labelled A and B. The A sample was used to test high acid addition with high initial conductivity and the B sample was used to test low acid addition with low initial conductivity.

13.1.2.3 Leaching Test results

The results of the preliminary acid leaching tests are presented in Table 13-3 and show that maximum extraction rates of 97.6 % to 98.5 % U_3O_8 can be obtained (depending on the acid addition) within 4 to 8 hours of leaching time, and that the leaching efficiency was variably affected by acid addition and leaching time.

Composite 1 has a U_3O_8 grade of 0.71 % U_3O_8. The maximum extraction rate of 98.5% was reached within an eight hours leach time. There were no appreciable effects on extraction rate when acid addition was increased from 6.69 kg to 9.31 kg H2SO4 / kg U_3O_8. An acid consumption rate of 6.69 kg to 9.31 kg is in the normal consumption range for the northern Saskatchewan uranium mines.

Composite 2 and 4 have similar U_3O_8 grades of 1.33 % U_3O_8 and 1.39 % U_3O_8. Within six hours of leaching, the maximum extraction rate of 98.5% was achieved with an acid addition rate of 5.43

kg H2SO4/kg U_3O_8 for Composite 2 and 6.22 kg H2SO4 / kg U_3O_8 for Composite 4. For both samples, the leaching efficiency is only slightly improved with increased acid addition.

Composite 3 is the highest grade sample (3.23 % U_3O_8). The maximum U_3O_8 leaching efficiency was 97.1% and 95.6% in a 10 hour leach for 3A and 3B. One of the reasons for the low extraction rate was considered to be the relatively coarse grain size of the composite sample. Therefore, a third split, Composite 3C was re-ground to reduce grain size and subjected to leach testing. A maximum of 98.4% leaching efficiency was achieved in eight hours for this sample. The acid addition rate for this test was 2.51 kg H2SO4 / kg U_3O_8 indicating that proper grinding plays a significant role for effective leaching.

Composite 5 has a U_3O_8 grade of 1.14 % U_3O_8. The maximum extract rate of 97.6% was reached within 4 hours of leaching at an acid addition rate of 8.09 kg H2SO4 / kg U_3O_8. The leaching of Composite 5 could be optimized to achieve high leaching efficiency while minimizing the acid consumption rate.

Fire assay was performed on the leaching residues. The gold concentrations in the Composite 1 to 5 leaching residues were 0.176 g/ton, 0.291 g/tonne, 0.569 g/tonne, 0.869 g/tonne, and 0.634 g/tonne, respectively.

Table 13-3: Summary of uranium leach test results. Results are provided for extraction times at which maximum extraction rates were achieved.

Sample	Extraction Time (hours)	Acid (kg / kg)	Maximum Extraction Rate					Au in residue (g/tonne)
			U_3O_8 (%)	Ni (%)	As (%)	Mo (%)	Fe_2O_3 (%)	
1A	8	9.31	98.5	86.4	87.8	72.2	38.1	0.176
1B	8	6.69	98.5	87.4	89.5	77.8	37.5	
2A	6	5.43	98.5	88.7	84.6	68.4	34.9	0.291
2B	4	2.72	96.1	81.2	74.7	52.5	21.5	
3A	10	2.37	97.1	90.5	82.7	73.9	37.7	0.569
3B	10	1.63	95.6	85.9	79.1	72.6	37.8	
3C	8	2.52	98.4	87.8	87.4	78.1	51.6	NA
4A	6	6.22	98.5	83.8	69.8	56.8	27.2	0.869
4B	6	3.89	98.2	84.7	69.9	56.2	25.2	
5A	4	8.09	97.6	75.5	78.4	74.6	32	0.634
5B	4	4.27	96.2	77.9	79.3	77	35.4	

13.1.3 Further Work

A more comprehensive phase of metallurgical test work has previously been recommended to optimize the leaching efficiency as well as to evaluate other parameters of the leaching process (grinding size of the ore, solid percentage in the slurry, temperature, pressure, and residence time and agitation conditions).

13.2 Huskie

No representative mineral processing or metallurgical testing studies have been carried out on the Huskie deposit. Based on observation of drill core and geochemical data, mineralization in the Huskie deposit is expected to have very similar mineralogical and paragenetic characteristics to mineralization in other basement-hosted deposits in the region, including Denison's Gryphon deposit, located on the Wheeler River property.

14 MINERAL RESOURCES ESTIMATE

14.1 Introduction

The Mineral Resources for the Waterbury Lake Project comprise the J Zone and the newly discovered Huskie deposits. The Mineral Resource Statement presented herein represents the Mineral Resource evaluation prepared for the Waterbury Lake Project in accordance with NI 43-101.

The mineral resource estimate for the J Zone herein was prepared by Allan Armitage, Ph. D., P. Geol. and Alan Sexton, M.Sc., P.Geo. of GeoVector, which was published and filed on SEDAR in a report titled "*Technical Report on The Mineral Resource Estimate On The J Zone Uranium Deposit, Waterbury Lake Property, located in the Athabasca Basin, Northern Saskatchewan*", dated September 6th, 2013 (Armitage & Sexton, 2013). There has been no change to the mineral resource model for the J Zone.

The mineral resource model for the Huskie deposit herein was prepared by Serdar Donmez, P.Geo. in accordance with NI 43-101 and CIM Definitions (2014), which was reviewed and audited by SRK Consulting (Canada) Inc. The Audited Mineral Resource Statement for the Huskie deposit was prepared by Dr. Oy Leuangthong, P.Eng. and Mr. Cliff Revering, P.Eng., who are independent qualified persons pursuant to NI 43-101. The resources in the current estimate are not mineral reserves as they do not have demonstrated economic viability.

The effective date of the Audited Mineral Resource Statement for the Huskie deposit is October 17, 2018.

14.2 J Zone

Subsequent to the release of the mineral resource estimate in December, 2012, Fission completed additional drilling on the Property, including step-out and infill drill holes on the J Zone, which were completed during a 2013 winter (08 January to 17 March, 2013) drill program. A total of 68 drill holes were completed, in a total of 20,590.20 meters. Mineralization was found in 35 holes or 51% of the holes in the program. All holes were targeted to further delineate and expand the mineralized area of the J Zone. This report discloses a new mineral resource estimate utilizing the information from the winter 2013 drill program.

The mineral resource estimate for the J Zone was prepared by Allan Armitage, Ph.D., P. Geol, of GeoVector Management Inc. Dr. Armitage is an independent Qualified Persons as defined by NI 43-101. Practices consistent with CIM (2005) were applied to the generation of the mineral resource estimate. There are no mineral reserves estimated for the Property at this time.

Inverse distance squared interpolation restricted to a mineralized domain was used to estimate tonnes, density and U_3O_8 grades as well as gold, arsenic, cobalt, copper, molybdenum and nickel grades into the block model. Indicated mineral resources are reported in summary tables in Section 14.2.11 below, consistent with CIM definitions required by NI 43-101 (CIM, 2005).

14.2.1 Drill File Preparation

Preparation of the drill database prior to the 2013 drill program is described in the 2012 Technical Report titled "*Technical Report on the Revised Resource Estimate on the J Zone Uranium Deposit, Waterbury Lake Property, Athabasca Basin, Northern Saskatchewan*", dated January 18th, 2013 by Sexton and Armitage, which is filed on SEDAR. The 2013 drill database was added to the database that was used for the previous resource number.

To complete the update resource estimate on the J Zone, GeoVector assessed the raw drill core database that was available from the drill program completed between January and March, 2013 on the Property. GeoVector was provided with an updated drill hole database which included collar locations, down hole survey data, assay data, lithology data, down hole radioactive data, core recovery data and specific gravity ("SG") data.

The database was checked for typographical errors in assay values and supporting information on source of assay values was completed. Sample overlaps and gapping in intervals were also checked. Verifications were also carried out on drill hole locations, down hole surveys, and lithologic information. Generally the 2013 database was in good shape and was accepted by GeoVector as is. The 2013 data was added to the database used for the previous resource estimate.

A summary of the 2013 and complete drill hole database used for the current resource estimate is presented in Table 14-1. A statistical analysis of the U_3O_8 database is presented in Table 14- 2. Note that the U_3O_8 values are predominantly based on assay values. Where an assay value was not available, the uranium value determined by fluorimetry (converted to U_3O_8) was used in the resource estimate. Approximately 88% of the U_3O_8 values used to define the J Zone were determined by assay. All samples > 0.01% U_3O_8 were determined by assay.

Table 14-1: Summary of the drill hole data used in the resource modeling.

2013 Resource Drill Database	
Total Number of drill holes	68
Total meters of drilling	20,590
Total number of assay samples	2,055
Total number of specific gravity samples (WW/WA)	319
Complete Resource Drill Database	
Total Number of drill holes	268
Total meters of drilling	88,770
Total number of assay samples	12,551
Total number of specific gravity samples (WW/WA)	2,649

Table 14-2: Summary of all drill hole U_3O_8 data from the J Zone drilling.

J Zone Sample Data	U_3O_8 (%)
Number of samples	12,551
Minimum value	0.001
Maximum value	62.90
Mean	0.19
Median	0.001
Variance	3.33
Standard Deviation	1.83
Coefficient of variation	9.74
99 Percentile	3.19

14.2.2 Resource Modelling and Wireframing

For the 2013 mineral resource estimate, a grade control model or wireframe (Figure 14-1) was based generally on a cut-off grade of 0.03 to 0.05 % U_3O_8 which involved visually interpreting mineralized zones from cross sections using histograms of U_3O_8. 3D rings of mineralized intersections were made on each cross section and these were tied together to create a continuous wireframe resource model in Gemcom GEMS 6.5 software. The modeling exercise provided broad controls on the size and shape of the mineralized volume.

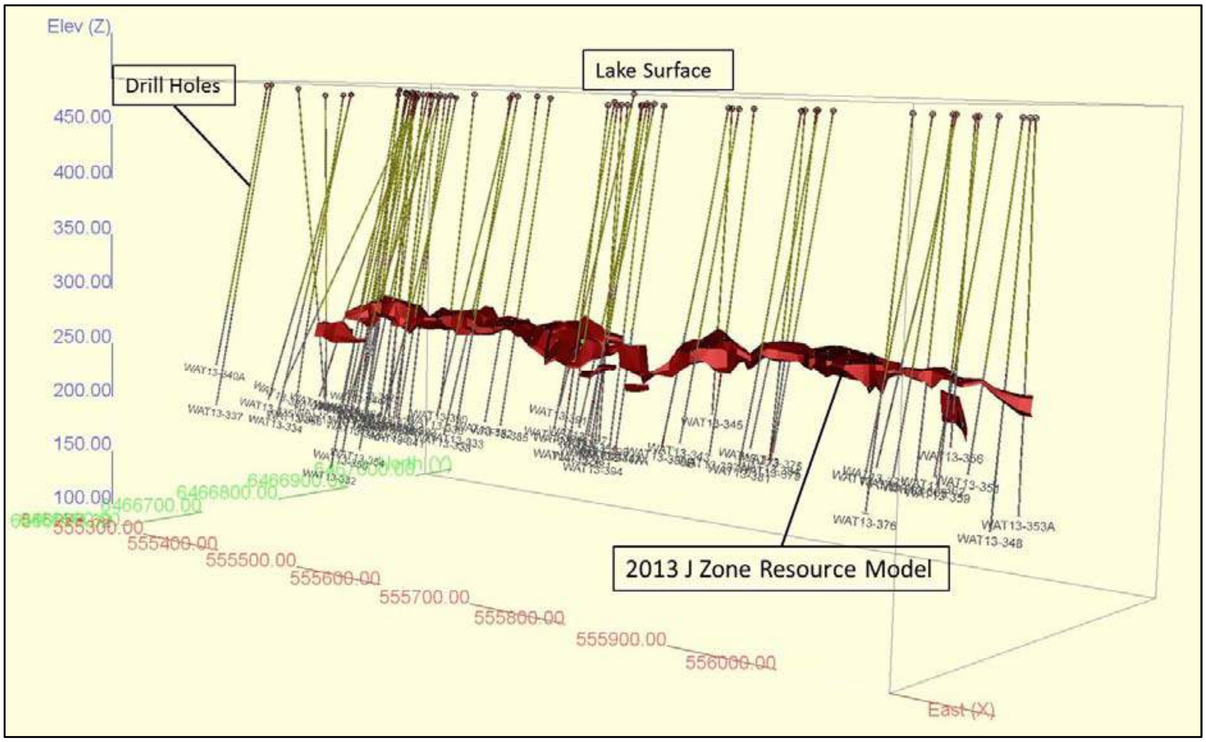
The morphology of the wireframe was influenced by the following:

1. The J Zone deposit is currently defined by 268 drill holes (83,005.92 metres) (Appendix 1) including 68 holes (20,590 metres) completed in 2013. Uranium mineralization has been intersected over a combined east-west strike length of ~690m and a maximum north-south lateral width of 40m. The ore body trends roughly east-west (080°) in line with the metasedimentary corridor and cataclastic graphitic fault zone. Mineralization thickness

varies widely throughout the J Zone and can range from tens of cm to over 19.5m in vertical thickness. In cross section J Zone mineralization is roughly trough shaped with a relatively thick central zone that corresponds with the interpreted location of the cataclasite and rapidly tapers out to the north and south. A particularly high-grade (upwards of 40 % U_3O_8) but often thin lens of mineralization is present along the southern boundary of the metasedimentary corridor, as seen in holes WAT10-066, WAT10-071, WAT10-091, and WAT10-103. Ten meter step out drill holes to the south from these high-grade holes have failed to intersect any mineralization, demonstrating the extremely discreet nature of mineralization.

2. Uranium mineralization is generally found within several metres of the unconformity at depth ranges of 195 to 230m below surface. It variably occurs entirely hosted within the Athabasca sediments, entirely within the metasedimentary gneisses or straddling the boundary between them. A semi-continuous, thin zone of uranium mineralization has been intersected in occasional southern J Zone drill holes well below the main mineralized zone, separated by several meters of barren metasedimentary gneiss. This mineralized zone is informally termed the south-side lens and can host grades up to 3.70 % U_3O_8 as seen in drill hole WAT11-142.

A)



B)

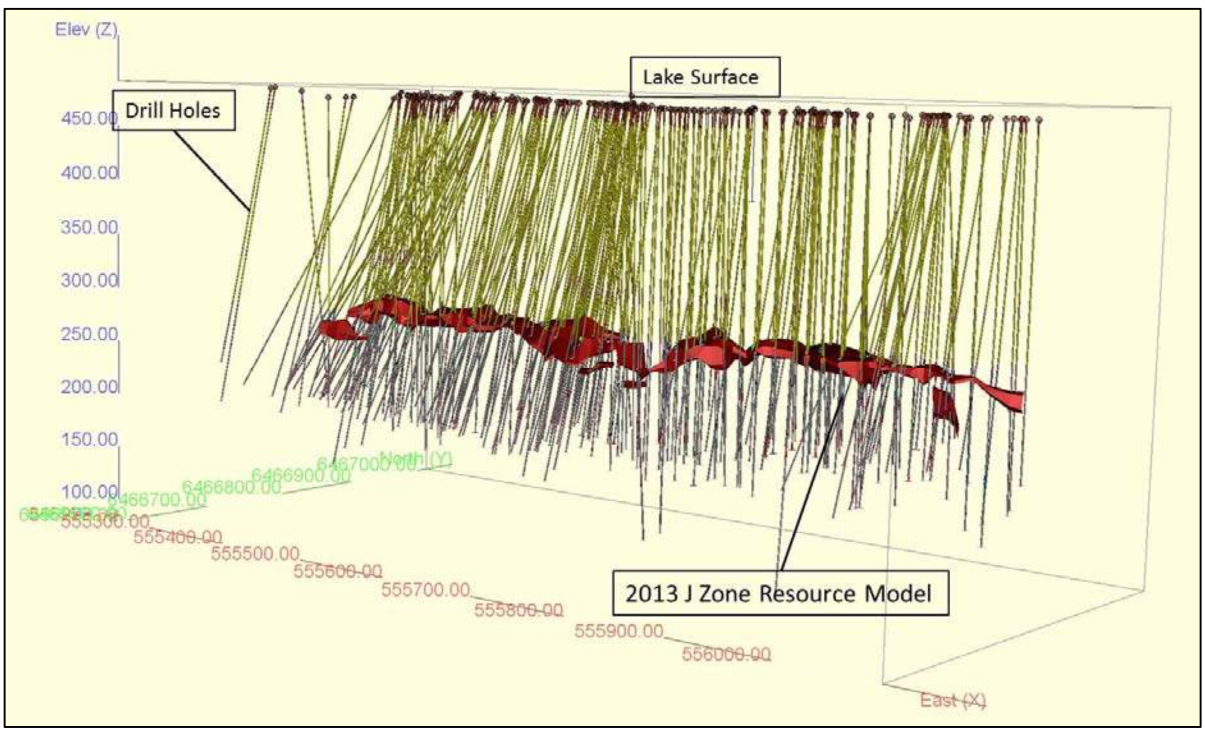


Figure 14-1: Isometric view looking northwest shows the revised J Zone resource model (red solid), 2013 drill hole locations (A) and drill hole locations of all holes used to define the J Zone (B).

14.2.3 Composites

The average width of drill core samples is 0.50 metres, within a range of 0.10 metres up to 4.0 metres. Of the total assay population 98% were 0.5metres or less. As a result, 0.5metre composites were used for the resource.

Composites for drill holes were generated starting from the collar of each hole. For the resource, a composite population was generated for the mineralized domain and totalled 2,335 (Table 14-3) from 121 drill holes which intersect the resource model. These composite values were used to interpolate grade into the resource model.

Table 14-3: Summary of the drill hole composite data from within the J Zone resource model.

J Zone Composite Values (all drill holes which intersect the resource model)	**U_3O_8 (%)**
Number of drill holes	149
Number of samples	2,854
Minimum value	0.000
Maximum value	62.9
Mean	0.80
Median	0.09
Variance	14.12
Standard Deviation	3.76
Coefficient of variation	4.69
99 Percentile	16.9

14.2.4 Grade Capping

Based on a statistical analysis of the composite database from the resource model (Table 14-3), it was decided that no capping was required on the composite populations to limit high values for uranium. A histogram of the data indicates a log normal distribution of the metals with very few outliers within the database. Analysis of the spatial location of outlier samples and the sample values proximal to them led GeoVector to believe that the high values were legitimate parts of the population and that the impact of including these high composite values uncut would be negligible to the overall resource estimate.

14.2.5 Specific Gravity

Drill core samples collected for bulk density measurements were completed at SRC. Samples are first weighed as they are received and then submerged in deionised water and re-weighed. The samples are then dried until a constant weight is obtained. The sample is then coated with an impermeable layer of wax and weighed again while submersed in deionized water. Weights are entered into a database and the bulk density of the core waxed and un-waxed (emersion method) is calculated and recorded. Not all density samples had both density measurements recorded. Water temperature at the time of weighing is also recorded and used in the bulk density calculation. The detection limit for bulk density measurements by this method is 0.01 g/cm3.

A total of 2,584 SG measurements were recorded for un-waxed core samples (average density of 2.57) and 2,381 SG measurements of waxed core (average density of 2.45) were recorded, including samples collected in 2013. A total of 90% of the samples tested were tested by both methods and only 10% of the samples were tested by only one method.

For previous resource estimates on the J Zone, the density measurements for the un-waxed samples were used to determine an average density for the resource model. Based on an analysis of the SG values of samples from within the mineralized domain it was decided that an average SG value of 2.61 t/m3 be used for the original J Zone resource estimate. For the update resource in 2012, an additional 947 SG samples were collected from the drill core in 2012. The 2012 data included 162 samples from within the J Zone resource model. Based on an analysis of the SG data of samples from within the mineralized domains it was decided that an average SG value of 2.56 t/m3 be used for the updated J Zone resource estimate.

An additional 313 un-waxed core samples (average SG of 2.53) and 192 SG measurements of waxed core samples (average SG of 2.49) were added to the database in 2013. As SG values from waxed samples should be more robust than those on unwaxed samples, the waxed core measurements were used for the 2013 resource estimate.

For uranium deposits increasing alteration is typically associated with lower SG as the original minerals are altered to clay minerals. Increasing amounts of uranium mineralization increase SG as more of the massive metal is present. A scatter plot of uranium assays and SG measurements (waxed core) shows a flat trend for U_3O_8 grades below 3-4% (Figure 14-2). The slope of the relationship increases sharply above grades of about 4.0 percent indicating a change in the relationship between higher grade uranium mineralization and specific gravity.

Although a relationship appears to exist between U_3O_8 grades and SG there is only a small population of data points at the higher grades to provide back-up for this assessment. Therefore some uncertainty remains as to the scale and consistency of the relationship between U_3O_8 grades and SG. Despite the uncertainty, SG values were calculated for untested assay samples using the relationship observed with the U_3O_8 grades and the measured samples. This approach is a common practice for uranium resource estimation, and this methodology was followed for the current resource estimate (Figure 14-2).

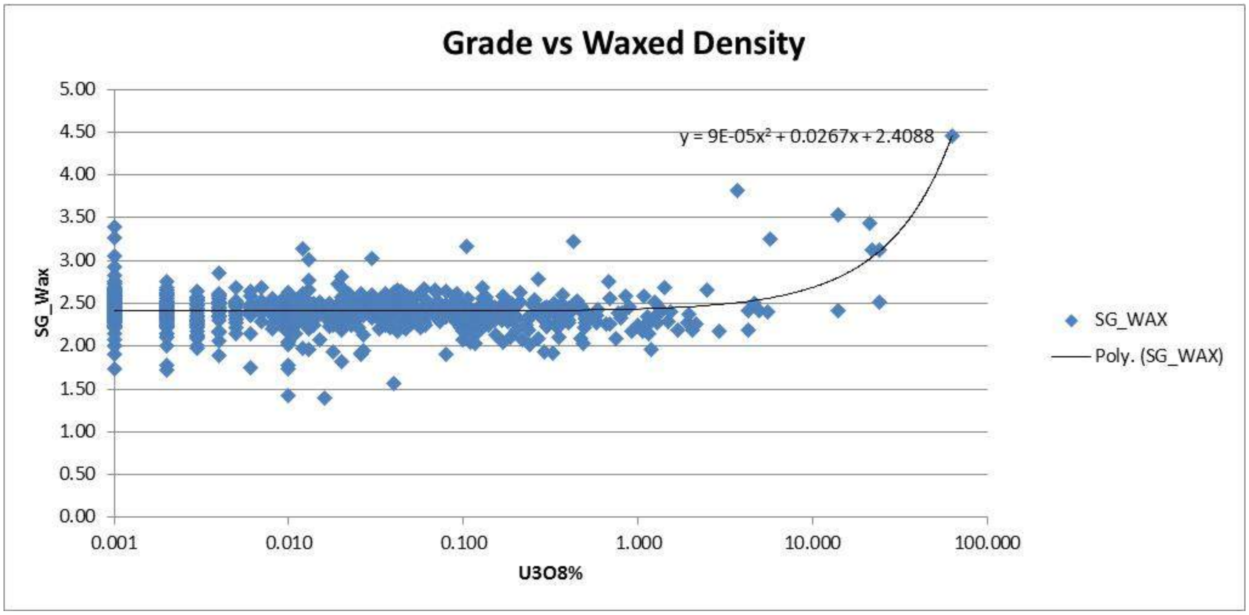


Figure 14-2: Scatter Plot Showing the Relationship between U_3O_8 and Specific Gravity (waxed core) for samples from the J Zone.

14.2.6 Block Model Parameters

A block model was created for the J Zone within UTM NAD83 Zone 13N space (Figure 14-3; Table 14-4) and an elevation of 300 metres above mean sea level. The block model was constructed using 2m x 1m x 1m blocks in the x, y, and z direction respectively. Criteria used in the selection of block size include the borehole spacing, composite assay length, and the geometry of the modelled zones.

14.2.7 Grade Estimation

For the previous resource estimates on the J Zone, U_3O_8 grade was interpolated into the blocks by the inverse distance squared (ID^2) method to generate block grades in the Indicated and Inferred category. In addition to U_3O_8, grades for gold, arsenic, cobalt, copper, molybdenum and nickel were interpolated into the blocks.

The methodology for grade estimation of U_3O_8 for the current resource was changed. The following procedure is common industry practise by uranium companies on uranium projects within the Athabasca Basin.

1. Use the regression formula (SG = 0.00009 $U_3O_8^2$ + 0.0267 U_3O_8 + 2.4088) to calculate an SG for every uranium composite grade that does not have a measured SG value,
2. Multiply SG x by the U_3O_8 assay value to get a Grade-SG (GD) value for each composite,
3. Interpolate GD and SG values into each block,

4. Calculate the block grade by dividing the interpolated GD values by interpolated SG value.

The SG and GD values were interpolated into the blocks by the inverse distance squared (ID2) interpolation method to generate block grades in the Indicated and Inferred category. Analysis for gold, arsenic, cobalt, copper, molybdenum and nickel were limited in the 2013 assay database. As a result, grades for gold, arsenic, cobalt, copper, molybdenum and nickel were not interpolated into the blocks and will not be reported for the current resource estimate.

Two passes were used to interpolate all of the blocks in the wireframe, but 99% of the blocks were filled by the first pass. The size of the search ellipse, in the X, Y, and Z direction, used to interpolate grade into the resource blocks is based on 3D semi-variography analysis (completed in GEMS) of mineralized points within the resource model. For the first pass, the search ellipse was set at 25 x 15 x 15 in the X, Y, Z direction respectively. The Principal azimuth is oriented at 075º, the Principal dip is oriented at 0° and the Intermediate azimuth is oriented at 0° (Table 14-4). For the second pass, the search ellipse was set at 50 x 30 x 30 in the X, Y, Z direction respectively. The Principal azimuth is oriented at 075º, the Principal dip is oriented at 0° and the Intermediate azimuth is oriented at 0°.

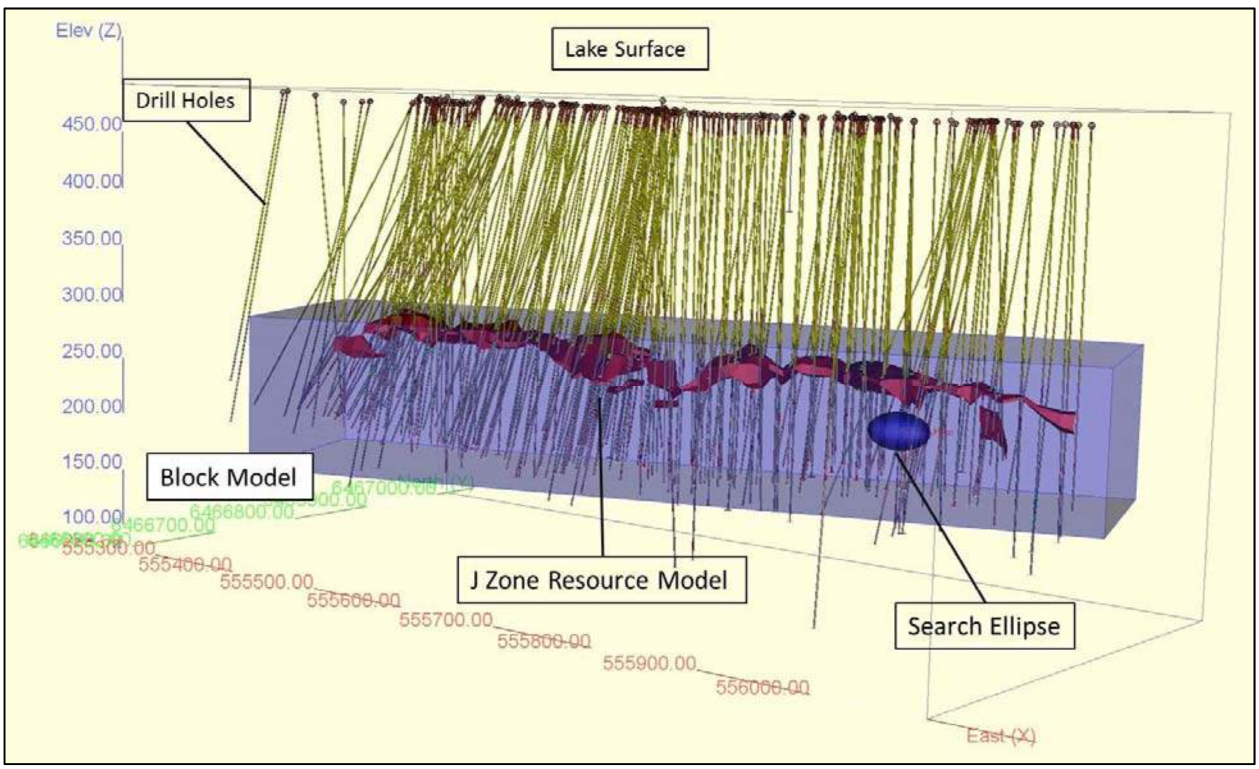


Figure 14-3: Isometric view looking northwest shows the J Zone resource block model, resource model, drill holes and search ellipse.

Table 14-4: Block model geometry and search ellipse orientation.

Block Model	Main Zone		
	X	Y	Z
Origin (NAD83, Zone 13N)	555420	6466590	300
# of Blocks	360	190	130
Block Size	2	1	1
Rotation	20°		
Search Type	Ellipsoid		
	Indicated	Inferred	
Principle Az.	75°	75°	
Principle Dip	0°	0°	
Intermediate Az.	0°	0°	
Anisotropy X	25	50	
Anisotropy Y	15	30	
Anisotropy Z	15	30	
Min. Samples	4	2	
Max. Samples	6	6	

14.2.8 Model Validation

The total volume of the blocks in the resource model, at a 0 cut-off grade value compared to the volume of the resource model was essentially identical. The size of the search ellipse and the number of samples used to interpolate grade achieved the desired effect of filling the resource models and very few blocks were left un-interpolated after the first pass. All were interpolated with a final pass that doubled the search radii.

Because ID2 interpolation was used, the drill hole intersection grades would be expected to show good correlation with the modelled block grades. A visual check of block grades of uranium against the composite data in 3D (Figure 14-4) and on vertical section showed excellent correlation between block grades and drill intersections. The resource model is considered valid.

14.2.9 Block Model Classification

The Mineral Resource estimate is classified in accordance with the CIM Definition Standards (2005). The confidence classification is based on an understanding of geological controls of the mineralization, and the drill hole pierce point spacing in the resource area. The resource estimate in areas with drill spacing of ~25m or less is classified as Indicated and in areas with drill densities of greater than 25 metres is classified as Inferred. The vast majority (99%) of the total resource in the J Zone deposit was interpolated with the first pass, so the entire mineral resource is being classified as Indicated.

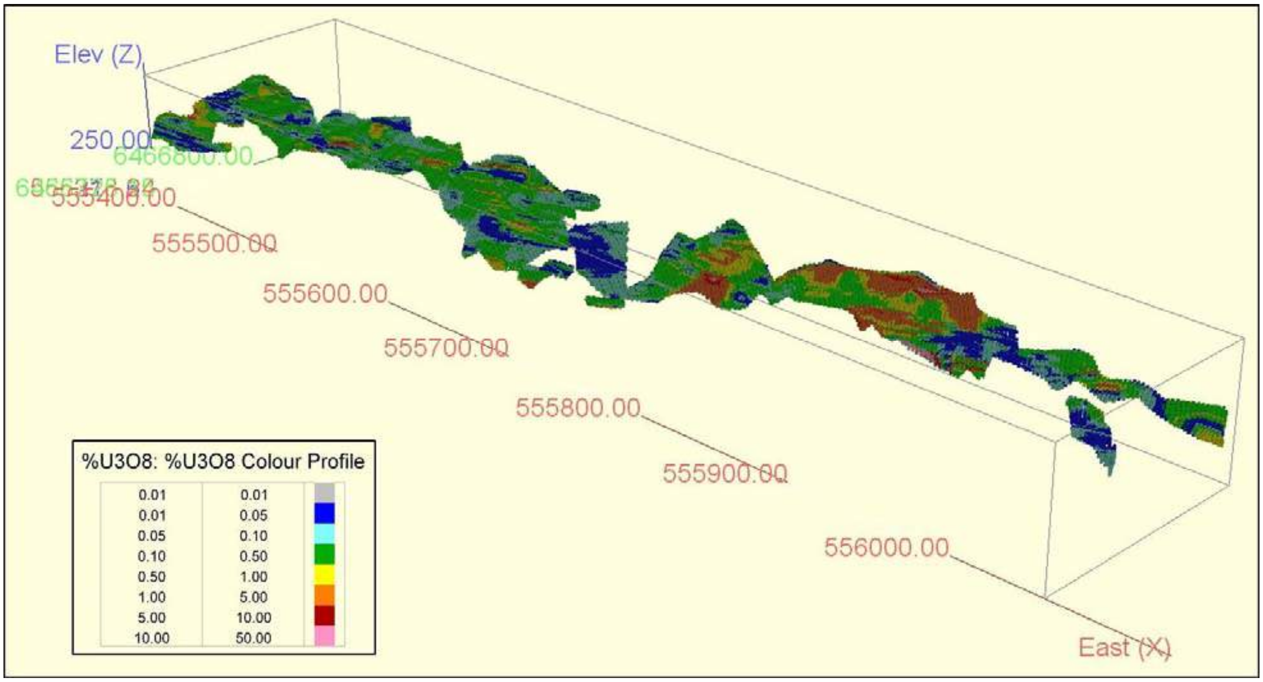


Figure 14-4: Isometric view looking northwest shows the J Zone uranium resource blocks.

14.2.10 Resource Reporting

The grade and tonnage estimates contained herein are classified as Indicated given CIM definition Standards for Mineral Resources and Mineral Reserves (2005). As such, it is understood that:

An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

Mineralization may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralization. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource estimate is of sufficient quality to support a Preliminary Feasibility Study which can serve as the basis for major development decisions.

The mineral resource, at various U_3O_8 cut-off grades (COG) is presented in Table 14-5. Tonnage and grade at variable cut-off values are included to highlight the sensitivity of changes in cut-off to tonnage and grade. Mineral resource tonnage and contained metal in the table has been rounded to reflect the accuracy of the estimate, and numbers may not add due to rounding.

14.2.11 Mineral Resource Statement

GeoVector has estimated a range of resources at various U_3O_8 cut-off grades (COG) for the J Zone (Table 14-5). The current indicated resource is stated using a grade cut-off of 0.10% U_3O_8.

Using a base case COG of 0.10% U_3O_8 the J Zone deposit is currently estimated to contain:

An Indicated resource totaling 12,810,000 lbs. based on 291,000 tonnes at an average grade of 2.00% U_3O_8.

Table 14-5: Resource estimate for the J Zone.

Cut-off Grade (U_3O_8 %)	Tonnes	Specific Gravity	U_3O_8 (%)	
			Grade	Lbs
0.01 %	432,000	2.40	1.40	12,985,000
0.05 %	370,000	2.41	1.60	12,939,000
0.10 %	**291,000**	**2.42**	**2.00**	**12,810,000**
0.50 %	123,000	2.49	4.40	11,923,000
1.0 %	76,000	2.54	6.70	11,171,000
5.0 %	24,000	2.77	16.00	8,446,000
10 %	12,000	2.97	24.00	6,183,000
20 %	5,000	3.25	33.00	3,492,000

14.2.12 Disclosure

All relevant data and information regarding the Property is included in other sections of this Technical Report. There is no other relevant data or information available that is necessary to make the technical report understandable and not misleading.

14.3 Huskie Deposit

The Huskie deposit, located within the Waterbury Lake Uranium Project, was discovered by Denison in 2017 and is interpreted to comprise three parallel stacked lenses, termed herein, Huskie 1, Huskie 2 and Huskie 3. The mineral resource models for the Huskie deposit was prepared by Serdar Donmez, P. Geo., E.I.T. (APEGS # 14900), Resource Geologist, Denison, in September 2018. SRK Consulting (Canada) Inc. (SRK) was retained by Denison to perform a review and audit of the internal mineral resource model generated for the Huskie deposit.

Section 14.3 summarizes the main findings of SRK's review, following the methodology listed sequentially below:

1. Review the geological interpretation, available drilling data, mineral resource estimation, and classification methodology.
2. Validate the mineral resource model and sensitivity analyses of the mineral resources to changes in parameters and methodologies.
3. Identify any key issues that may pose a material change in the modelled mineral resource.

Cliff Revering, P.Geo. (APEGS# 9764) visited the property on August 20th to 21st, 2018 accompanied by Dale Verran and Serdar Donmez of Denison. The data, mineral resource model, and mineral resource classification were reviewed, and the audited Mineral Resource Statement was prepared by Dr. Oy Leuangthong, PEng (PEO#90563867) and Mr. Cliff Revering, P.Eng. (APGS#9764). Mr. Glen Cole, P.Geo. (APGO #1416) was the senior reviewer of this assignment. The effective date of the audited Mineral Resource Statement is October 17, 2018.

14.3.1 Geology Model

The Huskie uranium deposit is located approximately 1 kilometre northeast of Denison's unconformity-type J Zone deposit on the Waterbury Lake Project. The deposit is a basement-hosted uranium deposit, located approximately 50 metres (vertically) below the Athabasca unconformity surface and extends to a depth of approximately 225 metres into the basement stratigraphy. The mineralization consists of moderate- to steeply-dipping stacked lenses of predominately massive to semi-massive pitchblende mineralization occurring along fault/fracture planes or along foliation. The uranium mineralization is contained within an east-west striking structural corridor (which dips to the north) and appears to be controlled by north-east striking cross-cutting faults related to the interpreted regional Midwest structure.

The Huskie deposit is comprised of three discrete lenses: Huskie 1, Huskie 2 and Huskie 3, which have a strike-length of approximately 210 metres, extend about 215 metres down-dip and range up to 30 metres in overall thickness (Figure 14-5). The mineralization occurs at vertical depths ranging between 240 and 445 metres below surface.

The geology model was constructed using lithological and structural data from core logs and geochemical assays collected from 28 holes totalling 12,273.1 metres (excluding 12 abandoned holes totalling 761 metres) completed by Denison since 2017. Similar to other basement-hosted uranium deposits in the Athabasca Basin, Denison used a threshold of 0.05% U_3O_8 with a minimum thickness of 1 metre to construct the mineralization wireframes for mineral resource estimation.

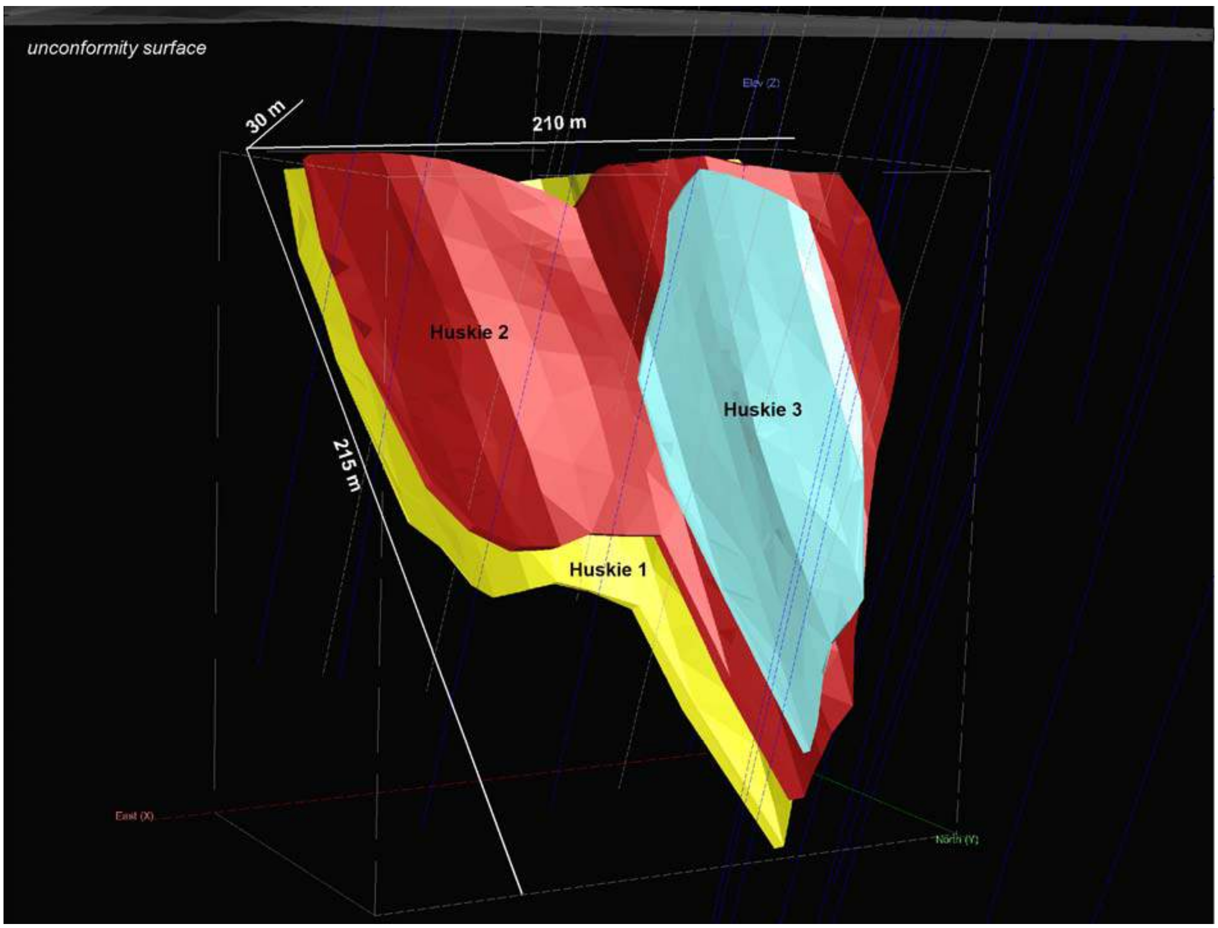


Figure 14-5: Composite Long Section of Huskie 1, Huskie 2 and Huskie 3 Zones Looking South

14.3.2 Available Database and Resource Estimation

Core recovery at Huskie is generally excellent. For mineral resource estimation purposes, wherever core recovery was poor, the radiometric equivalent uranium values ("eU_3O_8") were substituted for chemical assays where possible. For the Huskie 1, Huskie 2 and Huskie 3 zones mineral resource estimates, reported herein, 28%, 8% and 17% of the assay intervals respectively, relied on eU_3O_8 grades.

14.3.3 Density

A dry bulk density value was estimated for each grade value in the drillhole database by using the polynomial regression for Denison's comparable Gryphon deposit, which is also an Athabasca basement-hosted uranium deposit. Denison confirmed the validity of the Gryphon grade × density regression for the Huskie deposit by plotting the 12 samples collected by SRK on the Huskie deposit (Figure 14-6).

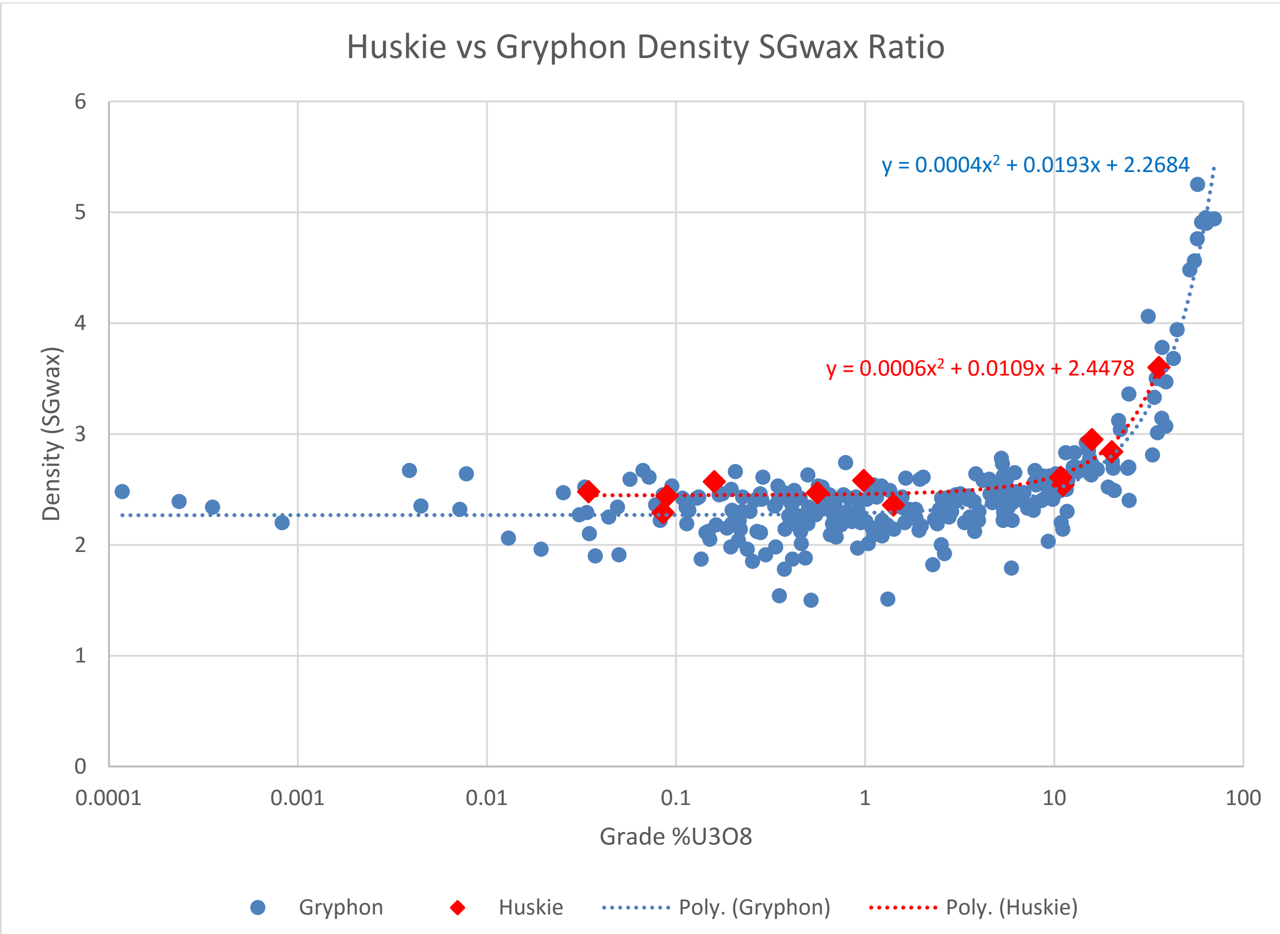


Figure 14-6: Gryphon and Huskie Deposits Grade (%U_3O_8) and Density (SGwax – g/cm3) Regression Curves

14.3.4 Estimation Methodology and Parameters

Denison constructed the mineral resource model using GEOVIA GEMS™ software (version 6.8), constrained by mineralization wireframes generated for three domains: Huskie 1, Huskie 2 and Huskie 3. The assay database used for resource modelling consists of 201 assays from 10 boreholes, contained within these three mineralized zones. Assays for % U_3O_8 were sampled at 0.5-metre intervals and composited to 1.0-metre lengths. Capping was considered, with only assay data from Huskie 2 being capped for % U_3O_8. Density values were assigned to the database based on a regression between U_3O_8 and density data pairs using the relationship determined for Denison's Gryphon deposit, which is also hosted within comparable basement rocks. Denison modelled variograms to determine appropriate search radii for grade estimation. An accumulation-like approach was used, wherein U_3O_8 *density and density were estimated into a three-dimensional block model, constrained by wireframes in two passes using inverse distance to a power of 2 (ID^2). A % U_3O_8 grade was then calculated into each block by dividing the estimated U_3O_8 *density by the estimated density. A block size of 10 by 5 by 5 metres was selected (Table 14-6). Search radii are based primarily on visual observations and variogram analyses. The estimation of U_3O_8 *density and density were based on two estimation passes using the same set of parameters (Table 14-7).

The block model was validated using nearest neighbour estimation and by visual inspection of the block grades relative to composites and swath plots comparing the ID^2 and nearest neighbour model. All blocks were classified as Inferred.

Table 14-6: Huskie Deposit Block Model Parameters

Dimensions	**X**	**Y**	**Z**
Block Size	10	5	5
Model Origin	556,701.74	6,467,610.15	280
Rotation		10	
Number of Blocks	25	29	50

Table 14-7: Huskie Deposit Block Model Interpolation Parameters.

Pass	**Search Orientation**			**Search Range (m)**			**Data Requirements**		
	Z	**X**	**Z**	**1**	**2**	**3**	**Min**	**Max**	**Max/hole**
1	0	-65	15	60	60	20	5	9	4
2	0	-65	15	120	120	40	3	15	-

14.3.5 SRK Audit Methodology and Findings

During the site visit, SRK reviewed drill core from the four high grade intersections of the Huskie deposit (i.e. drillholes WAT17-449, WAT18-452, WAT17-446A, and WAT17-450A). The geological observations made during this review were consistent with the interpretation of the mineralization controls by Denison. In addition, 12 density samples were collected from these four drillholes to validate density assumptions used for mineral resource estimation of the Huskie deposit.

Denison provided to SRK a GEMS project and drillhole data in .csv format on September 18, 2018 and October 4, 2018. SRK verified that the drillhole database consists of 28 holes (12,273.1 metres) drilled by Denison since 2017. Ten drillholes intersect the three modelled mineralized domains. The database used to estimate the mineral resources for the Huskie deposit was audited by SRK. SRK is of the opinion that the current drilling information is sufficiently reliable to confidently interpret uranium mineralization boundaries and that the assay data are sufficiently reliable to support mineral resource estimation.

SRK reviewed the accumulation approach taken by Denison to construct the internal mineral resource model and finds it to be generally consistent with that undertaken for other similar deposits.

The use of derived density values based on a regression of density on grade is not uncommon; this results in a density data set that is artificially smooth due to the addition of the regressed values. Estimation yields an outcome that is inevitably smooth, the smoothness of the estimated density is further compounded by the inclusion of regressed values as part of the informing data. The impact is an over-conservative estimation of density, with a risk associated with yielding inaccurate tonnages. At this stage of evaluation, this risk is not considered to be material.

Denison based the density-grade regression on the Gryphon deposit which comprised of 279 data pairs. Only 12 density measurements were available for the Huskie zone. These 12 pairs of density and grade samples compared well to the density-grade regression from Gryphon (see Figure 14-6). In fact, the Huskie density-grade data pairs show the potential for slightly higher densities than Gryphon; however, the Gryphon data set is considered to be more reliable. SRK finds that the use of the density-grade regression from Gryphon is an appropriate choice at this time, with the recommendation that more density measurements be collected in future drilling campaigns with the aim to validate the slight optimism found in the Huskie density-grade relationship.

Composites were capped based on probability plots, and SRK reviewed and confirmed the reasonableness of Denison's capping selection. SRK agrees that the lack of data in Huskie lenses 1 and 3 does not warrant capping and notes that these two zones represent only a small fraction of the Huskie mineral resource based on preliminary volumetrics. Figure 14-7 shows the probability plot and capping sensitivity curve for Huskie lens 2, which represents the best-informed zone and most significant volume. The red line in the probability plot corresponds to Denison's chosen cap value, which coincides with a 'break' in points in the plotted curve. SRK agrees with the capping selection of 9% U_3O_8 and notes that this impacts four composites and results in a 22% decrease in the mean % U_3O_8 grade. While this may seem significant, Huskie lens 2 is informed by 53 composites, and the potential influence of these four composites may be significant depending on the data spacing and the size of the mineralized volume.

Table 14-8 and Table 14-9 tabulate the assay and composite statistics, respectively.

Denison estimated U_3O_8 *density (GD) and density with the same estimation parameters shown in Table 14-7.

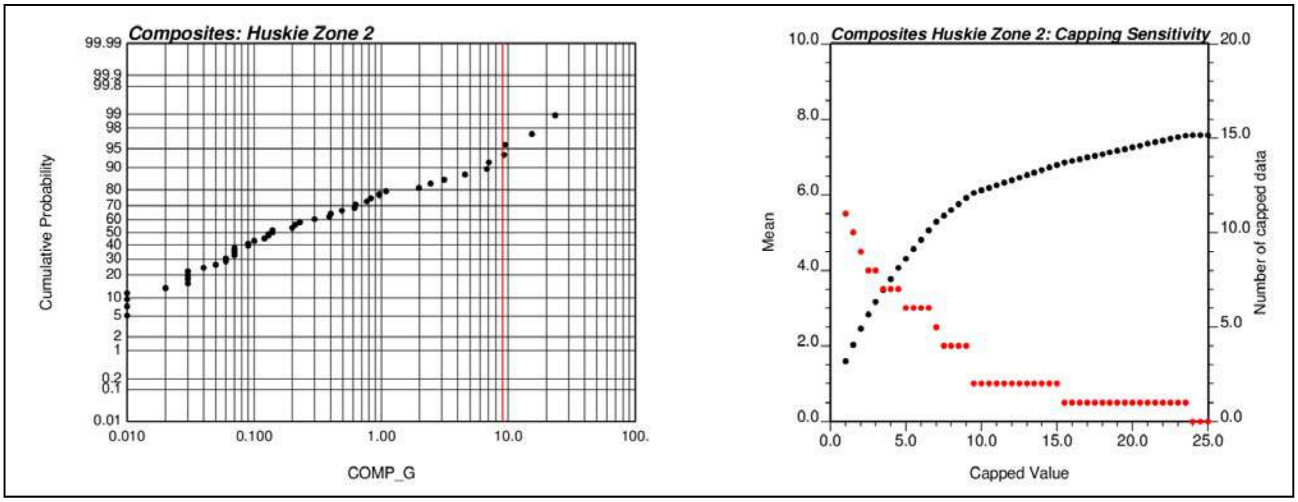


Figure 14-7: Probability Plot and Capping Sensitivity Curve for Huskie lens 2
Red line on left plot corresponds to Denison chosen cap value.

Table 14-8: Assay Statistics

Zone	Attribute	No. Samples	Mean	Std Dev	Min	Q1	Med	Q3	Max	CoV
Huskie 1	U_3O_8	39	0.36	0.57	0.00	0.05	0.18	0.36	3.19	1.60
	Density	39	2.28	0.01	2.27	2.27	2.27	2.28	2.33	0.01
	GD*	39	0.82	1.33	0.00	0.12	0.41	0.82	7.45	1.62
Huskie 2	U_3O_8	89	1.92	5.39	0.00	0.01	0.14	0.73	40.70	2.80
	Density	89	2.32	0.17	2.27	2.27	2.27	2.28	3.72	0.07
	GD*	89	5.37	17.97	0.00	0.02	0.31	1.66	151.26	3.35
Huskie 3	U_3O_8	19	0.11	0.22	0.00	0.00	0.03	0.12	0.96	1.96
	Density	19	2.27	0.00	2.27	2.27	2.27	2.27	2.29	0.00
	GD*	19	0.25	0.49	0.00	0.01	0.07	0.27	2.20	1.96

*GD=grade*density

Table 14-9: Statistics for Composites and Capped Composites

Zone	Attribute	No. Samples	Mean	Std Dev	Min	Q1	Med	Q3	Max	CoV
Huskie 1	U_3O_8	32	0.27	0.40	0.00	0.02	0.16	0.25	1.77	1.49
	Density	32	2.27	0.01	2.26	2.27	2.27	2.27	2.30	0.00
	GD*	32	0.61	0.92	0.00	0.05	0.35	0.57	4.12	1.51
Huskie 2	U_3O_8	53	1.79	4.22	0.00	0.04	0.14	0.83	23.54	2.36
	Density	53	2.32	0.13	2.26	2.27	2.27	2.28	3.06	0.06
	GD*	53	4.99	13.55	0.00	0.10	0.31	1.91	83.48	2.72
	Capped U_3O_8	53	1.40	2.66	0.00	0.04	0.14	0.83	9.00	1.90
	Capped Density	53	2.30	0.06	2.26	2.27	2.27	2.28	2.47	0.03
	Capped GD*	53	3.43	6.64	0.00	0.10	0.31	1.91	22.27	1.93
Huskie 3	U_3O_8	14	0.12	0.14	0.00	0.02	0.06	0.15	0.51	1.19
	Density	14	2.27	0.00	2.26	2.27	2.27	2.27	2.28	0.00
	GD*	14	0.26	0.31	0.00	0.05	0.15	0.34	1.17	1.19

*GD=grade*density

SRK reviewed search ellipsoid orientation and geometry used in the estimation for each domain and found it to be reasonably oriented. Further, SRK calculated the variogram for Huskie 2, and as expected, found this to be challenging given that only 53 composites are available. The range used by Denison for the first pass is overall consistent with the spacing of the drillhole data as it pierces the mineralized lenses, with the third axis inflated to overcome any undulations in the modelled wireframe. SRK visually reviewed the estimated block grades against nearby informing data and found that the estimated blocks generally compare well to the nearby data.

To assess the sensitivity of the estimated model to slight changes in estimation parameters, SRK proposed a series of alternate estimation parameters (Table 14-10) and re-estimated only Huskie lens 2 for comparison. The grade, tonnage and contained pounds of U_3O_8 for these sensitivity cases were compared to the base case (Denison estimate) at various cut-off grades. Figure 14-8 shows the percentage difference in contained pounds of U_3O_8 for these cases relative to the base case. Except for Cases 1 and 2, all other cases show that slight variations in the minimum number of data and/or the maximum number of samples per hole have minimal impact on contained pounds of U_3O_8 and are within 3 percent of Denison's estimate.

Table 14-10: Description of Estimation Sensitivity Cases

Case No.	Sensitivity Case	Description*
0	Denison ID2	Exported model from Denison
1	SRK min4, max9, mph3	P1: 4/9, mph=3
2	SRK min5, max9, mph3	P1: 5/9, mph=3; no change to P2
3	SRK min6, max9, mph5	P1: 6/9, mph=5; no change to P2
4	SRK min5, max9, mph5	P1: 5/9, mph=5; no change to P2

*mph = maximum samples per hole

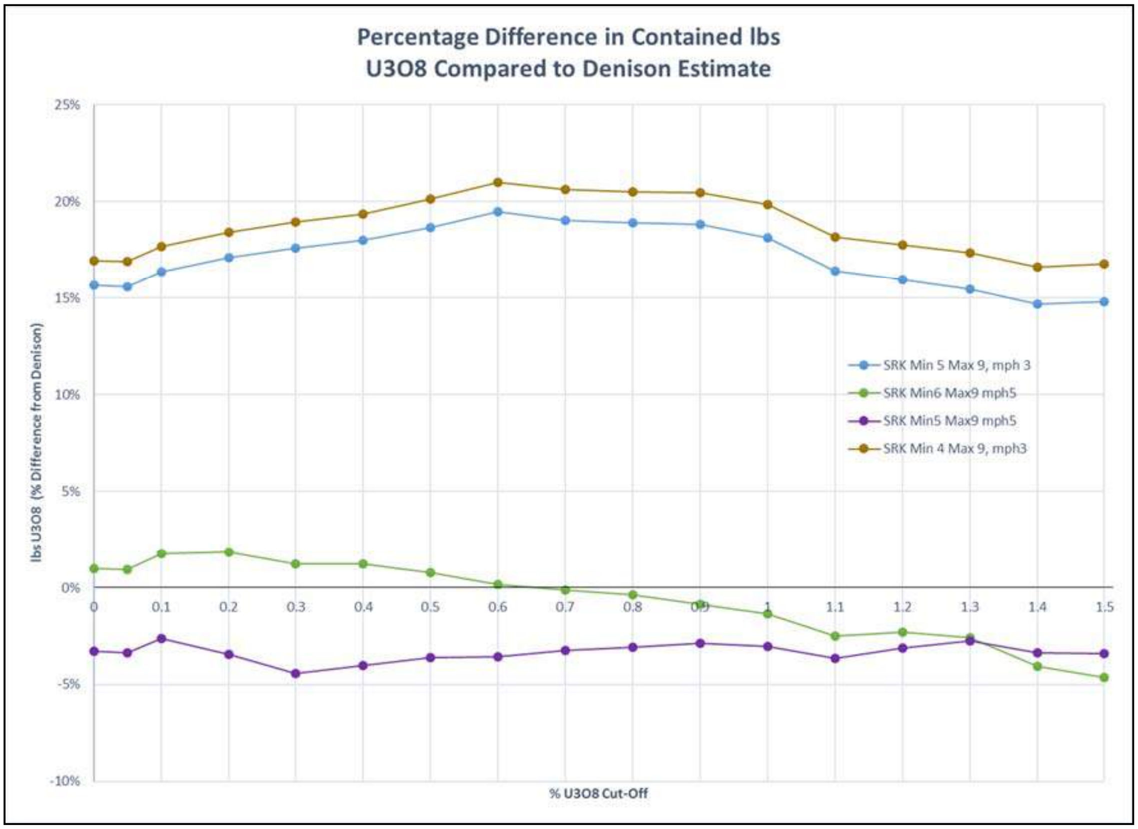


Figure 14-8: Sensitivity of Percentage Difference in Contained Pounds of $U_3O_8$to Estimation Parameters

Reducing the maximum number of samples per hole to three has a significant impact, with up to 16 percent more contained lbs U_3O_8 at zero cut-off grade (Figure 14-8). SRK visually inspected the region most impacted by this parameter, and found a central area in Huskie 2 where there are four samples from one hole intersecting the zone. The configuration of the data consists of two interior capped high grade composites flanked by two lower grade composites. The specification of three composites per hole means that the influence of both higher grade composites is only ever dampened by one of the adjacent lower grade composites, leading to a consistent overestimation in this central area. Given the drillhole spacing, this impact has a nominal radial distance of up to 50 metres.

Slight changes to search orientation were also assessed and found to have no material impact on grade or pounds of U_3O_8.

Finally, SRK generated a swathplot to compare the grade profile of (Figure 14-9) according to the following steps:

1. Estimated model constructed by Denison using the accumulation approach.
2. Created Sensitivity model using the accumulation approach for different data requirements, specifically focussed on maximum per hole parameter of 3 and 5.
3. Used Nearest neighbour model on a 1-metre by 1-metre by 1-metre grid.

In the main Huskie 2 volume (up to a depth of approximately 130 metres), the swathplot shows three different trends: (1) the models based on a maximum of three samples per hole consistently yield higher grade profiles, (2) the models with a maximum of four (i.e. Denison model) or five samples per hole have comparable grade profiles, and (3) the nearest neighbor model is consistently lower than all models in this same area. The nearest neighbor grade profile is similar to a swathplot generated by Denison as part of the data package received by SRK.

As this is the initial mineral resource model for the Huskie deposit, and informed by data from 12 boreholes, SRK agrees with Denison's classification of the estimated blocks as Inferred blocks. The cut-off grade of 0.1% U_3O_8 is reasonable, and consistent with similar deposits in the region, including the property's J Zone deposit.

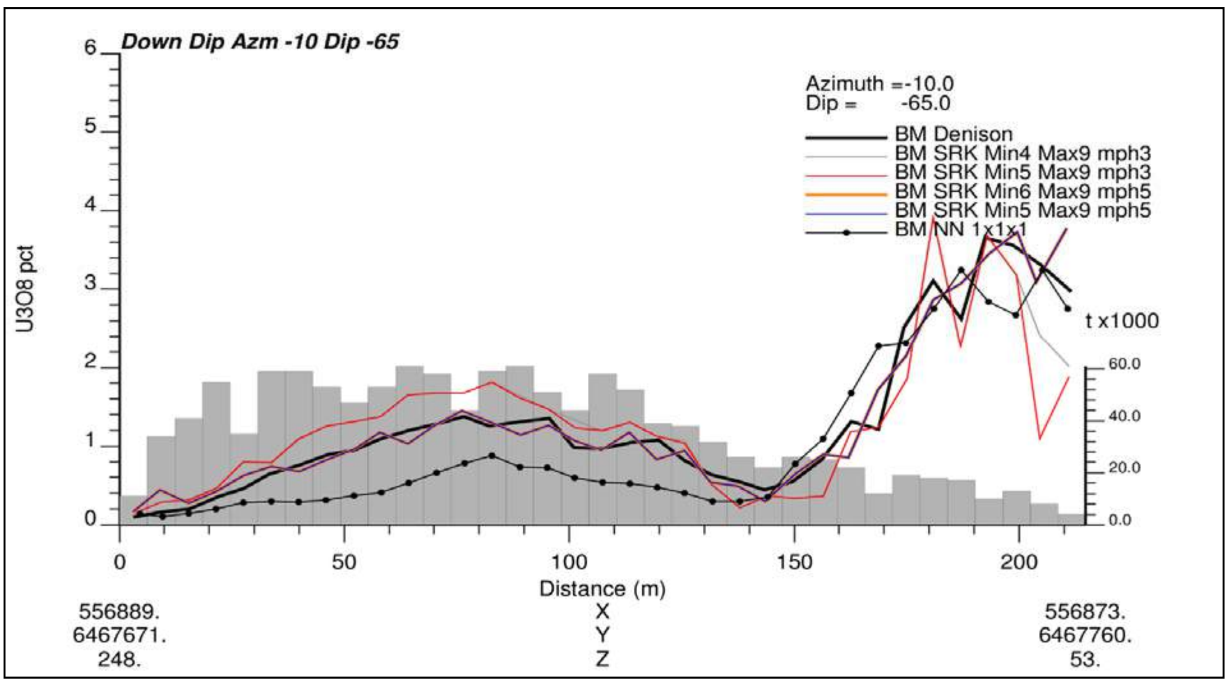


Figure 14-9: Swathplot Comparing U_3O_8 Grades from Estimated Models for Huskie lens 2, Oriented Down Dip. Histogram represents model tonnage.

14.3.6 Audited Mineral Resource Statement

CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014) define a Mineral Resource as:

"[A] concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling."

The "reasonable prospects for eventual economic extraction" requirement generally implies that quantity and grade estimates meet certain economic thresholds and that mineral resources are reported at an appropriate cut-off grade that takes into account extraction scenarios and processing recovery. Denison considers that a cut-off of 0.10% U_3O_8 is appropriate for mineral resource reporting. SRK finds this cut-off grade to be reasonable and comparable to other Denison projects and other nearby uranium projects in the Athabasca basin.

SRK is satisfied that the mineral resources were estimated in conformity with the widely accepted CIM Estimation of Mineral Resource and Mineral Reserve Best Practices Guidelines. The mineral resources may be affected by further infill and exploration drilling that may result in increases or decreases in subsequent mineral resource estimates. The mineral resources may also be affected by subsequent assessments of mining, environmental, processing, permitting, taxation, socio-economic, and other factors. The audited Mineral Resource Statement for the Huskie deposit in the Waterbury Lake Uranium Project presented in Table 14-11 was prepared by Dr. Oy Leuangthong, PEng (PEO#90563867) and Mr. Cliff Revering (APGS#9764). Dr. Leuangthong and Mr. Revering are independent qualified persons as this term is defined in National Instrument 43-101. The effective date of the audited Mineral Resource Statement is October 17, 2018.

Table 14-11: Audited Mineral Resource Statement*, Huskie Deposit, Waterbury Lake Uranium Project, Saskatchewan, SRK Consulting (Canada) Inc., October 17, 2018

Category	Zone	Tonnage (kt)	Grade (%U_3O_8)	Contained Metal (x1000 lbs. U_3O_8)
Inferred	Huskie 1	81	0.34	612
	Huskie 2	178	1.28	5,047
	Huskie 2	8	0.15	27
Total Inferred		268	0.96	5,687

* Mineral resources are not mineral reserves and have not demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates. Reported at mineral resource cut-off grade of 0.10% U_3O_8 and at a uranium price of US$45 per pound U_3O_8.

15 MINERAL RESERVE ESTIMATE

No pre-feasibility or feasibility studies have yet been completed to allow conversion of the mineral resources to mineral reserves. Consequently, no mineral reserves exist for the Waterbury Lake property at the present time.

ITEMS 16 TO 22

Important note relating to Items 16 to 22 of the requirements for Technical Reports in accordance with NI 43-101 Standards of Disclosure for Mineral Projects, Form 43-101F.

The J Zone and Huskie deposits are not part of an advanced property at this time. In this regard Mining Methods (Item 16), Recovery Methods (Item 17), Project Infrastructure (Item 18), Market Studies and Contracts (Item 19), Environmental Studies, Permitting, Social and Community Impact (Item 20), Capital and Operating Costs (Item 21) and Economic Analysis (Item 22) are either not applicable to this report or have not yet been determined.

23 ADJACENT PROPERTIES

23.1 Roughrider Property (formerly Midwest NorthEast)

Adjacent to the east end of the J Zone deposit, is the Roughrider uranium deposit located on the Roughrider property comprising three contiguous mineral leases (598 ha) that was registered to Hathor Exploration Limited (90%) and Terra Ventures Inc. (10%), and now under the sole ownership of Rio Tinto PLC.

Crown mineral lease ML-5544 hosts the Roughrider East Zone, West Zone, and Far East Zone. A technical report in accordance with NI 43-101, titled "*Preliminary Economic Assessment Technical Report for the East and West Zones Roughrider Uranium Project, Saskatchewan*" was prepared by SRK Consulting for Hathor Exploration Ltd. in 2011. Mineral resources estimated for the East and West Zones include an Indicated mineral resource estimate of 17,207,000 lbs U_3O_8 (above a cut-off grade of 0.05% U_3O_8) based on 394,200 tonnes of mineralization at an average grade of 1.98% U_3O_8 and an Inferred mineral resource estimate of 10,602,000 lbs U_3O_8 (above a cut-off grade of 0.05% U_3O_8) based on 43,600 tonnes of mineralization at an average grade of 11.03% U_3O_8 for the Roughrider West Zone, and an Inferred mineral resource estimate of 30,130,000 lbs U_3O_8 (above a cut-off grade of 0.4% U_3O_8) based on 118,000 tonnes of mineralization at an average grade of 11.58% U_3O_8 for the Roughrider East Zone. The mineral resource estimates have effective dates of November 29, 2010 for the Roughrider West Zone and May 6, 2011 for the Roughrider East Zone. The authors of this technical report are unable to verify the information disclosed in the aforementioned mineral resource estimates and the information is not necessarily indicative of the mineralization on the Waterbury Lake property. There are currently no publically disclosed mineral resource estimates for the Far East Zone.

The Roughrider West Zone was discovered during the winter drilling program of February 2008 (Doerksen, et al., 2011). A hydrothermal clay alteration system was intersected in drillhole MWNE-08-10, while high-grade uranium mineralization (5.29% uranium oxide ("U_3O_8") over a core length interval of 11.9 m) was intersected in drillhole MWNE-08-12. The Roughrider West Zone is defined by approximately 149 diamond drillholes, and has been intersected along a northeast-southwest strike length of approximately 200 m with an across-strike extent of 100 m. Uranium mineralization occurs at depths of 190 m to 290 m below surface and is hosted predominantly within basement rocks. Only minor amounts of uranium occur at or above the unconformity.

The Roughrider East Zone was discovered during the summer drilling program in September 2009 (Doerksen, et al., 2011). Hydrothermal alteration was intersected in a number of earlier drillholes during the summer program. High-grade uranium mineralization (12.71% U_3O_8 over a core length interval of twenty-eight metres) was intersected subsequently in drillhole MWNE-10-170. This zone was delineated by drilling during the winter and summer of 2010.

The best intersection to date was obtained in drillhole MWNE-10-648, which intersected 7.75% U_3O_8 over a core length interval of 63.5 m. The Roughrider East Zone is currently defined by approximately 88 diamond drillholes (21 of which were used to evaluate the mineral resource), and has a surface projection of approximately 120 m long in a north-easterly direction, which corresponds to a down-dip length of approximately 125 m, and an across-strike extent of up to 70 m. Uranium mineralization has a vertical extent of up to eighty to 100 m, starting at depth approximately 250 m from surface, and some 30 m to 50 m below the unconformity. This is slightly deeper than the Roughrider West Zone. Mineralization forms moderately dipping, cigar-shaped shoots along the intersection of these two controlling structures.

A third zone, the Roughrider Far East Zone, was discovered during the winter drilling program in February 2011 (Doerksen, et al., 2011). The discovery drillhole intersected 1.57 % U_3O_8 over core length of 37.5 m. The current outline of the Far East Zone is defined by mineralization in 28 of 40 drillholes completed in the immediate vicinity of Roughrider Far East Zone; weak mineralization in other drillholes is not included in the current outline of the Far East Zone. The best intersection to date is drillhole MWNE-11-715, which intersected 7.91% U_3O_8 over a core length interval of 27.0 m.

23.2 Midwest Property

The Midwest property is located adjacent to the main claim group of the Waterbury Lake property and the non-contiguous Waterbury Lake property claim S-107367 (near South McMahon Lake) approximately 15 kilometres from the McClean Lake mill. The Midwest property is host to the high-grade Midwest Main and Midwest A uranium deposits which lie along strike and within six kilometres of the J Zone and Huskie deposits. The project is a joint venture owned 25.17% by Denison; 69.16% by Orano Canada Inc., ("Orano"); and 5.67% by OURD (Canada) Ltd. ("OURD"). Orano is the project operator.

In November 2017, Orano completed an updated mineral resource estimate for the Midwest Main and Midwest A deposits in accordance with NI 43-101, which was subsequently reviewed and audited by SRK Consulting (Canada) Inc. ("SRK") on behalf of Denison. The Midwest project, including the Midwest Main and Midwest A deposits is estimated to contain, above a cut-off grade of 0.1% U_3O_8, Inferred Mineral Resources of 18.2 M lbs U_3O_8 (846,000 tonnes at an average grade of 1.0% U_3O_8) and Indicated Mineral Resources of 50.78 M lbs U_3O_8 (1,019,000 tonnes at an average grade of 2.3% U_3O_8). The updated mineral resource estimate, as audited by SRK, is disclosed in the NI 43-101 report entitled "Technical Report with an updated Mineral Resource Estimate for the Midwest Property, Northern Saskatchewan, Canada" dated March 26, 2018, a copy of which is filed on SEDAR (www.sedar.com). Not all of the authors of this technical report are able to verify the information disclosed in the aforementioned mineral resource estimate and the information is not necessarily indicative of the mineralization on the Waterbury Lake property.

The uranium mineralization at the Midwest Main deposit consists of a higher-grade Unconformity Zone at the sandstone-basement contact (unconformity). Additional mineralization was defined in a zone of lower grade fracture-controlled basement mineralization associated with moderate to intense clay alteration and in 19 Perched Zones in the weakly to moderately altered sandstone above the Unconformity Zone. The mineralization is approximately 920 metres long, 10 to 140 metres wide, and up to 33 metres in thickness, not including the basement roots which have been modeled to extend approximately an additional 90 metres into the basement. The bulk of the mineralization (Unconformity Zone) occurs at depths ranging between 170 and 205 metres below surface. Perched mineralization occurs as discrete zones located above the unconformity lens and up to 100 metres above the unconformity below surface. The 3D interpretation was based on a cut-off of greater than or equivalent to 0.05% U over a two metre interval. The mineral resource was estimated using ordinary kriging (Unconformity Zone) and inverse distance squared (Perched and Basement Zones) interpolation methods with restrictions on the influence of higher grade samples. At the 0.085% U (0.1% U_3O_8) cut-off, the Midwest Main deposit contains an Indicated resource of 453,000 tonnes grading 4.00% U_3O_8 and an Inferred resource of 793,000 tonnes grading 0.66% U_3O_8 (Sorba, et al., 2018).

The mineralization at the Midwest A uranium deposit consists of a high-grade mineralized core (High Grade Zone) in the sandstone at the unconformity, which is surrounded by the Low Grade Zone, a more dispersed, fracture-controlled mineralization in both sandstone and basement rocks. The high-grade mineralization forms a fairly steeply-dipping lensoid concentration which is enclosed within a lower grade envelope. The mineralization currently has dimensions of 450 metres in length and 10 to 60 metres in width and ranges up to 70 metres in thickness. It occurs at depths ranging between 150 and 235 metres below surface. At the 0.085% U (0.1% U_3O_8) cut-off, the Midwest A deposit contains an Indicated resource of 566,000 tonnes grading 0.87% U_3O_8 and an Inferred resource of 53,000 tonnes grading 5.81% U_3O_8 (Sorba, et al., 2018).

24 OTHER RELEVANT DATA AND INFORMATION

There is no other relevant data or information available that is necessary to make the technical report understandable and not misleading. To the relevant Qualified Persons knowledge, there are no significant risks and uncertainties that could reasonably be expected to affect the reliability or confidence in the exploration information or mineral resource.

25 INTERPRETATION AND CONCLUSIONS

25.1 J Zone

The J Zone uranium deposit was discovered during the winter 2010 drill program at Waterbury Lake. The J Zone deposit is currently defined by 268 drill holes intersecting uranium mineralization over a combined east-west strike length of up to 700 metres and a maximum north-south lateral width of 70 metres. The deposit trends roughly east-west (080°) in line with the metasedimentary corridor and cataclastic graphitic fault zone. A 45 metre east-west intermittently mineralized zone occurs in the target area formerly known as Highland roughly separating the J Zone into two segments referred to as the eastern and western lenses which are defined over east-west strike lengths of 260 and 318 metres, respectively. A thin zone of unconformity uranium mineralization occurs to the north of intermittently mineralized zone which is interpreted to represent a mineralized block that has been displaced northwards by faulting and is referred to as the mid lens.

Mineralization thickness varies widely throughout the J Zone and can range from tens of centimetres to over 19.5 metres in vertical thickness. In cross section, J Zone mineralization is roughly trough shaped with a relatively thick central zone that corresponds with the interpreted location of the cataclasite and rapidly tapers out to the north and south.

Uranium mineralization is generally found within several metres of the unconformity at depth ranges of 195 to 230m below surface. It variably occurs entirely hosted within the Athabasca sediments, entirely within the metasedimentary gneisses or straddling the boundary between them. A semi-continuous, thin zone of uranium mineralization has been intersected in occasional southern J Zone drill holes well below the main mineralized zone, separated by several meters of barren metasedimentary gneiss.

The J Zone deposit is generally flat lying (located roughly 200m below the surface of McMahon Lake) and therefore whenever possible holes have been drilled vertically in order to intersect the ore lenses perpendicularly, thereby giving an approximate true thickness.

The J Zone contains an indicated resource of 12,810,000 lbs based on 291,000 tonnes at an average grade of 2.00% U_3O_8.

25.2 Huskie

The Huskie Zone was discovered the summer 2017 drill program at Waterbury Lake. The Huskie Zone is currently defined by 28 drill holes. The mineralized zone defined to date occurs between 50 and 225 metres vertically below the sub-Athabasca unconformity (265 and 435 metres vertically below surface) and measures approximately 250 metres along strike, up to 170 metres along dip, with individual lenses varying in interpreted true thickness between approximately 2 and 7 metres. The mineralized zone is hosted primarily within faulted graphite-bearing pelitic gneisses which forms part of an east-west striking, northerly dipping package of metasedimentary rocks flanked to the north and south by granitic gneisses. The Athabasca Group sandstones that unconformably overly the basement rocks in the area of the Huskie Zone are approximately 210 metres thick.

Interpretation indicates the mineralization occurs as parallel, stacked lenses, which are conformable to the foliation and fault planes within the graphitic gneiss. The location of the mineralized lenses and their strike extent in the east-west direction appears to be controlled by cross-cutting, northeast striking faults. These faults are interpreted to be part of the regional Midwest structure and indicate the potential for additional high-grade basement-hosted mineralization in a northeast orientation.

The high-grade mineralization is comprised of massive to semi-massive uraninite (pitchblende) and subordinate bright yellow secondary uranium minerals occurring along fault or fracture planes, or as replacement along foliation planes. Disseminations of lower grade mineralization occur within highly altered rocks proximal to fault planes. The mineralization is intimately associated with hematite, which both occur central to a broad and pervasive alteration envelope of white clays, chlorite and silicification.

The Huskie Zone contains an inferred resource of 5,687,000 lbs U_3O_8 based on 268,000 tonnes at an average grade of 0.96% U_3O_8.

26 RECOMMENDATIONS

The discovery of the J Zone and Huskie deposits indicate the Waterbury Lake Property is a highly prospective property with the potential to host additional unconformity-related deposits. Continued exploration drilling is highly recommended in target areas which are under- or unexplored with respect to the geological models defined for the J Zone deposit (unconformity-hosted) and Huskie deposit (basement-hosted). Currently defined target areas include those associated with the newly interpreted regional Midwest Structure.

Further regional exploration, outside of the interpreted regional Midwest Structure, is also warranted in future years given the significant size of the property and the numerous favorable geological trends identified to date. A multi-staged exploration approach is recommended, including ground geophysical surveys followed by drilling, to fully evaluate the property's potential.

26.1 J Zone

Armitage & Sexton (2013) recommended the J Zone deposit should be examined at a conceptual level to determine the viability of a uranium deposit in this area. On September 24, 2018, Denison released the results of the Pre-feasibility Study ("PFS") for its flagship Wheeler River uranium project in northern Saskatchewan. The PFS was completed in accordance with NI 43-101 and is highlighted by the selection of the in-situ recovery ("ISR") mining method for the development of the unconformity-hosted Phoenix deposit, with highly attractive operating costs and low initial pre-production capital costs. The complete technical report titled "Pre-feasibility Study for the Wheeler River Uranium Project, Saskatchewan, Canada", with an effective date of September 24, 2018, supporting the disclosure of the PFS results was made available on Denison's website as well as SEDAR and EDGAR on October 30, 2018. Considering the J Zone is also an unconformity-hosted uranium deposit, Denison recommends an initial high-level evaluation of the ISR mining method for the J Zone deposit. Denison does not recommend any further drilling at the J Zone at this time.

26.2 Huskie

The Huskie deposit further highlights the potential for unconformity-related uranium mineralization to exist along the newly interpreted regional Midwest Structure where it cross-cuts metasedimentary corridors. It is recommended that further exploration activities take place along the Midwest Structure where it cross-cuts favourable geologic trends, particularly the Oban trend and the GB trend. Further exploration is also warranted southwest of the Midwest Property claims to determine whether the structure crosses over onto the Waterbury Lake Project claims. A DCIP resistivity survey was completed in this area in the fall of 2018 to define drill targets.

Given the current condition of the uranium market, Denison does not recommend further drilling to upgrade the Huskie mineral resources from the Inferred to Indicated category.

26.3 Work Program and Budget for 2019

An exploration program is recommended for 2019 on the Waterbury Lake Project with a budget of between $1,600,000 and $2,000,000. A diamond drilling program is envisaged to follow-up on high priority target areas associated with the newly interpreted regional Midwest Structure, particularly including the GB Trend, Oban Trend and Midwest Extension. Within the Midwest Extension area, to the southwest of the Midwest deposits, drill targets are currently being defined from a recently completed DCIP resistivity survey to the southwest of the Midwest deposits. Additional target areas include GB Northeast (electromagnetic target) and Waterbury East claim (follow-up of a weak historic mineralized intersection). It is recommended the drilling program include 7,000 to 8,000 metres of diamond drilling in 16 to 20 drill holes. Target area locations are provided in Figure 1-1. Further work in 2020 or beyond will be contingent on the results of the recommended 2019 drilling program.

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28 CERTIFICATES OF QUALIFIED PERSONS

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CERTIFICATE OF QUALIFIED PERSON

To accompany the report entitled: Technical Report with an Updated Mineral Resource Estimate for the Waterbury Lake Property, Northern Saskatchewan, Canada, dated December 21, 2018.

I, Serdar Donmez, do hereby certify that:

1) I am a Data Manager and Resource Geologist with Denison Mines Corp. (Denison) with a business address at 230 – 22nd Street East, Suite 200, Saskatoon, Saskatchewan, Canada.
2) I am a graduate of University of Cukurova, Turkey, where I obtained a BSc. Degree in Geological Engineering. I have practiced my profession continuously since 2007. My experience is in the areas of mineral exploration, geology and mineral resource estimation.
3) I am a Professional Geologist registered with the Association of Professional Geologists of Saskatchewan, License No. 14900.
4) I have read the definition of qualified person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of National Instrument 43-101 and this technical report has been prepared in accordance with National Instrument 43-101 and Form 43-101F1.
5) As an employee of Denison, I am not independent of the issuer as defined in Section 1.5 of National Instrument 43-101. Independence is not required pursuant to Section 5.3(1)(c) of National Instrument 43-101.
6) I am an author of this report and responsible for sections 10.1.2, 11.1.2, 12.2, 13.2 and 14.1, and co-authored sections 1.1, 1.2.6, 10.2, 10.3, 10.4.2, 10.5.1, 10.5.3, 10.6, 10.7.2, 10.8.2, 11.2, 11.3.1, 11.3.2, 11.3.3, 11.3.4, 11.3.5, 11.3.6.2, 11.4, 12.3, 23, 25.2 and 26.2 and accept professional responsibility for these sections of this technical report.
7) I have personally inspected the subject project on August 20th and 21st, 2018.
8) Aside from my role as an employee of Denison, I have had no prior involvement with the subject property.
9) I have read National Instrument 43-101 and confirm that this technical report has been prepared in accordance therewith;
10) As of the effective date of the technical report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

	["signed and sealed"]
Saskatoon, Saskatchewan	Serdar Donmez, BSc, P.Geo., E.I.T.
December 21, 2018	Data Manager and Resource Geologist, Denison Mines Corp.

CERTIFICATE OF QUALIFIED PERSON

To accompany the report entitled: Technical Report with an Updated Mineral Resource Estimate for the Waterbury Lake Property, Northern Saskatchewan, Canada, dated December 21, 2018.

I, Dale Verran, do hereby certify that:

1) I am Vice President, Exploration with Denison Mines Corp. (Denison) with a business address at 230 – 22nd Street East, Suite 200, Saskatoon, Saskatchewan, Canada.
2) I am a graduate of University of Cape Town (1996) and Rhodes University (2007) where I obtained a BSc Honours and MSc degree respectively. I have practiced my profession continuously since 1999. My experience is in the areas of mineral exploration, geology and geochemistry.
3) I am a professional geoscientist registered with the Association of Professional Engineers and Geoscientists of Saskatchewan - APEGS License No.: 34575.
4) I have read the definition of qualified person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of National Instrument 43-101 and this technical report has been prepared in accordance with National Instrument 43-101 and Form 43-101F1.
5) As an officer of Denison, I am not independent of the issuer as defined in Section 1.5 of National Instrument 43-101. Independence is not required pursuant to Section 5.3(1)(c) of National Instrument 43-101.
6) I am an author of this report and responsible for sections 4.2, 4.3, 4.4, 4.5, 15 to 22 and 24, and co-authored sections 1.1, 1.2.6, 1.2.7, 23, 25.2, 26.1 and 26.2 and accept professional responsibility for these sections of this technical report.
7) I have personally inspected the subject project on August 20th and 21st, 2018.
8) Aside from my role as an officer of Denison, I have had no prior involvement with the subject property.
9) I have read National Instrument 43-101 and confirm that this technical report has been prepared in accordance therewith;
10) As of the effective date of the technical report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

	["signed and sealed"]
Saskatoon, Saskatchewan	Dale Verran, MSc., P.Geo, Pr.Sci.Nat
December 21, 2018	Vice President Exploration, Denison Mines Corp.

CERTIFICATE OF QUALIFIED PERSON

To accompany the report entitled: Technical Report with an Updated Mineral Resource Estimate for the Waterbury Lake Property, Northern Saskatchewan, Canada, dated December 21, 2018.

I, Paul Burry, do hereby certify that:

1) I am a Senior Project Geologist with Denison Mines Corp. (Denison) with a business address at 230 – 22nd Street East, Suite 200, Saskatoon, Saskatchewan, Canada.
2) I am a graduate of the University of Saskatchewan (2003) where I obtained a B.Sc. in Geography and obtained an Advanced Certificate in Science in Geology (2007). I have practiced my profession continuously since 2007. My experience is in the areas of mineral exploration and geology.
3) I am a professional geoscientist registered with the Association of Professional Engineers and Geoscientists of Saskatchewan - APEGS License No.: 15000.
4) I have read the definition of qualified person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of National Instrument 43-101 and this technical report has been prepared in accordance with National Instrument 43-101 and Form 43-101F1.
5) As an employee of Denison, I am not independent of the issuer as defined in Section 1.5 of National Instrument 43-101. Independence is not required pursuant to Section 5.3(1)(c) of National Instrument 43-101.
6) I am an author of this report and responsible for sections 1.2.1, 1.2.3, 1.2.4, 4.1, 4.6, 4.7, 4.8, 5, 6.1, 6.2, 6.3.2, 7, 8, 9 and 10.9, and co-authored sections 1.2.6, 1.2.7, 10.2, 10.3, 10.4.2, 10.5.1, 10.5.3, 10.6, 10.7.2, 10.8.2, 11.3.6.2, 25.2, 26.1 and 26.2, and accept professional responsibility for these sections of this technical report.
7) I have personally inspected the subject project on August 20th and 21st, 2018.
8) Aside from my role as an employee of Denison, I have had no prior involvement with the subject property.
9) I have read National Instrument 43-101 and confirm that this technical report has been prepared in accordance therewith;
10) As of the effective date of the technical report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

	["signed and sealed"]
Saskatoon, Saskatchewan	Paul Burry, P.Geo, B.Sc., A.C.Sc.
December 21, 2018	Senior Project Geologist, Denison Mines Corp.

CERTIFICATE OF QUALIFIED PERSON

To accompany the report entitled: Technical Report with an Updated Mineral Resource Estimate for the Waterbury Lake Property, Northern Saskatchewan, Canada, with an effective date of December 21, 2018.

I, Oy Leuangthong, do hereby certify that:

1) I am a Principal Consultant (Geostatistics) with the firm of SRK Consulting (Canada) Inc. (SRK) with a business address at Suite 1500, 155 University Avenue, Toronto, Ontario, Canada.
2) I am a graduate of the University of Toronto in 1998 with B.A.Sc. (Honours) in Civil Engineering. I am a graduate of the University of Alberta in 2003 with a PhD in Mining Engineering (Geostatistics). My relevant experience includes research in resource modelling and geostatistics, teaching activities in mine planning, resource estimation and advanced geostatistics, and since 2010, geostatistical support and modelling for exploration projects in precious metals, base metals and uranium in the Americas, Australia, and West Africa.
3) I am a professional Engineer registered with the Professional Engineers Ontario (PEO#90563867).
4) I have read the definition of qualified person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of National Instrument 43-101.
5) I am independent of Denison Mines Corp. as defined in Section 1.5 of National Instrument 43-101.
6) I am an author of this report and responsible for sections 1.1, 1.2.5.2 and 14.3, and accept professional responsibility for these sections of this technical report.
7) SRK Consulting (Canada) Inc. was retained by Denison Mines Corp. to conduct a mineral resource audit of updated mineral resource models for the Waterbury Lake Property which was completed by Denison Mines Corp. Our audit was completed using CIM *Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines* and National Instrument 43-101 guidelines. The contribution to the report is based on a site visit, a review of project files and discussions with Denison Mines Corp. personnel.
8) I have not personally inspected the subject property.
9) I have had no prior involvement with the subject property.
10) I have read National Instrument 43-101, Form 43-101F1 and confirm that this technical report has been prepared in accordance therewith.
11) As at the effective date of the technical report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

["signed and sealed"]

Toronto, Ontario
December 21, 2018

Oy Leuangthong, PhD, PEng (PEO#90563867)
Principal Consultant (Geostatistics)

CERTIFICATE OF QUALIFIED PERSON

To accompany the report entitled: Technical Report with an Updated Mineral Resource Estimate for the Waterbury Lake Property, Northern Saskatchewan, Canada, with an effective date of December 21, 2018.

I, Cliff Revering, do hereby certify that:

1) I am a Principal Consultant (Geological Engineering) with the firm of SRK Consulting (Canada) Inc. (SRK) with a business address at Suite 205, 2100 Airport Drive, Saskatoon, Saskatchewan, Canada.
2) I am a graduate of the University of Saskatchewan in 1995 with B.E. in Geological Engineering and completed a Citation in Applied Geostatistics from the University of Alberta. My relevant experience includes more than 23 years employment in the mining industry, related to exploration, mine operations and project evaluations, with a specialization in geological modelling, mineral resource and reserve estimation, production reconciliation, grade control, exploration and production geology and mine planning.
3) I am a professional Engineer registered with the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS#9764).
4) I have read the definition of qualified person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of National Instrument 43-101.
5) I am independent of Denison Mines Corp. as defined in Section 1.5 of National Instrument 43-101.
6) I am an author of this report and responsible for sections 1.1, 1.2.5.2 and 14.3, and accept professional responsibility for these sections of this technical report.
7) SRK Consulting (Canada) Inc. was retained by Denison Mines Corp. to conduct a mineral resource audit of updated mineral resource models for the Waterbury Lake Property which was completed by Denison Mines Corp. Our audit was completed using CIM *Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines* and National Instrument 43-101 guidelines. The contribution to the report is based on a site visit, a review of project files and discussions with Denison Mines Corp. personnel.
8) I personally inspected the subject property on August 20 to 21, 2018.
9) I have had no prior involvement with the subject property.
10) I have read National Instrument 43-101, Form 43-101F1 and confirm that this technical report has been prepared in accordance therewith.
11) As at the effective date of the technical report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

	["signed and sealed"]
Saskatoon, Saskatchewan	Cliff Revering, PEng, CPAG, BE.
December 21, 2018	Principal Consultant (Geological Engineering)

CERTIFICATE OF QUALIFIED PERSON

To accompany the report entitled: Technical Report with an Updated Mineral Resource Estimate for the Waterbury Lake Property, Northern Saskatchewan, Canada, with an effective date of December 21, 2018.

I, Allan E. Armitage, Ph. D., P. Geol. of 62 River Front Way, Fredericton, New Brunswick, hereby certify that:

1. I am a Senior Resource Geologist with SGS Canada Inc., 10 de la Seigneurie E blvd., Unit 203 Blainville, QC, Canada, J7C 3V5 (www.geostat.com).
2. I am a graduate of Acadia University having obtained the degree of Bachelor of Science - Honours in Geology in 1989, a graduate of Laurentian University having obtained the degree of Masters of Science in Geology in 1992 and a graduate of the University of Western Ontario having obtained a Doctor of Philosophy in Geology in 1998.
3. I have been employed as a geologist for every field season (May - October) from 1987 to 1996. I have been continuously employed as a geologist since March of 1997.
4. I have been involved in mineral exploration and resource modeling for gold, silver, copper, lead, zinc, nickel, and uranium in Canada, United States, Mexico, Honduras, Chile, Cuba and Peru at the grass roots to advanced exploration stage since 1991, including resource estimation since 2006.
5. I am a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta and use the title of Professional Geologist (P.Geol.) (License No. 64456; 1999).
6. I am a member of the Association of Professional Engineers and Geoscientists of British Columbia and use the designation (P.Geo.) (Licence No. 38144; 2012).
7. I am a member of The Association of Professional Geoscientists of Ontario (APGO) and use the designation (P.Geo.) (Licence No. 2829; 2017).
8. I have read the definition of qualified person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of National Instrument 43-101.
9. I am an author of this report and responsible for parts of sections 1, 6, 10, 11, 12, 14, 25 and 26 as they pertain to the J Zone Mineral Resource Estimate. I have reviewed these sections and accept professional responsibility for these sections of this technical report.
10. I personally inspected the subject property and drill core on October 6 to 8, 2010.
11. I have had prior involvement with the subject property, which included completion of the "Mineral Resource Estimate for Denison Mines Corp. on the J Zone Uranium Deposit, Waterbury Lake Property located in the Athabasca Basin, Northern Saskatchewan" dated September 6, 2013, a "Technical Report on the Revised Resource Estimate on the J Zone Uranium Deposit" for Fission Energy Corp. dated January 18, 2013 and the "Technical Report on the Waterbury Lake Uranium Project Including Resource Estimate on the J Zone Uranium Deposit" for Fission Energy Corp., dated February 29, 2012.

12. I am independent of Denison Mines Corp. as defined in Section 1.5 of National Instrument 43-101.
13. As at the effective date of the technical report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
14. I have read National Instrument 43-101, Form 43-101F1 and confirm that this technical report has been prepared in accordance therewith.

Signed and dated this 21st day of December, 2018 at Fredericton, New Brunswick.

["signed and sealed"]
Allan Armitage, Ph. D., P. Geol., SGS Canada Inc.

CERTIFICATE OF QUALIFIED PERSON

To accompany the report entitled: Technical Report with an Updated Mineral Resource Estimate for the Waterbury Lake Property, Northern Saskatchewan, Canada, with an effective date of December 21, 2018.

I, Alan Sexton, do hereby certify that:

1) I am a consulting geologist with GeoVector Management Inc., with a business address at 10 Green Street, Suite 312, Ottawa, Ontario, Canada.
2) I am a graduate of Saint Mary's University having obtained the degree of Bachelor of Science – Honours in Geology in 1982. I am a graduate of Acadia University having obtained the degree of Masters of Science in Geology in 1988. I have been continuously employed as a geologist since May of 1985. I have been involved in mineral exploration, including resource estimation, for gold, silver, copper, lead, zinc, nickel, uranium and diamonds in Canada and the United States since 1979.
3) I am a member of the Association of Professional Geoscientists of Ontario (APGO) and use the title of Professional Geologist (P.Geo.) (License No. 0563; 2002).
4) I have read the definition of qualified person set out in National Instrument 43-101 and certify that by virtue of my education, affiliation to a professional association, and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of National Instrument 43-101.
5) I am independent of Denison Mines Corp. as defined in Section 1.5 of National Instrument 43-101.
6) I am an author of this report and responsible for parts of sections 1, 6, 10, 11, 12, 13, 14, 25 and 26. I have reviewed these sections and accept professional responsibility for these sections of this technical report.
7) I have had prior involvement with the subject property, which included completion of the "Mineral Resource Estimate for Denison Mines Corp. on the J Zone Uranium Deposit, Waterbury Lake Property located in the Athabasca Basin, Northern Saskatchewan" dated September 6, 2013, a "Technical Report on the Revised Resource Estimate on the J Zone Uranium Deposit" for Fission Energy Corp. dated January 18, 2013.
9) I personally inspected the subject property and drill core on August 1, 2012.
10) I have read National Instrument 43-101, Form 43-101F1 and confirm that this technical report has been prepared in accordance therewith;
11) As at the effective date of the technical report, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Signed and dated this 21st day of December, 2018 at Ottawa, Ontario

["signed and sealed"]
Alan Sexton, M.Sc., P.Geo., GeoVector Management Inc.